DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE E-604 DMEA NO. 2874

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(Withdrawn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

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

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

Left Side

✓ Interim Royalty Audits - folder 4
Reports of Royalty Review
✓ Certification of Discovery
Certificate of Audit (Final)
Interim Audit(s)
✓ Report of Review
✓ Termination Notice or Agreement
Recision Notice
✓ Assignment of Contract
✓ Contract Amendments (latest on top)
✓ Contract with all exhibits and annexes
Owner's Consent to Lien
Subordination Agreement
✓ Leases and assignments of leases
✓ Application and attachments
(3) ✓ Envelope for maps

Right Side

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

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

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

Left Side

Folder No. 3: (In chron. order)
~~Interim Summary Reports by W. O. Engineers~~ Correspondence
4 - Reports

Right Side

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

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

Folder No. 4: Settlement Sheets - Reports

~~Folder No. 5: Drill Logs~~

R.G.B.

9775

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Washington office pertaining to Amended Contract Idm-E604, Docket DMEA-2874 (Manganese), dated September 19, 1956, but effective September 21, 1953, with

Irving G. Irving and Robert H. Nelson
Hirbour Building
Butte, Montana
and their assignee
Umont Mining, Inc.
King Street Dock
Burlington, Vermont

for the purpose of determining the amount of royalty payable to the U. S. Government on sales of minerals from property referred to as the Plutus and Norwich Claims located in Silver Bow County, Montana, during the period April 14, 1960, through October 25, 1963.

A certification of discovery or development was issued on August 9, 1956, and, in accordance with Articles 6 and 10 and Annex II of the Amended Contract, royalty is payable on all minerals produced from the land described in Article 2 of the contract for a period of 13 years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. A Report of Review dated May 8, 1958, indicated accepted costs under the exploration contract amounting to $59,349.83 with the Government's contribution on a 75 percent basis being $44,512.39.

The status of the project, the scope of review, and the reasons therefor are stated on page 2.

This review found no sales subject to the Government's royalty subsequent to the period covered by a prior Report of Royalty Review which found the sales subject to the Government's royalty through April 13, 1960, to be $577,232.00. The royalty account as of April 13, 1960, was:

Total Royalty Payable	$28,533.15
Total Royalty Paid	28,533.15
Balance of Royalty Due	$ -0-

As of October 25, 1963, the royalty account of this project was found to be:

Total Royalty Payable	$28,533.15
Total Royalty Paid	28,533.15
Balance of Royalty Due	$ -0-

November 1, 1963

E. D. Talbert, OME Auditor

Idm-E604 Umont Mining, Inc., Assignee DMEA-2874

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

This Amended Contract provides that the Operator, as principal if the producer or as surety if not the producer, shall pay to the Government a percentage royalty on all minerals produced from the land thereunder. The land consists of portions of the patented Plutus and Norwich claims in secs. 10 and 15, T. 3 N., R. 8 W., M.P.M., Butte Mining District. At the time this contract was executed the Operator owned the Norwich claim and a one-quarter interest in the Plutus claim. The other three-quarters interest in the Plutus claim was leased from The Anaconda Company and the National Bank of Commerce of Seattle under an agreement expiring June 30, 1961. The land was subject to a mortgage held by the General Services Administration under Contract GS-10P(D)-3. The usual requirement of subordination agreements and consents to lien was waived.

On April 15, 1956, the Umont Mining, Inc., obtained control of the property under an Agreement for Lease and Option executed by Irving and Nelson. On October 3, 1956, the Government consented to assignment of the contract without releasing the assignor from any of the provisions of the contract or any amendment thereof.

Exploration work under the contract was terminated effective August 31, 1957, by an agreement dated November 22, 1957. Production during the exploration period and thereafter into March 1958 resulted in the sale of 311.082 tons of oxide ore and 22,791.8401 tons of carbonate ore, all of which was sold to the General Services Administration under the Domestic Manganese Purchase Program. The $577,232.00 in proceeds are covered by a Report of Royalty Review dated April 13, 1960, and prior Royalty Audit Reports and Certificates.

All operations on the property ceased on March 6, 1958, the pumps were pulled about March 10, 1958, and thereafter surface facilities were dismantled, all equipment removed, and the shaft sealed. Subsequent examinations and inquiries by OME regional representatives disclosed no change in status through April 13, 1960.

In an August 11, 1962, reply to a MME Form 63 inquiry the Operator-Assignee advised that no production had occurred since April 13, 1960, but that on December 20, 1961, all of its interests in the property had been conveyed without reservations to The Anaconda Company. By an October 25, 1963, reply to a MME Form 63 the Chief

Geologist, Montana Division, The Anaconda Company, 526 Hennessy Building, Butte, Montana, advised that neither change in property status nor production had occurred since April 13, 1960.

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(1) The files indicate that all sales of production since the date of the contract have been reported and proper royalty thereon paid;

(2) The property has been inactive since March 1958; and

(3) The administrative cost to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

S.114.
5/9/60

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Office of Minerals Exploration, Washington, D. C., and the Executive Officer, Region I, Spokane, Washington, pertaining to Contract No. Idm-2604, Docket No. DMEA-2874 (Manganese), dated September 21, 1953, as amended, with

Umont Mining, Inc. (Assignee)
84 Birbour Building
Butte, Montana
and
Irving G. Irving and Robert E. Nelson (Assignors)

for the purpose of determining the amount of royalty due the U. S. Government on sales of minerals from property referred to as Plutus and Norwich Claims located in Silver Bow County, Montana, during the period January 1, 1958, through April 15, 1960.

A certification of discovery or development was issued on August 9, 1956, and, in accordance with Articles 6 and 10 and Annex II of the Amended Contract, dated September 19, 1956, and effective as of September 21, 1953, royalty is payable on all minerals mined or produced from the land described in Article 2 and Annex I of the Amended Contract for a period of 15 years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. A Report of Review in lieu of a final cost audit dated May 6, 1958, indicated accepted costs under the exploration contract amounting to $89,349.85 with the Government's contribution, on a 75 percent basis, being $44,512.39.

The scope of review and the reasons therefor are stated on page 2.

This review established the total sales of manganese ore for the period to be $4,460.40. Royalty due the Government at rates specified in the contract is $223.01.

Prior royalty audits dated May 9, 1955, and March 5, 1958, found the sales subject to Government royalty through December 31, 1957, to be $372,771.60 which added to the sales for this subsequent period make a total of $377,232.00. The royalty account as of December 31, 1957, was:

Total Royalty Due	$28,518.14
Total Royalty Paid	28,530.55
Overpayment of Royalty	$ 248.41

At April 15, 1960, the royalty account of this project was found to be:

Total Royalty Due	$28,533.15
Total Royalty Paid	28,533.15
Balance of Royalty Due	$ -0-

C. E. Fisher

April 15, 1960 C. E. Fisher, OMX Auditor

Idm-8604 Gemmt Mining, Inc. EMEA-2874

SCOPE OF REVIEW AND REASONS THEREFOR

My review included a computation and tabulation of copies of acceptance invoices submitted by GSA Manganese Purchase Depots, Butte and Philipsburg, Montana, in support of royalty withheld from settlements with the Operator and paid to the Executive Officer, Region I, during the period under review. A summary of the account for the period and to date follows:

	Oxide Ore	Carbonate Ore	Totals
January 1, 1958 to April 15, 1960			
Short dry tons	-	248.1358	248.1358
Proceeds	-	$ 4,460.40	$ 4,460.40
Royalty Paid	-	$ 223.01	$ 223.01
September 21, 1953 to April 15, 1960			
Short dry tons	311.0820	22,791.8401	23,101.9221
Proceeds	$5,864.05	$571,367.95	$577,232.00
Royalty Paid	$ 293.21	$ 28,239.94*	$ 28,533.15*

* After refund of $248.41 overpayment noted in royalty audit certificate dated March 3, 1958.

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(1) Semi-annual reports of investigations by representatives of the Field Team, Region I, and other documents in the files indicate that mining operations have been discontinued and that proper royalty has been received by the Government on all production from the land described in the contract since September 21, 1953; and

(2) The administrative cost to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

M E Form 22
April 59

DEPARTMENT OF THE INTERIOR
Office of Minerals Exploration

CHECK SHEET OF EXAMINING ENGINEER

Operator's Name **Umont Mining, Inc.**

Address **Butte, Montana**

Exploration Contract No. **Idm-E604** Docket No. **DMEA-2874**

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

There has been no production from this property since March 1958.

April 13, 1960
Date

S. W. Zoldok
Mining Engineer
S. W. Zoldok

53362

RECEIVED
DATE
3/14 WSM

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

ROYALTY AUDIT CERTIFICATE

I have examined the records and sales documents pertaining to the sale of manganese ore for the period of April 5, 1955 to December 31, 1957, by the

MONTANA MINING, INC., ASSIGNEE
Butte, Montana
Successor to
Irving G. Irving and Robert H. Nelson, Partners, Assignors
Butte, Montana

produced from the Plutus and Norwich Claims located in Silver Bow County, State of Montana, under the terms of Amended Contract No. Idm-E604, Docket No. DMEA 287H (manganese) dated September 21, 1953, including Amendments Nos. 1 and 2.

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

The audit established the net sales of manganese ore for this period upon which royalties due were paid to be $555,851.68. Royalty due the United States Government at the contract rates of two and one-half percent to five percent is $27,530.12.

The prior audit conducted by C. E. Fisher, DMEA auditor for the period of September 21, 1953 to April 4, 1955 found the sales as of April 4, 1955 to be $16,919.92, which added to sales for this period, make a total of $572,771.60 as of December 31, 1957. The royalty amount as of April 4, 1955, was

Total Royalties Due	$780.02
Total Royalties Paid	780.02
Balance Royalties Due	$ None

As of December 31, 1957, the royalty account of this project was found to be:

Total Royalties Due	$28,310.14
Total Royalties Paid	28,558.55
Overpayment of Royalties	$ 248.41

C. A. Turner, Auditor.

March 3, 1958

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

ROYALTY AUDIT REPORT

I. INTRODUCTION

On January 27, 1958, an audit was made of the production, sales and royalty accounts and records of the

UNION MINING, INC., ASSIGNEE
Butte, Montana
Successor to
Irving G. Irving and Robert H. Nelson, Partners, Assignors
Butte, Montana

pertaining to the sale of manganese ore for the period of April 5, 1955 to December 31, 1957, produced from the Plutus and Norwich Claims, located in Silver Bow County, State of Montana, in accordance with the Amended Contract No. Idm E604, Docket No. DMEA 2874, dated as of September 21, 1953, including Amendments Nos. 1 and 2.

The Operator's general records are maintained by and in the possession of Newland and Blinn, Certified Public Accountants, Butte, Montana. The general records were not available at the time of the audit. However, the operating, cost and sales statements prepared by Newland and Blinn and the other recors of original entry available in the Operator's office were considered sufficient for the purpose of this audit.

During the on-site audit the following representatives of the company and the U.S. Bureau of Mines were present and consulted as necessary:

Mr. Dooley Wheeler, Jr.	-	Vice-President and General Manager
Mr. Wilbur F. Criswell	-	Resident Manager
Mr. John A. Bowsher	-	U. S. Bureau of Mines

The cooperation of all concerned greatly facilitated the audit.

II. GENERAL INFORMATION

The Amended Contract as amended provides for exploration work amounting to $108,510.70 with the Government's participation on a 75 percent basis being $81,383.00. A Report of Review dated February 24, 1956, issued by C. A. Turner, DMEA Auditor, indicated the accepted costs of Stage I to be $23,190.70 with the Government's participation on a 75 percent basis being $17,393.03. Exploration continued to August 31, 1957 on the basis of fixed unit costs of units of work completed, increasing the total cost of exploration (subject to audit) to $59,253.83 with the Government's participation on a 75 percent basis being $44,440.37. The contract was terminated by Termination Agreement effective August 31, 1957.

The Amended Contract No. Idm E 604, Docket No. DMEA 2874, dated as of September 21, 1953, including Amendments Nos. 1 and 2 superseded the prior contract having Contract No. Idm F 604, Docket No. DMEA 2874, dated September 21, 1953, including Amendments Nos. 1 to 7 inclusive, and provided additional exploration work. Annex II of the Amended Contract provides that the amount contributed by the Government under the Prior Contract is incorporated into this Amended Contract and is repayable pursuant to the royalty provisions of the Amended Contract.

A Certificate of Discovery or Development, dated August 9, 1956, provided for a repayment period of eleven years, ending September 21, 1964, applicable to production from lands described in Article 2 and Annex I of the Amended Contract.

The General Services Administration, under authority of their manganese purchase regulation No. 4 as amended, have purchased all of the Operators production of manganese at the Butte, Montana, Depot.

The Operator's records are kept under the supervision of Newland and Blinn, Certified Public Accountants, Butte, Montana, who prepare the various mine operating statements for management's guidance. The general ledger was not made available during the audit as it was in the possession of the accounting firm who were preparing the monthly statements. However, comparison of the items of original entry such as the mine production records, sales records, and royalty records, with the cost and operating statements prepared by the accounting firm, indicated the records pertaining to DMEA royalties to be adequate for the purpose of this audit.

The Operator is conducting mining operations on ground exempt from DMEA royalties concurrently with the exploration work. Ore subject to DMEA royalty and ore not subject to DMEA royalty are not commingled, but kept separate. Adequate records are maintained on the ore from the various locations, which serve as a check on the identity of the ore subject to DMEA royalties and ore not subject to DMEA royalties.

A prior royalty audit was made on May 4, 1955, as indicated by the Royalty Audit Report and Royalty Audit Certificate dated May 9, 1955, by C. E. Fisher, DMEA Auditor, covering the period of September 21, 1953 to April 4, 1955. The present audit extends the period covered by audit to December 31, 1957.

III. SCOPE OF AUDIT AND FINDINGS

A. Conference with Examining Engineer.

A conference with the examining engineer, Mr. John A. Bowsher, U. S. Bureau of Mines, disclosed the following:

(a) The Operator does not stockpile ore subject to royalty repayment.

(b) The Operator does not commingle production subject to DMEA royalties with exempt production.

(c) The Operator does stockpile mine rejects that may have potential value within the royalty payment period. The examining engineer considers, and this auditor agrees, that the Operator maintains adequate records pertaining to the mine rejects stockpiled.

(d) Assay controls are deemed adequate.

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

(f) Periodic examinations by the examining engineer indicate that the Operator is properly reporting the current production subject to DMEA royalties.

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

B. Audit of Settlement Statements

A considerable amount of preaudit work was accomplished in the DMEA office, Region 1, Spokane, Washington, prior to the on-site audit. This consisted of a re-computation of the royalties due as indicated by the General Services Administration settlement statements (acceptance invoices), and the payment of royalties to DMEA. The information was tabulated and reconciliation was made with the amounts of royalty payments received by the Regional Finance Officer. These tabulations are filed as part of my work papers. A summary analysis of these statements is included in Section IV of this audit report.

The on-site audit included a comparison and reconciliation of the data compiled during the preaudit with the available records of the Umont Mining Company at their office in Butte, Montana. The Irving and Nelson records concerning Stage I of the exploration project were not available. Shipments made by Irving and Nelson were verified by the records at the Manganese Purchase Depot at Butte, Montana.

IV. CONCLUSIONS AND RECOMMENDATIONS

A summary analysis of the Operator's production and sales during the period covered by this audit, the prior audit, and the totals to December 31, 1957, together with amounts subject to DMEA royalties and royalties paid follows:

SUMMARY OF SALES AND ROYALTIES PAID

	Period 9-21-53 TO 4-4-55	Period 4-5-55 TO 12-31-57	TOTAL
Sales to General Services Administration			
Manganese Oxide Ore			
Long Dry Tons	243.6526	67.4294	311.0820
Sales subject to royalty	$ 4,340.86	$ 1,523.19	$ 5,864.05
Royalty Paid @ 5%	$ 217.05	76.16	$ 293.21
Manganese Carbonate Ore			
Long Dry Tons	962.0209	21,829.8192	22,791.8401
Sales subject to royalty	$12,579.06	$554,328.49	$566,907.55
Royalty Paid	$ 562.97	$ 27,702.37	$ 28,265.34

Percentage Royalty Paid

$10,245.01	$ -	@ 5.0%	$ 512.26	$ -	$ 512.26
-	553,299.16	@ 5.0%	-	27,665.01	27,665.01
-	266.94	@ 4.0%	-	10.68	10.68
233.10	-	@ 3.5%	8.16	-	8.16
-	762.39	@ 3.5%	-	26.68	26.68
955.69	-	@ 2.5%	23.89	-	23.89
295.52	-	@ 2.0%	5.91	-	5.91
849.74	-	@ 1.5%	12.75	-	12.75
$12,579.06	$554,328.49		$ 562.97	$ 27,702.37	$ 28,265.34

* * * * * *

SUMMARY OF SALES AND ROYALTIES PAID

TOTAL SALES	$16,919.92	$555,851.68	$572,771.60
TOTAL ROYALTIES PAID	$ 780.02	$ 27,778.53	$ 28,558.55

The audit confirmed the accuracy and propriety of the royalty payments received by the Finance Officer applicable to the sales of manganese ore during the period under audit, April 5, 1955 to December 31, 1957.

The audit also determined that a substantial delay was experienced in receiving royalty payments from the General Services Administration on shipments of manganese ore by the Operator to the Manganese Purchase Depot, Butte, Montana, as follows:

Shipments	Long Dry Tons	Shipments	Royalty Due
2-9-57 to 11-16-57			
Lots Drift 23 to 79 Inc.	3,871.8476	$80,584.87	$ 4,029.28
2-9-57 to 12-12-57			
Lots Raise 4 to 176 Inc.	15,039.6470	411,501.71	20,575.13
TOTAL	18,911.4946	$492,086.58	$24,604.41

The check for $24,604.41 was issued by the General Services Administration December 27, 1957 and received by the Regional Finance Officer on December 31, 1957. This concludes the shipments taken into consideration for the period under audit, April 5, 1955 to December 31, 1957. However, one more shipment was made December 18, 1957 covering Lot 177-178 raise amounting to $1,940.05 with royalty due at 5 percent $97.00, which was received by the Finance Officer January 3, 1958.

It was also determined by the audit that royalties were paid at 5 percent regardless of the value per ton realized on the majority of the shipments. This practice resulted in royalty overpayments of $248.41. See Schedule No. 1.

At the conclusion of the audit the findings were discussed with Mr. Wilbur F. Criswell, Resident Manager. This audit report and findings was discussed with Mr. A. E. Weissenborn, Executive Officer, DMEA Field Team, Region I.

C. A. Turner, Auditor

March 3, 1958.

SCHEDULE NO. 1

SUMMARY OF ROYALTY OVERPAYMENTS
April 5, 1955 to December 31, 1957

SETTLEMENT SHEET DATE	LOT NO.	SALES TONS	SUBJECT TO ROYALTY AMOUNT	VALUE PER TON	ROYALTIES PAID RATE	ROYALTIES PAID AMOUNT	ROYALTIES DUE PER CONTRACT RATE	ROYALTIES DUE PER CONTRACT AMOUNT
8-1-55	3	28.0611	$ 258.80	$ 9.22	5.0%	$ 12.94	2.5%	$ 6.47
3-16-56 D	39	46.3558	502.50	10.84	5.0%	25.13	4.0%	20.10
12-11-56 D	2) 3) 4) 5)	632.5210	6,563.54	10.37	5.0%	328.18	3.5%	229.72
1-18-57 D	17) 18)	238.0576	2,628.16	11.04	5.0%	131.41	4.5%	118.27
3-19-57 D	27	39.4723	373.41	9.46	5.0%	18.67	2.5%	9.34
7-16-57 D	45	43.2799	494.69	11.43	5.0%	24.73	4.5%	22.26
8-2-57 D	53	40.8942	402.81	9.85	5.0%	20.14	3.0%	12.08
8-16-57 D	59) 62)	133.1027	1,416.21	10.64	5.0%	70.81	4.0%	56.65
9-5-57 D	72) 73) 74) 76)	180.7544	1,934.29	10.70	5.0%	96.71	4.0%	77.37
10-28-57 R	154) 156) 158)	252.0210	2,583.22	10.25	5.0%	129.16	3.5%	90.41
11-14-57 R	160) 167)	143.2794	1,328.20	9.27	5.0%	66.41	2.5%	33.21
			$18,485.83			$924.29		$675.88

TOTAL ROYALTIES PAID ON ABOVE LOTS	$924.29
ROYALTIES DUE PER CONTRACT	$675.88
OVERPAYMENT OF ROYALTIES	$248.41

Check Sheet of Examining Engineer

Operator's Name Umont Mining, Inc.

Address 507 Silver Bow Building

Butte, Montana

Exploration Contract No. Idm-E604 Docket No. DMEA-2874

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

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

John A Bowsher
Mining Engineer

Date January 28, 1958

82448

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DMEA
RECEIVED FEB 19 1958
DATE | INITIALS | CODE

Government's Copy

Long
Dwinger
Chapman
Martin
Lodge
Chambers
Johnson

TERMINATION AGREEMENT

It is agreed this 22nd day of November, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government" and Umont Mining, Inc. (Assignee), hereinafter called the "Operator," parties to that certain Amended Exploration Project Contract No. Idm-E604 (Docket No. DMEA 2874), executed September 19, 1956, as amended, hereinafter referred to as the "Contract," that:

1. Effective August 31, 1957, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the fixed unit costs of work performed prior to September 1, 1957.

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

4. The Certification of Discovery or Development heretofore issued under the Prior Contract, together with all rights of the Government respecting percentage royalty and liens to secure the payment thereof, reports (including preservation of Operator's records), accounts, audits, and the right to recover any overpayment are hereby preserved.

5. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract except as otherwise provided for in this Termination Agreement.

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

UMONT MINING, INC.

By L. P. Evans, Jr.
Title President

THE UNITED STATES OF AMERICA

By
Administrator, Defense Minerals Exploration Administration

OK DPW

400

DOCKET
Surname:
Holt
Chapman
Martin
Dwyer
"Appr. Sol. Off."
Chandler
Hofmann

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

To: Irving G. Irving and
Robert H. Nelson
Hirbour Building
Butte, Montana

Pursuant to the provisions of Exploration Project Contract No. Idm-E604, executed September 21, 1953 (Docket No. DMEA-2874), as amended, hereinafter called the "Contract", between Irving G. Irving and Robert H. Nelson, a partnership, and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty and its lien therefor and on the land described in the contract, the Government considers and therefore certifies that a discovery or development from which production may be made has resulted from the exploration.

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

Drifting on the Plutus 200-, 244-, and 275-foot levels, and raising from the Plutus 200-foot level have indicated a substantial quantity of manganese, occurring as manganese oxides and carbonate with small amounts of lead and zinc, in northeasterly to easterly trending quartz-bearing veins in granite or quartz-monzonite and aplite.

THE UNITED STATES OF AMERICA

Dated: AUG 9 - 1956

By O O Mitterdorf
Administrator, Defense Minerals
Exploration Administration

cc: Docket
Code 110
Code 400
Code 800
Operating Committee
Adm. Rend. File
R. W. Geehan, USBM
H. T. Reno, USBM
T. Kiilsgaard, USGS

cc: FT, Reg. I NW Dist.
C. A. Fredell, EPS, GSA
Anaconda Company
Nat'l Bank of Commerce of Seattle
Finance Officer

SPHolt/ls
8/6/56

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

EXTRA COPY

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Umont Mining, Inc., Assignee
Butte, Montana

and

Irving G. Irving and Robert E. Nelson, Partnership, ~~Assignor~~
Butte, Montana

pertaining to Amended Exploration Project (Irving and Nelson) Contract No. Idm-E604, Docket No. DMEA-2874, dated as of September 21, 1953, including Amendments Nos. 1 and 2, Assignment of Contract dated September 26, 1956, and Termination Agreement dated November 22, 1957 having an effective date of August 31, 1957, and the Prior Exploration Project Contract No. Idm-E604, Docket No. DMEA-2874, dated September 21, 1953, including Amendments Nos. 1 to 7 inclusive, for the months of October 1953 to August 1957 inclusive, covering a project for the exploration of manganese on property known as the Plutus and Norwich Claims, located in Silver Bow County, State of Montana.

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

This review was made in lieu of a final audit of the Operator's accounts and records for the reasons given on the attachment to this report.

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

Total cost claimed by Operator August 1957 Form MF-104	$59,253.83
Exceptions per schedule	None
Total accepted cost claimed	$59,253.83
Additional acceptable cost, if claimed, claimed	$ 96.00

The contract calls for a 75 percent participation of accepted costs. Therefore, payments as follows are valid and proper:

On cost claimed	$44,440.39
On additional cost if claimed	72.00
Total amount payable, if claimed - claimed	$44,512.39
Amount payable on audited claim	$44,440.39
Amount reimbursed	44,440.39
Balance due Operator	$ -0-
Additional payable, if claimed	$ 72.00

Pd. claimed

May 8, 1958

C. A. Turner, Auditor

Schedule of Reasons for Report of Review in Lieu of Final Audit

Umont Mining, Inc. Docket No. DMEA-2874 Contract Idm-E604

(a) The accepted costs ($23,190.70) of Stage I incurred under a contract provision for payment by the Government on the basis of Agreed Unit Costs of units of work actually performed, were determined by Report of Review dated February 24, 1956, issued by C. A. Turner, DMEA Auditor, and

(b) the balance of accepted costs ($36,159.13) of Stages II and III were incurred under a contract provision for payment by the Government on the basis of fixed unit costs of work actually performed.

C. A. Turner, Auditor

May 8, 1958

Schedule of Work Completed

Umont Mining, Inc. DMEA-2874 Idn-E604

Stage I

Agreed Unit Costs				
Drifting	467'	@ $34.00	$15,878.00	
Timbering	454.9'	@ 5.00	2,274.50	
Raising	72'	@ 35.00	2,520.00	
Assays	67	@ 2.00	134.00	
Rehabilitation of shaft	36.5'	@ 35.00	1,277.50	
Cutting stations	892.5'	@ 1.24	1,106.70	
Accepted costs First Interim Audit				$23,190.70

Stage II

Fixed Unit Costs				
Installation of facilities and pumping equipment 300 level Plutus shaft			2,082.00	
Rehabilitate Plutus shaft			3,148.00	
Rehabilitate 400 station	3200'	@ .50	1,600.00	
Rehabilitate crosscut to Norwich	200'	@ 20.50	4,100.00	
Drifting	394'	@ 32.00	12,608.00	
Normal Timbering	371'	@ 10.00	3,710.00	
Spiling	20'	@ 30.00	600.00	
Diamond Drilling Underground	15'	@ 5.00	75.00	
Diamond Drilling - Surface	71.5'	@ 4.75	339.63	
Assays	61	@ 3.50	213.50	
Total costs Stage II				28,476.13

Stage III

Fixed Unit Costs				
Bulldozing	7.5 hours	@ 14.00	105.00	
Diamond Drilling - Surface	1138'	@ 6.00	6,828.00	
Cementing, redrilling or reaming	300'	@ 2.50	750.00	
Total costs Stage III				7,683.00

Total Acceptable Costs	$59,349.83
Total Acceptable Costs Claimed	59,253.83
Net Additional Acceptable Cost, if claimed	
Drifting 3' @ $32.00	$ 96.00

C. A. Turner, Auditor

May 8, 1958

400

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

RECEIVED
FEB 27 1956

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Irving G. Irving and Robert H. Nelson
64 Hirbour Building
Butte, Montana

pertaining to Exploration Project Contract No. Idm-E604, Docket No. DMEA-2874, dated September 21, 1953 including Amendments Nos. 1 to 7, inclusive, for the period of September 21, 1953 to January 21, 1956, covering a project for the exploration of manganese on property known as the Plutus Lode Mining Claim, located in Silver Bow County, State of Montana.

My review included an examination of the Monthly Reports (Forms MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, consultation with the Executive Officer of the DMEA Field Team, and a determination of the reasonableness and propriety of the costs.

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

All of the costs incurred ($23,190.70) were under a contract provision for payment by the Government on the basis of Agreed Unit Costs of units of work actually performed.

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

Total Cost as billed by Contractor	$23,190.70
Exceptions	None
Total Accepted Cost	$23,190.70

The contract calls for a 75 percent participation of exploration expenses by the United States Government. Therefore, payment to the Contractor by the Government in the amount of Seventeen thousand three hundred ninety three and 03/100 Dollars

--$17,393.03--

is considered valid and proper, provided that the Regional Executive Officer, the Administrator, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract.

C. A. Turner, Auditor

February 24, 1956.

Government's copy

AMENDED EXPLORATION PROJECT CONTRACT
UMONT MINING, INC., ASSIGNEE
DOCKET NO. DMEA-2874

not used

AMENDMENT NO. 3

It is agreed this 20th day of December, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Umont Mining, Inc., Assignee, hereinafter called the "Operator," that Amended Exploration Project Contract No. Idm-E604 (Docket No. DMEA-2874), executed September 19, 1956, as amended, hereinafter referred to as the "Contract," is further amended as follows:

1. The date fixed in Article 1 of the Contract for completion of the work is extended from January 1, 1958, to October 1, 1958.

2. (a) Work under the Contract shall be suspended during the period beginning September 1, 1957, and ending not later than March 1, 1958.

(b) The Government shall not contribute to any costs incurred by the Operator during the period of suspension nor to any cost of rehabilitation or repair which in its opinion would not have occurred if there had been no suspension of the work.

(c) The Operator, at its own cost and expense, without contribution by the Government, during the period of suspension shall preserve and protect the project work and any property in which the Government has an interest.

3. The maximum period for royalty payments and the lien to secure the payment thereof, provided for in the Contract, is increased from thirteen (13) years to fourteen (14) years.

4. The Operator shall pay to the Government a royalty as provided in Articles 6(b)(2) and 10 of the Contract on any of its production that is transported through any workings to the cost of which the Government has contributed.

5. The drifting eastward provided for in Stage II of the Amended Contract shall be completed (approximately 156 feet); the drilling of one hole approximately N. 45 degrees E (approximately horizontal with the drift) for about 100 feet, as provided in Amendment No. 1 to the Amended Contract, shall be completed.

6. All or any part of the 650 feet of drifting and/or crosscutting designated in Stage III of the Amended Contract may be completed if approved by the Government, and the balance of diamond drilling allotted in Amendment No. 1 thereto may be completed if approved by the Government.

7. It is the essence of this Contract that the work be resumed on or before the termination of the period here fixed for suspension, and be completed before the termination of the period fixed for completion; and if not so resumed and completed, in the manner required by the Contract, the following provisions shall thereupon become effective:

(a) The Contract and all obligations of the parties thereunder, except as hereinafter provided, shall be and are hereby terminated as follows:

(i) Effective August 31, 1957, if the work has not been resumed on or before March 1, 1958.

(ii) Effective October 1, 1958, if the work is resumed on or before March 1, 1958, but is not completed on or before October 1, 1958.

(b) The Government will contribute only to allowable costs incurred prior to the relevant effective date set forth in 7(a) above.

(c) The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of the final report

Long
Hughes
Hopkins
Martin
Chambers
Selfridge

and final account.

(d) All rights of the Government respecting percentage royalty and liens to secure the payment thereof, reports (including preservation of Operator's records), accounts, audits, and the right to recover any overpayment, are hereby preserved.

(e) The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of the Contract, except as otherwise provided for in this Amendment No. 3.

This Amendment shall not be construed to increase the total estimated cost of the project, the aggregate amount which the Government may be required to contribute, the amount of any item designated as "allowable maximum," or the agreed unit cost of any item of work.

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C. Mittendorf
Administrator, Defense Minerals
Exploration Administration

UMONT MINING, INC.

By_____

Title_____

JUSTIFICATION

The Operator requests, and the Field Team recommends, approval of a termination agreement due to the poor results found in the east drift and 100 foot diamond drill hole on the 400 level of the Norwich mine. The Operator accents the possibility of flooding the mine by further drifting to the east, but this Division does not believe this is vital as this possibility was covered by allowable diamond drill holes in Amendment No.1.

The results of the surface diamond drill holes No. 1 and No. 2 were poor, showing little indication of any good manganese mineralization. The Plutus and Norwich veins were cut and neither vein indicated any significant possibilities of minable ore bodies. As a result of this work this division concurs with the Operator and the Field Team that no further work to the east on the 400 level is justified and under these conditions the drilling of hole No. 3 to the east on surface is not warranted.

Under the above conditions termination of the project is justified.

Government's Copy

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DMEA
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7/10	WGM	400

AMENDED EXPLORATION PROJECT CONTRACT
UMONT MINING, INC. (ASSIGNEE)
DOCKET NO. DMEA-2874

AMENDMENT NO. 2

It is agreed this 21st day of June, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Umont Mining, Inc., (Assignee), that Amended Exploration Project Contract No. Idm-E604, (Docket No. DMEA-2874), executed September 19, 1956, as amended, is further amended, effective as of that date, as follows:

1. In Amendment No. 1, in paragraph 2(a) the following is added as a footnote:

"When difficult operating conditions necessitate, EX drilling may be done in lieu of AX drilling, with Government approval and with a corresponding adjustment in cost"

2. In Amendment No. 1, paragraph 2 (b) is revised to read:

"Under the 'Estimated Cost of the Project,' the the following is added:

'Diamond drill approximately 500 feet at a total cost not to exceed $2,500.00
AX or larger size at $5.00/ft.
EX size at $4.75/ft.
The unit cost includes cementing and redrilling and/or reaming and casing.'"

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Martin
Chambers
Selfridge
Johnson

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

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C D Mitchell
Administrator, Defense Minerals
Exploration Administration

UMONT MINING, INC.

By Dudley P. Wheeler Jr.

Title General Manager

Gov't. Copy
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AMENDED EXPLORATION PROJECT CONTRACT
UMONT MINING, INC., (Assignee)
DOCKET NO. DMEA-2874

AMENDMENT NO. 1

It is agreed this 1st day of March, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Umont Mining, Inc., Assignee, that Amended Exploration Project Contract No. Idm-E604 (Docket No. DMEA-2874), dated September 21, 1953, is amended, effective as of the effective date of the amended contract, as follows:

1. In Article 1 of the Amended Contract the estimated total cost of the project is increased from $106,010.70 to $108,510.70 and the amount of Government participation at 75 percent is increased from $79,508.00 (rounded) to not to exceed $81,383.00 (rounded).

2. In Exhibit "A":

(a) Under the "Description of the Work", not to exceed an aggregate of 500 feet of diamond drilling work (AX minimum size) is added to the work to be performed under the Amended Contract, as follows:

From the present face of the 400 level east drift (approximately 235 feet east of the 400 level crosscut from the Plutus shaft) drill one hole approximately N. 45 degrees E. (approximately horizontal with the drift) for about 100 feet to explore for en echelon parts of the vein.

At approximately 100-foot intervals, as the 400 level east drift is advanced beyond its present face, similar holes may be drilled to check for en echelon parts of the vein. In drilling such holes, a 2-inch pipe with a valve shall be set securely to permit control of any large water flow.

Mineralized zones shall be sampled and assayed for manganese.

(b) Under the "Estimated Cost of the Project", the following item is added:

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Lawyer
"Appd. Sol. Off."
Chapman
Martin
Chapelier
Selfridge

Diamond drill 500 feet @ $5.00/ft.
The unit cost includes, cementing,
redrilling, reaming and casing. $ 2,500.00

(c) The "Summary" at the end of Exhibit "A" is revised to read as follows:

SUMMARY

Cost of Stage I, as audited	$23,190.70	
Estimated Cost of Stage II	39,740.00	
Estimated Cost of Stage III	43,080.00	
Estimated Cost of 500 feet of additional diamond drilling	2,500.00	
Estimated total cost of the project		$108,510.70
Government participation @ 75% (rounded)		81,383.00

* * * * * * * *

Executed in sextuplicate the day and year first above written.

UNITED STATES OF AMERICA

By C O Mittendorf
Administrator, Defense Minerals
Exploration Administration

UMONT MINING, INC.

By Dooley P. Wheeler Jr.

Title General Manager

ket copy

ASSIGNMENT OF CONTRACT

WHEREAS, Irving G. Irving and Robert H. Nelson, a partnership, (hereinafter called the "Assignor"), entered into Amended Exploration Project Contract Ldm-2404 (Docket No. DMEA-2074), executed September 19, 1956 (hereinafter called the "Contract"); and

WHEREAS, Uranet Mining, Inc., a State of Vermont corporation, whose principal place of business is King Street Dock, Burlington, Vermont (hereinafter called the "Assignee"), has acquired the right to possession of the land which is the subject of the Contract, and the Assignee desires to complete the work under the Contract; and

WHEREAS, the Government has made a certification of discovery or development;

NOW THEREFORE, the Assignor, in consideration of the sum of One Dollar ($1.00) and other good and valuable consideration received from the Assignee does hereby assign, transfer, and convey to the Assignee all of its right, title, and interest in the Contract: Provided, That the Government shall make payment to the Assignee for all work performed under the Amended Contract.

The Assignor consents to all future amendments (including a Termination Agreement) and assignments of the Contract and waives notice thereof.

This Assignment is subject to the execution by the Assignee of the acceptance form set forth below and to the written consent of the Government.

Dated this 26th day of September, 1956.

IRVING AND NELSON

By Irving G. Irving [Seal]
Irving G. Irving (Partner)

By Robert H. Nelson [Seal]
Robert H. Nelson (Partner)

ASSIGNEE'S ACCEPTANCE

The Assignee, Uranet Mining, Inc., hereby accepts the above Assignment and agrees to be bound by the terms, provisions, and

Robert Dunger
"Appu. Sol. Vil."
Holt
Martin
Talbot
Selfridge
Johnson

conditions of the Contract.

Dated this 28th day of September, 1956.

[illegible] MINING, INC.

By Lewis P. Evans
President

I, Richard H. Wadhams, certify that I am the -- secretary of the corporation named herein; that Lewis P. Evans, Jr. who signed this instrument on behalf of the corporation, was then President of said corporation; that said instrument was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Richard H Wadhams [Corporate Seal]
Secretary

GOVERNMENT'S CONSENT

The Government, this 3d day of October, 1956, hereby consents to the above Assignment without releasing the Assignor, Irving and Nelson, from any of the terms, provisions, and conditions of the Contract, or any amendment (including a Termination Agreement) or assignment thereof.

THE UNITED STATES OF AMERICA

By C O Mathewson
Administrator, Defense Minerals
Exploration Administration

Docket Copy

MF-200A
(Rev. April 1956)

RECEIVED
AUG 16 1956

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
EXPLORATION PROJECT CONTRACT
(Short Form)

DMEA No.	Commodity	Contract No. Idm-E	County	State
2874	Manganese	604	Silver Bow	Montana

It is agreed as of September 21, 1953 between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Irving G. Irving and Robert H. Nelson, Partners

whose mailing address is 84 Hirbour Building
Butte, Montana
hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority and project.*—(a) This contract is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200A), the attached Annex I (land description), Exhibit A (work and costs), and the maps and documents listed therein. The project work is a search for indicated or undeveloped deposits of the commodity designated above. The Operator shall begin the work on or before April 17, 1956, and, subject to the provisions of Article 7 and Exhibit A, shall complete the work within 51-1/3 months from the date of the contract. See Article 10.

(b) The description of the work and the fixed cost for each unit of work to be performed (per foot of drilling, per foot of drifting, per hour of operations, etc.) are hereby agreed upon as specified in Exhibit A. The estimated total cost of the project work is $106,010.70. The Government will contribute 75 percent of the fixed unit cost of the work performed, not exceeding $79,508.00 (rounded) in accordance with the provisions of Articles 4 and 5.

(c) The Operator shall not transfer or assign this contract or any right or obligation thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The Operator represents and undertakes that Annex I correctly describes the land which is the subject of this contract and the nature of the Operator's rights of property and possession therein (whether as owner, lessee, or otherwise), and that such right, title, or interest is subject only to the following claims, liens, or encumbrances: See Annex I.

(b) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title of the land (lessor, seller, optionor, etc.) are attached, as follows: See Annex I.

(c) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. The Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing

in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. Two copies of such instrument shall be furnished to the Government. If the Government's rights to royalty as provided in Article 6 have been terminated, the provisions of this paragraph (c) shall become inapplicable.

ARTICLE 3. *Performance of the work.*—(a) Operator's responsibility.—The work shall be performed diligently, efficiently, expertly, in a workmanlike manner, and in accordance with good mining standards and State regulations governing health, safety, and liability insurance covering employment. The Operator shall provide suitable and adequate equipment, facilities, materials, supplies, and labor to complete the work, as specified in Article 1 (a).

(b) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after certification of discovery or development, to inspect production operations and underground workings. The Operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 4. *Contribution by the Government.*—The Government will make its contribution on the basis of the monthly vouchers referred to in Article 5 (b); but all payments by the Government are provisional only, subject to audit, and until the account between the Operator and the Government is finally audited and settled and the Operator's final report has been rendered, the Government may withhold such sums as it sees fit but not in excess of 10 percent of the estimated total cost of the work. To the extent that excesses over fixed unit costs or any excess over the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such excesses for his own account without contribution by the Government. The Government will not contribute to the cost of any work performed prior to the date of this contract. The Government may make payments for the account of the Operator directly to independent contractors and suppliers rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(a) Operator's records.—The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine all pertinent books, documents, papers, and records of the Operator.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing a detailed statement of units of work performed during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and the fixed unit costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 6. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after the Operator has rendered a sufficient final report (see Article 5), may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development. See Annex II

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer or as surety if the Operator is not the producer (for example, if the Operator either transfers or fails to retain his interest in the land), shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. See Annex II and Article 10.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling, assaying, or transportation performed or paid by the Operator or by anyone other than the buyer are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent, but excluding fabricating or manufacturing) applied to the crude ore or other production after it is extracted from the ground to put it into a commercially marketable form.

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

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this Article.

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

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

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 7. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon the Government shall be free of all obligation to pay on account of units of work not then performed, and the Operator shall be free of all further obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The Government may also avail itself of any other remedy the law may provide for breach of contract, including the right to rescind the contract and to demand repayment of all moneys contributed by the Government under the contract.

(c) The giving of any notice by the Government under the provisions of this Article 7 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and liens to secure the payment thereof, and such rights shall be fully preserved.

ARTICLE 8. *Notices to be given by the Government* may be delivered to the Operator or may be sent by registered mail addressed to the Operator at the mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 9. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 10. *Changes and added provisions.*—

(a) The attached Annex II is a part of the contract.

(b) In Article 6(b), wherever the words "date of the contract" appear they mean "date of the Prior Contract (September 21, 1953)."

(c) In Article 6(b)(2), the period "thirteen years" is substituted for the period "ten years."

Rutin
Hunger
Appd. Jul.
Chapman
Chamber
H Johnson

Executed in sextuplicate [redacted] this 19th day of September, 1956.

THE UNITED STATES OF AMERICA

Irving G. Irving

Irving G. Irving (Partner)

By C. O. Mitchendorf

Administrator, Defense Minerals Exploration Administration

By Robert H. Nelson

Robert H. Nelson (Partner)

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

.....

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE: 1956—O-383069

AMENDED
EXPLORATION PROJECT CONTRACT
IRVING G. IRVING AND ROBERT M. NELSON, PARTNERS
DOCKET NO. DMEA-2874

ANNEX I

The land referred to in Article 2 of the contract form consists of portions of two patented claims in Silver Bow County, Montana, as follows:

1. That part of the Plutus Lode Mining Claim, Survey No. 3018, located in sections 10 and 15, T. 3 N., R. 8 W., lying above a horizontal plane 600 feet below the collar of the Plutus shaft.

2. The Norwich Quartz Lode Mining Claim, Survey No. 2794, Lot No. 590, T. 3 N., R. 8 W., except that portion of the claim lying west of coordinate 5275E. and also above the Plutus 300 (No. 5) level (see attached Figure 1), and all existing dumps on said claim, which are excluded from the land referred to in Article 2.

- -

A one-quarter interest in the Plutus claim is owned by the Operator and the other three-quarters interest is held under a lease from Anaconda Copper Mining Company and the National Bank of Commerce of Seattle. This lease expires June 30, 1961.

The Norwich claim is owned in full by Irving and Nelson, partners.

(Article 2(a)) - The land is subject to a mortgage held by General Services Administration under its Contract GS-10P(D)-3. (Article 2(b)) - The Subordination Agreement of General Services Administration and Consents to Lien of the lessors of the Norwich and Plutus claims are waived.

AMENDED
EXPLORATION PROJECT CONTRACT
IRVING G. IRVING AND ROBERT N. NELSON, PARTNERS
DOCKET NO. DMEA-2874

ANNEX II

WITNESSETH, THAT:

The parties to this Amended Contract are also parties to Contract No. Idm-2604, Docket No. DMEA-2874, dated September 21, 1953, as amended seven times, hereinafter called the "Prior Contract."

The exploration work provided for under the Prior Contract was completed prior to December 31, 1955, and the parties desire to expand the exploration project, enlarge the area of land for the exploration project, and restate their entire agreement in this Amended Contract.

NOW, THEREFORE, it is mutually agreed that:

1. Effective as of September 21, 1953, the Prior Contract is amended and superseded by this Amended Contract, which shall govern all the rights and obligations of both parties, except that vouchers and claims for the Government's contribution to the work performed under the Prior Contract and payment therefor by the Government shall be as therein provided.

2. The Operator hereby releases and agrees to save harmless the Government from all claims and demands out of the Prior Contract, except as herein provided.

3. The General Services Administration or any other department or agency of the Government which receives ore from the property referred to in Article 2 of this Amended Contract, or which may be or become in any manner obligated to pay money to the Operator, is authorized and directed to deduct from any such money or accounts payable to the Operator, and pay to or for the account of Defense Minerals Exploration Administration, any sums that may be due to the Government on account of royalties under the Amended Exploration Contract to which this Annex is attached.

4. (a) The amount contributed by the Government under the Prior Contract is incorporated into this Amended Contract and is repayable pursuant to the royalty provisions of this Amended Contract.

(b) The Certification of Discovery or Development made under the Prior Contract is considered as having been made under this Amended Contract, and the Government's rights to royalty pursuant to Articles 6(b)(2) and 10 of the Amended Contract and its liens therefor are now, hereby, vested, the requirement for certification in Article 6(a) of the Amended Contract being hereby waived.

AMENDED
EXPLORATION PROJECT CONTRACT
DOCKET NO. DMRA-2874

EXHIBIT "A"

Description of the Work

General Provisions

The location, direction, inclination, and extent of all diamond drill holes are subject to the approval of the Government. The holes shall be not less than AX in size, and shall be reamed and cased or cemented and redrilled as necessary.

Drifts and crosscuts, driven or rehabilitated, shall be not less than 5 feet by 7 feet in cross section in the clear and shall be timbered and spiled as necessary.

In mineralized zones, sample drifts and crosscuts at 5-foot intervals and split diamond drill core. The samples and splits shall be assayed for manganese, and also for lead and zinc where warranted.

Two maps are attached to this Exhibit, as follows:

Figure 1, Plan of Plutus and Norwich claims, showing proposed rehabilitation, drifting, and crosscutting.

Figure 2, Longitudinal Section along Norwich vein.

The work completed under Prior Contract is designated as Stage I. The work to be performed is described below under Stages II and III. The Operator shall perform the work set forth under Stage II, and shall perform as much of the work set forth under Stage III as the Government approves in advance in writing.

Stage II

Install water line, electric cable, and pumping equipment to the 300 level of the Plutus shaft.

Rehabilitate the Plutus shaft from the 300- to the 410-foot level including pumping out of water and install equipment for operation.

Rehabilitate and enlarge the 400-level station to approximately 10 feet by 10 feet by 50 feet, by blasting and removing about 3,200 cubic feet of material, and timbering as necessary.

Rehabilitate the 240 feet of 400-level crosscut between the 400-level station and the Norwich vein. As rehabilitated, the crosscut shall contain installations of 20-pound rail, 3-inch air line, 2-inch water line and an adequate ventilation line.

Drift approximately 150 feet westerly along the Norwich vein and drift 400 feet easterly to the andesite dike along the Norwich vein.

Diamond drill a flat hole southerly from the 400 level, from a point approved by the Government, to intersect the downward extension of the Plutus vein. This hole shall be approximately 420 feet in length.

Stage III

Bulldose, with RD-7 or equivalent for not to exceed 15 hours, access roads and prepare drill sites for surface diamond drilling on the east side of the andesite dike encountered under Stage II. The diamond drill holes shall be not less than AX in size.

Hole No. 1 shall test the depth of the Tertiary flows, shall be vertical, and shall not exceed 500 feet in depth. If the underlying granites are found sufficiently close to the surface, then holes No. 2 and No. 3 shall be drilled.

Holes No. 2 and No. 3 shall dip to the north at about 60 degrees and shall not exceed 600 feet each in depth.

The total drilling for the three holes shall not exceed 1,700 feet.

The location, direction, inclination, and extent of all drilling are subject to approval by the Government.

If drilling finds indications of extensions of the Norwich or other veins to the east of the dike, then if approved in advance by the Government, the following work shall be carried out:

Extend the east drift on the Norwich vein on the 400-foot level through the dike approximately 150 feet. Then crosscut to the vein or veins indicated by drilling. On any vein or veins encountered drift easterly. The total crosscutting and drifting shall not exceed 650 feet for these three items.

Diamond drill a flat hole, from a point in the Norwich east drift approved by the Government, to intersect the downward extension of the Plutus vein.

Estimated Cost of the Project

Fixed Unit Costs

Stage I

Cost of work completed under Prior Contract (Stage I) as audited			$23,190.70

Stage II

Install facilities and pumping equipment in Plutus shaft to 300 level 1/	$2,082.00		
Rehabilitate Plutus shaft from 300 to 410 level, and install equipment 1/	3,148.00		
Estimated Total Installation and Rehabilitation, Plutus shaft		$5,230.00	
Rehabilitate and enlarge 400 station, 3,200 cubic feet of material @ $0.50/cu. ft. The unit price per cubic foot includes the cost of timbering.	$1,600.00		
Rehabilitate [illegible] feet of crosscut to Norwich vein @ $20.50/ft. The unit cost includes the cost of timbering.	4,920.00		
Estimated Total Rehabilitation and Enlargement of 400-level station and crosscut		6,520.00	
Drifting 550 feet @ $32.00/ft. The unit cost does not include the cost of timbering and spiling	$17,600.00		
Normal timbering, 550 feet @ $10/00/ft.	5,500.00		
Extra sets in heavy ground, 100 feet @ $8.00/ft.	800.00		
Spiling 50 feet @ $30.00/ft. 2/	1,500.00		
Estimated Total for drifting		$25,400.00	
Diamond drilling, 420 feet @ $5.00/ft.	2,100.00	2,100.00	
The unit cost includes cementing, re-drilling, reaming, and casing.			

Assaying 140 samples @ $3.50 each	$ 490.00	$ 490.00	
Estimated Total for Stage II			$39,740.00

Stage III

Bulldoze access roads and drill sites, 15 hours @ $14.00/hr.		$ 210.00	
The unit cost includes all costs of operation.			
Diamond drilling on surface, 1,700 feet @ $6.00/ft.	$10,200.00		
The unit cost does not include cementing, redrilling, reaming and casing.			
Cementing and redrilling, or reaming and casing, 300 feet @ $2.50/ft. for either	750.00		
Estimated Cost of Surface Drilling		$10,950.00	
Crosscutting and drifting, 650 feet @ $32.00/ft.	$20,800.00		
The unit cost does not include the cost of timbering and spiling.			
Normal timbering, 600 feet @ $10.00/ft.	6,000.00		
Extra sets in heavy ground, 100 feet @ $8.00/ft.	800.00		
Spiling 60 feet @ $30.00/ft.2/	1,800.00		
Estimated Total for Crosscutting and Drifting		$29,400.00	
Diamond drilling underground, 420 feet @ $5.00/ft.	2,100.00	2,100.00	
The unit cost includes cementing, redrilling, or reaming and casing.			
Assaying 120 samples @ $3.50 each	420.00	420.00	
Estimated Total for Stage XII			$43,080.00

SUMMARY

Cost of Stage I, as audited	$ 23,190.70	
Estimated Cost of Stage II	39,740.00	
Estimated Cost of Stage III	43,080.00	
Estimated Total Cost of Project		$106,010.70
Government Participation @ 75% (rounded)		$ 79,508.00

1/ The completed work constitutes the unit.
2/ Unit cost of spiling includes all costs of timbering and no unit costs of timbering are allowable in connection with spiling work.

Docket Copy

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EXPLORATION PROJECT CONTRACT
IRVING G. IRVING AND ROBERT H. NELSON, PARTNERS
DOCKET NO. DMEA 2074

AMENDMENT NO. 1

It is agreed this 29th day of September, 1955, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Irving G. Irving, and Robert H. Nelson, Partners, that Exploration Project Contract, Idn-Nch (Docket No. DMEA 2074), dated September 21, 1955, as amended, is further amended as follows:

1. In Article 3, the completion date of this contract is further extended from "September 21, 1955," to "December 31, 1955." FCJ DRM

2. The period for payment of the Government's royalty under the contract is extended from "10 years" to "11 years" from the date of the contract.

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or the agreed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C O Mutteirdorf
Administrator, Defense Minerals
Exploration Administration

Irving G. Irving and
Robert H. Nelson

By Irving G. Irving

By Robert H. Nelson

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AMENDMENT NO. 6

It is agreed this 25th day of May 1955 between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and

Irving G. Irving and Robert H. Nelson, Partners

(Docket No. DMEA 2874, manganese)

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract Idm-E 604 of September 21 1953 between the parties hereto be modified and amended as described in Exhibit "F" attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be April 1 1954.

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

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

Executed in sextuplicate the day and year first above written.

IRVING G. IRVING AND ROBERT H. NELSON
(Operator)

By Irving G. Irving
Partner

By Robert H. Nelson
Partner

THE UNITED STATES OF AMERICA

By A. E. Weissenborn
A. E. Weissenborn, Exec. Officer
DMEA Field Team, Region ~~DX~~ I,
Northwest District

Exploration Project Contract Idm-E604
Irving G. Irving & Robert H. Nelson, Partners
Docket No. DMEA 2874 (manganese)

AMENDMENT NO. 6

Exhibit "F"

In Amendment No. 2, Exhibit "F", delete Item 1 and substitute the following:

1. On the 244 level, drift westerly on the Plutus vein for not more than 225.6 feet.

Exploration Project Contract Idm-E604
Irving G. Irving & Robert H. Nelson, Partners
Docket No. DMEA 2874 (manganese)

Justification of Amendment No. 6

Operators had previously crosscut to the Plutus vein at their expense so that there is no crosscutting required. This amendment transfers the 15 feet of crosscut to 15 feet of additional drifting for a total of 225.6 feet from the starting point on the vein in a westerly direction. This change does not alter the over-all cost.

John D. Bardill

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AMENDMENT NO. 5

It is agreed this 12th day of May 1955, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and

Irving G. Irving and Robert H. Nelson, Partners

(Docket No. DMEA 2874, manganese)

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract Idm-E 604 of September 21 1953 between the parties hereto be modified and amended as described in Exhibit "F" attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be April 1 1954.

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

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

Executed in sextuplicate the day and year first above written.

IRVING G. IRVING AND ROBERT H. NELSON
(Operator)

By Irving G. Irving
Partner

By Robert H. Nelson
Partner

THE UNITED STATES OF AMERICA

By A. E. Weissenborn
A. E. Weissenborn, Exec. Officer
DMEA Field Team, Region ~~II~~ I,
Northwest District

Exploration Project Contract Idm-E604
Irving G. Irving & Robert H. Nelson, Partners
Docket No. DMEA 2874 (manganese)

AMENDMENT NO. 5

Exhibit "F"

In Amendment No. 2, add the following:

2. Drift 44.4 feet on the Plutus vein on the 200 level to the west.

Exploration Project Contract Idm-E604
Irving G. Irving & Robert H. Nelson, Partners
Docket No. DMEA 2874 (manganese)

Justification of Amendment No. 5

At the time Amendment No. 2 was made it was intended that the 44.4 feet of completed drift on the 200 level west should be included in the amendment. This amendment corrects the error.

John D. Bardill

Docket Copy

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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(Amendment to Change Starting and/or Completion Dates)

AMENDMENT NO. 4

It is agreed this 23d day of November 1954, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration and Irving G. Irving and Robert H. Nelson, Partners

each acting in consideration of the agreement to the other to the terms hereinafter set forth, that the Exploration Project Contract Idm-E604 dated September 21, 1953 between the parties hereto be modified and further amended to change ~~the starting date from~~ _____ ~~to~~ ~~within~~ _____ ~~of the date of the contract and~~ the completion period from 14 (No. of months) to 24 (No of months) from the date of the contract. The effective date of this amendment shall be September 21, 1953.

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

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

Executed in sextuplicate the day and year first above written

IRVING G. IRVING AND
ROBERT H. NELSON, PARTNERS
(Operator)

By Irving G. Irving, partner

By Robert H. Nelson, partner

THE UNITED STATES OF AMERICA

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

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Exploration Project Contract No. Idm-E604
Irving G. Irving and Robert H. Nelson, Partners
Docket No. DMEA-2874 (manganese)

Justification of Amendment No. 4

This amendment has been prepared to allow the Operator time to complete work authorized in the contract. Owing to the weak financial position of the Operator in past months, it has been necessary for him to concentrate most of his efforts in bringing the Norwich Footwall vein into full scale production. This has now been accomplished, and the Operator has given assurance that authorized work remaining in the contract will be performed in an assiduous manner.

J. J. Quinlan

Docket Copy

Author 8/27/54

(Amendment to Change Starting and/or Completion Dates)

AMENDMENT NO. 3

It is agreed this 2nd day of August 195 4, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration and ~~Irving C. Irving and Robert H. Nelson, Partners~~

each acting in consideration of the agreement to the other to the terms hereinafter set forth, that the Exploration Project Contract ~~DMA 2684~~ dated ~~September 21~~ 195 3 between the parties hereto be modified and amended to change the starting date from _____ (No. of days) to within _____ (No. of days) of the date of the contract and the completion period from _____ (No. of months) to _____ (No. of months) from the date of the contract. The effective date of this amendment shall be ~~September 21~~, 195 3.

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

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

Executed in sextuplicate the day and year first above written.

~~Irving C. Irving & Robert H. Nelson~~
(Operator)

By Irving C. Irving

THE UNITED STATES OF AMERICA

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

EXPLORATION PROJECT CONTRACT No. [illegible]
IRVING G. IRVING AND ROBERT H. [illegible], [illegible]
DOCKET No. DMEA 2874 (Manganese)

Justification of Amendment No. 3

This amendment has been prepared to allow the operator time to complete work authorized in the contract. Owing to the weak financial position of the operator in recent months, it has been necessary to employ the mine crew on production and preparation of stopes along the Norwich footwall vein in order to meet some of the more pressing obligations. The Norwich footwall vein is almost ready for full scale production. When it comes into full scale production, the operator should be in a position to finish the work outlined in the contract.

J. J. Quinlan

Docket Copy

AMENDMENT NO. 2 Docket DMEA-2874 (manganese)

It is agreed this 6th day of April 195 4, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and

Irving G. Irving and Robert H. Nelson, Partners

(Plutus mine, Silver Bow County, Montana)

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract Idm-E 604 of September 21 195 3 between the parties hereto be modified and amended as described in Exhibit "F" attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be April 1 195 4.

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

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

Executed in sextuplicate the day and year first above written.

IRVING G. IRVING AND ROBERT H. NELSON
(Operator)

By Irving G. Irving, Partner

By Robert H. Nelson, Partner

THE UNITED STATES OF AMERICA

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

Exploration Project Contract
Irving G. Irving & Robert H. Nelson, Partners
Docket No. DMEA-2874

Exhibit "F"

Amendment No. 2

In Amendment No. 1, Exhibit "A" under Description of the Work, delete Item 1 and substitute the following:

1. Crosscut in a southerly direction for not more than 15 feet to expose the entire vein from the present face of the west crosscut on the 244 level and then drift in a westerly direction on the vein, for not more than 210.6 feet, as illustrated in Fig. 3 attached to this amendment and made a part hereof.

Docket No. 2874
Irving and Nelson
Plutus Mine
Contract Idm-2604

Justification for Amendment No. 2

The operators requested on April 3, 1954, an amendment to allow the balance of 225.6 feet of drifting in a westerly direction on the 200 level, to be transferred to explore the Plutus vein from the face of the west crosscut on the 204 level by crosscutting 15 feet to the south to explore the width of the vein zone and by drifting 210.6 feet in a westerly direction to explore the Plutus vein.

The change of the drifting program to a lower level is justified because low-grade oxidized manganese was encountered about 15 feet above the back of the west 200 level drift.

Howard B. Nicholsen

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Defense Minerals Administration
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EXPLORATION PROJECT CONTRACT
IRVING G. IRVING AND ROBERT H. NELSON, PARTNERS
DOCKET NO. DMEA-2874

AMENDMENT NO. 1

It is agreed this 6th day of January, 1954, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Irving G. Irving and Robert H. Nelson, that Contract Idm-8604, Docket No. DMEA-2874, dated September 21, 1953, is amended effective September 21, 1953, as follows:

Exhibit "A" is deleted and a new Exhibit "A" is substituted, reading as follows:

EXHIBIT "A"

Description of the Work

The project work, which is outlined in part on attached map, Fig. 2, entitled "Vertical Longitudinal Section A-A', Plutus Mine, Silver Bow Co., Montana," consists of the following:

1. Drift westerly approximately 270 feet along the Plutus vein from a face 21 feet west of USBM tag No. 255 on the 200-foot level of the Plutus shaft, as indicated on Fig. 2.

2. Drift easterly 16.4 feet along the Plutus vein from a face 3 feet east of USBM tag No. 256, as indicated on Fig. 2.

3. Unwater and rehabilitate the Plutus shaft to a new level not less than 25 feet nor more than 56 feet below the present 244-foot level. Rehabilitation includes all necessary retimbering, rearrangement of dividers, and installation of skip guides.

4. At the new level, cut and timber a station-crosscut from the Plutus shaft southeasterly to the Plutus vein. The station-crosscut shall be approximately 15 feet long. Approximately the first 10 feet shall be approximately 11 feet wide

and 9 feet high. The remaining footage shall be approximately 7 feet wide and 9 feet high. The total excavation for the station-crosscut shall approximate 1,300 cubic feet.

5. On the new level, drive easterly on the Plutus vein not more than 183.6 feet from the face of the station-crosscut.

6. Dependent upon the results of the above drifting, the Operator, with the prior written approval of the Government, may perform not to exceed 80 feet of raising.

7. The Operator, from the time work is started on the new level, shall keep that level pumped dry until all work on that level is completed. Should it become necessary for the Operator to replace the pump presently operating, with equipment of greater pumping capacity, a pump capable of pumping 200 gallons per minute against a 400-foot hydraulic head shall be installed.

8. Where warranted, not in excess of 249 samples shall be taken at 5-foot intervals and assayed for silver and manganese.

All drifts and raises shall be timbered as necessary. The location, direction, and extent of all work is subject to the approval of the Government.

Agreed Unit Costs 1/

Drifting 470 feet @ $34.00/ft.	$15,980.00
Timbering 470 feet of drifts @ $5.00/ft.	2,350.00
Raising 80 feet @ $35.00/ft.	2,800.00
Unwatering and rehabilitating shaft, 56 feet @ $35.00/ft.	1,960.00
Cutting and timbering station-crosscut, approximately 1,300 cu. ft. @ $1.24/cu.ft.	1,612.00

1/ The unit costs include all costs whatsoever incidental to the completion of the work.

Pumping 150 days @ $4.20/da. 2/	$630.00
Assaying 249 samples @ $2.00/ea.	498.00
Estimated Total Agreed Unit Costs	$25,830.00
Government Participation @ 75%	$19,372.50

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

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O. Mitteendorf
Administrator, Defense Minerals Exploration Administration

Irving G. Irving (Partner)

Robert H. Nelson (Partner)

2/ This cost is allowable only in the event that the Operator replaces the presently operating pump with a pump of greater capacity, as described in item 7 above.

MF-200 (A)
(February 1952)

DOCKET NO. DMEA - 2674

COMMODITY Manganese

Docket Copy

Idm-E-604

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

EXPLORATION PROJECT CONTRACT[1]

(Short Form)

IT IS AGREED this 21st day of September, 1953, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Irving G. Irving, 64 Hirbour Building, Butte, Montana, and Robert H. Nelson, 512 Clark Street, Helena, Montana - Partners

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

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

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Montana, County of Silver Bow, described as follows:[3] Plutus Lode Mining Claim, Survey No. 3018, patented, located in Sections 10 and 15, T. 3 N., R. 8 W., above a horizontal plane 600 feet vertically below the collar of the Plutus shaft,

the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession as to a 1/4 interest and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:

Mortgage to General Services Administration under its Contract GS-10P(D)-3.

(*b*) That the Operator is a lessee, in possession and entitled to possession as to a 3/4 interest and the Owner's Consent to Lien is attached 6/

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for[5] Manganese

in or upon the described land; and shall bring the project to completion within a period of 8 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 75 percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $19,372.50, which is 75 percent of $25,830.00 the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

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

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

16—66329-1

6/ See Guaranty attached.

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

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

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

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

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

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

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

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

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

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

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

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* **In Article 7, delete that part of the second sentence which follows the semicolon.**

October 1, 1953

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

Irving G. Irvin (Partner)

By Robert H. Nelson (Partner)

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

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

[CORPORATE SEAL]

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

EXPLORATION PROJECT CONTRACT
IRVING G. IRVING and ROBERT H. N[illegible]SON, PARTNERS
DOCKET NO. DMER-2[illegible]4

ANNEX I

The following provisions are in lieu of all of paragraph (a) of Article 6 which precedes the colon:

If the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after a sufficient, complete, final report and final account referred to in the contract has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development, The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2, as follows: (1) Regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

EXPLORATION PROJECT CONTRACT
IRVING G. IRVING AND ROBERT H. NELSON, PARTNERS
DOCKET NO. DMEA-2874

ANNEX II

The Operator is a party to a contract with the Government, acting through Defense Materials Procurement Agency, Contract No. GS-10P(D)-3, under the provisions of which the Government has made certain advances to the Operator to finance certain mining and production operations on the Plutus claim, which is the subject of this Exploration Project Contract, and also on the adjoining Norwich claim, which is excluded from this Exploration Project Contract.

The work provided for in this Exploration Project Contract depends upon and could be performed only by virtue of certain of the mining operations which are being financed by the Government under said Defense Materials Procurement Agency contract, but the exploration work is not directly beneficial or in any way necessary to said mining and production operations.

Inasmuch as the authority of Defense Minerals Exploration Administration is limited to contribution to the cost of exploration and related development, this statement is made in explanation of why the Exploration Project Contract is limited to the Plutus claim and does not include the Norwich claim; i.e., any liability for royalty on production to reimburse the Government for its contribution to the exploration work under this Exploration Project Contract will be limited to production from the Plutus claim.

The Defense Materials Procurement Agency, the General Services Administration, or any other department or agency of the Government which may receive ore from the property described in Article 2 of the contract form, or which may be or become in any manner obligated to pay money to the Operator, is authorized and directed to deduct from any such money or accounts payable to the Operator, and pay to or for the account of Defense Minerals Exploration Administration, any sums that may be due to the Government on account of royalties under the exploration contract to which this annex is attached.

EXPLORATION PROJECT CONTRACT
IRVING G. IRVING and ROBERT H. NELSON, PARTNERS
DOCKET NO. DMEA-2874

GUARANTY

In consideration of the waiver by the United States of America of the requirement of the Owner's Consent to Lien, as set forth in paragraph 2(b) of the attached Exploration Project Contract, the undersigned jointly and severally hereby guarantee payment to the United States of America of any royalties, as specified in said Contract and any future amendment thereof, upon any and all ore which is mined within ten years of the date of said Contract from the land described in Article 2 thereof, regardless of whether the undersigned have any interest in the property covered by the said Contract, or any part in the mining operations at the time said ore is mined. If for any reason the net smelter returns or other net amounts, from operations that would be subject, under the said Contract and any amendment thereof, to such payments to the United States of America, are not available as a means of measuring the amount of such payment, then the undersigned agree and undertake jointly and severally to make such payment according to the best estimates of the amount that can reasonably be made, and in the event of dispute as to such estimate, the undersigned agree jointly and severally that the determination thereof by either the Administrator of Defense Minerals Exploration Administration, or his designee, shall be final and binding upon the undersigned.

Dated October 1, 1953

Irving G. Irving (Seal)
Irving G. Irving

Robert H. Nelson (Seal)
Robert H. Nelson

EXPLORATION PROJECT CONTRACT
IRVING G. IRVING and ROBERT H. NELSON, PARTNERS
DOCKET NO. DMEA-2874

EXHIBIT "A"

Description of the Work

The project consists of drifting westerly approximately 270 feet and easterly approximately 200 feet along the Plutus vein from the present faces on the 200 foot level of the Plutus shaft, as indicated on attached map entitled "Longitudinal Section of the Plutus Vein."

Dependent on the results of the above drifting, 200 feet of raising is specified at locations to be selected by the Operator with the approval of the Field Team.

Where warranted, not in excess of 250 samples shall be taken at 5-foot intervals and assayed for silver and manganese.

Agreed Unit Costs 1/

Drifting 470 feet @ $34.00/ft.	$15,980.00	
Timbering 470 feet @ $5.00/ft.	2,350.00	
Raising 200 feet @ $35.00/ft.	7,000.00	
Assaying for silver and manganese - 250 samples @ $2.00/ea.	500.00	
Total Agreed Unit Costs		$25,830.00
Government Participation @ 75%		$19,372.50

1/ The above unit costs shall cover all costs whatsoever incidental to the completion of the work.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
SEP - 3 1956

August 29, 1956

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

Re: Docket No. DMEA-2874 (Manganese)
Irving & Nelson
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-E604

Dear Mr. Selfridge:

Enclosed are two copies of a signed and properly certified agreement of lease and option between Irving and Nelson, et al. and Umont Mining, Inc., together with three exhibits. An unsigned, uncertified copy of this agreement, without any exhibits, was forwarded to you for your information on August 20, 1956.

Sincerely yours,

DRMacLaren
D. R. MacLaren
for: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW District

Enclosures

cc: USBM (2) w/cpy of encls.
USBM (AD)
Sample

NORWICH MINE

BUTTE, MONTANA

RECEIVED

SEP - 8 1956

August 27, 1956

Mr. A. T. Weissenborn, Exec. Officer,
Defense Minerals Exploration Administration,
S. 157 Howard Street,
Spokane 4, Washington.

Subject: Contract No. DMEA-267A (manganese)
Plutus Mine
Silver Bow County, Montana
Contract No. DMA-[illegible]

Dear Mr. Weissenborn:

As suggested by Mr. Nelson in a telephone conversation we had today, I am sending you a reproducible copy, with signatures, of our agreement with Uncle Sam, Inc. This is our office copy, and I understand that it will not leave Spokane, but will be reproduced there and copies will then be sent to Washington.

I told Mr. Nelson that we had three exhibits that went with the document and we wondered if it were necessary to send them along also. To make sure of no further delay, I am enclosing reproducible copies of these exhibits also.

Please return these documents--all four of them--to us promptly as soon as they have served their purpose.

Very truly yours,

I. G. Irving

Copy

Please return to
I. G. Irving
[illegible]
Butte, Mont.

RECEIVED
SEP - 3 1956

AGREEMENT OF LEASE AND OPTION

THIS AGREEMENT, made this 15 day of April, 1956, between IRVING G. IRVING, of Butte, Montana, and ROBERT M. NELSON, of Helena, Montana, co-partners, and KATHRYN T. IRVING and MARGARET L. NELSON, wives of said co-partners, hereinafter called "Irving and Nelson", and UNONT MINING INC., a Vermont corporation, having its principal place of business at King Street Dock, Burlington, Vermont, hereinafter called "Unont";

W I T N E S S E T H :

Recitals:

Irving and Nelson own or hold under lease and option, certain mining claims and properties in Silver Bow County, Montana, hereinafter particularly described, their rights being subject to certain government liens, also described.

A portion of such property is subject also to a split-check lease made and entered into under date of March 10, 1952, between Irving G. Irving as Sublessor and Alvy Chapman, Robert E. Lambert, Richard A. F. Hummel, and George Hubbard, as Sublessees, which sublease was extended and modified by agreement entered into under date of May 16, 1955, between the same parties, and further modified by agreement made and entered into between Irving and Nelson and the above-named Sublessees, under date of March 31, 1956. Copy of the amendment dated March 31, 1956, is hereto attached and marked Exhibit A.

Irving and Nelson believe they can acquire at reasonable cost, all or fractional interests in other lode mining claims lying contiguous or in close proximity to those presently owned or in which they have interests as aforesaid, and

Irving and Nelson are desirous of entering into agreement with Unent contemplating participation by Unent with them in the accelerated exploration, development and exploitation of the properties presently held and all subsequently acquired by them during the continuation of this agreement within a twelve (12) mile radius of the Plutus shaft located on the Plutus lode mining claim, Survey No. 3016, in the Butte District in Silver Bow County, Montana, such agreement to give to Unent management rights of all such properties as Lessee thereof, subject only to the sublease hereinabove referred to, and such agreement to provide for options to purchase Irving and Nelson's interests in all such properties, and

Unent is willing to enter into such an agreement upon the terms and conditions hereinafter set forth.

NOW THEREFORE, in consideration of the mutual covenants and agreements herein contained, and of the advance of Ten Thousand ($10,000.00) Dollars heretofore made by Unent to Irving and Nelson, IT IS AGREED as follows:

1. <u>Representation as to Present Titles</u>.

Irving and Nelson represent:

(a) That they hold under lease and option to purchase the Norwich patented lode mining claim, Survey No. 2724, which lease and option is in good standing, $30,064.38 having been paid on the option price on which there remains a balance owing of $19,935.62, which is payable on or before ninety (90) days from the date of a notice to exercise said option, which notice must be given before June 30, 1956.

(b) That they own a 25% interest in the Plutus patented lode mining claim, Survey No. 3016.

(c) That they own 73.33% of the Little Sarah patented lode mining claim, Survey No. 8095.

(d) That they own a 5/36 interest in the Angle Norman patented lode mining claim, Survey No. 2671.

(e) That the rights and interests so owned or held are subject to no liens or adverse claims whatsoever excepting the sublease hereinabove referred to and the lien of the United States Government on account of a G.S.A. Loan upon which there is owing an approximate balance of $ 47,000.00, and a D.M.E.A. Loan on the Plutus Claim on which a balance now remains owing of approximately $ 16,370.00, and in the event of approval of a D.M.E.A. Loan on the Norwich and Plutus Claims, application for which is now pending, will then be subject to the lien of such loan.

(f) That the said sublease as appears by agreement modifying the same, dated March 31, 1956, has been so modified as to restrict the sublessees' mining rights to what is therein designated as Lease Ore defined as follows:

Lease Ore

> All ore in the Norwich Vein, or within one-hundred (100) feet of its wall, above the 244 (No. 3) level east of the east end line of the Mapleton Patented Lode Claim (Survey No. 995) and west of coordinate 5600 E.; in addition, all ore in the Norwich Vein or within one-hundred (100) feet of its walls, above the 300 (No. 5) level east of the east end line of the Mapleton Patented Lode Claim (Survey No.995) and west of coordinate 5240 E. (See Exhibit B)

and to reserve to them the right to receive 4% royalty computed on the gross income derived from the sale of Class A ore defined as follows:

Class A Ore

All ore in the Norwich vein or within one-hundred (100) feet of its walls below the lease ore and above the 400' level (No. 6 level) and east of the Mapleton east end line and west of coordinate 5600 E. (See Exhibit B)

In the event there shall be any flaw or defect in the merchantability of the title to such property as Irving or Nelson represent they own, or, if there be any lien or encumbrance upon

such property not specified herein, then Irving and Nelson shall proceed promptly to remedy such defect and remove any such lien, and shall have a year after written notice of such defect or lien is given them by Umont in which to cure the same at Irving and Nelson's expense; in the event such defect shall not be cured or said lien so removed Umont shall have the right to take such action as may be necessary to cure such defect or remove such lien and shall withhold the cost thereof from any amounts due Irving and Nelson hereunder, in addition to such other rights, legal or equitable, as Umont may be entitled under this agreement.

7. Mining Rights of Umont:

(a) Irving and Nelson hereby lease to Umont, for the term and upon the terms and conditions hereinafter set forth, the following:

> An undivided 25% interest in the Pluto Lode Mining Claim, Survey No. 3018;
>
> An undivided 73.33% of the Little Sarah Lode Mining Claim, Survey No. 3095;
>
> An undivided 5/36 interest in the Jungle Queen Lode Mining Claim, Survey No. 2671.

(b) Irving and Nelson hereby assign to Umont the following:

> A lease upon the Norwich Lode Mining Claim, Survey No. 2724 as amended and extended to June 30, 1956; specifically excluding, however, the option to purchase said Norwich Lode as more particularly set forth hereinafter,
>
> A lease on an undivided 75% of the Pluto Lode Mining Claim, Survey No. 3018, which said lease is dated July 22, 1952, extended Sept. 3, 1953, and expires June 30, 1959.
>
> Umont agrees to undertake and perform all of the duties and obligations of said leases and to perform the terms thereof in addition to the terms and conditions hereinafter set forth.

(c) It is understood that the option to purchase the Norwich Lode Mining Claim is not hereby assigned to Umont, but that upon said option now held by Irving and Nelson being fully performed, title to said Norwich claim shall be vested in Irving and Nelson and shall simultaneously be leased to Umont, without further action by either party hereto, under the terms and conditions of this agreement and subject to the options to Umont hereinafter set forth.

(d) Any mining claims in which Irving and Nelson or Umont acquire any title, during the term of this agreement, including the Option B payment period within said twelve mile radius of said Plutus Shaft, whether said title be the whole title or a fractional interest, shall automatically be included in this agreement, but shall be mined and operated under the terms hereof only if such mining, according to good mining practice fits into the development contemplated through the Plutus shaft, as hereinafter more specifically set forth, or if, in the judgment of Umont a separate operation of said property is then practical. In the event of such mining, the profits shall be determined and divided as hereinafter set forth.

(e) Any lease, or lease and option, acquired by Irving and Nelson, during the term hereof, and covering a mining claim or claims or fractional interests therein, located within a twelve-mile radius of the Plutus shaft shall be automatically included in the terms of this agreement upon Umont giving to Irving and Nelson written notice of election that any such lease or lease and option be so included, in which case Umont shall be obliged to assume the duties and responsibilities provided in said lease or lease and option.

(f) It being recognized that a portion of said Norwich Lode Mining Claim is subject to a sublease to Alvy Chapman and others as hereinabove set forth, Irving and Nelson do hereby assign to Umont a portion of the royalties reserved to Irving and

[illegible] said [illegible], [illegible] portion of royalties [illegible] defined in paragraph [illegible]

[illegible]

[illegible]

[illegible] shall continue in full force and [illegible]

[illegible]

[illegible] possession and management of said properties [illegible] terms and conditions herein provided.

[illegible]

[illegible] shall cooperate with the Sublessees in facilitating exploitation of the lease area and for such purpose shall [illegible] the labor of [illegible], power [illegible] charges, the Lessee shall [illegible] for any claims, demands or [illegible] at any time between Irving and [illegible] and the Sublessees or their employees.

[illegible]

[illegible] acknowledged [illegible], pursuant [illegible] has advanced to Irving, and [illegible] acquisition of property [illegible]

[illegible] agreed, shall be repaid only in [illegible]

[illegible] Lessee agrees to make the following further payments to Irving and Nelson:

[illegible] under said sublease, which portion of royalties [illegible] specifically described and defined in paragraph [illegible] [illegible].

7. [illegible]:

[illegible] lease and agreement shall be effective [illegible] and shall continue in full force and effect [illegible] [illegible] 1959, unless sooner terminated [illegible] [illegible] [illegible] the [illegible] provided [illegible] [illegible] and beginning on the date [illegible] shall [illegible] possession and management of said properties according to the terms and conditions herein provided.

8. [illegible] BETWEEN [illegible] AND SUBLESSEES:

[illegible] shall cooperate with the sublessees to facilitate the exploitation of the Lease Ore and for such purpose shall agree to a reasonable pro-ration of the labor of [illegible], power and [illegible] [illegible], hauling and toll charges, but [illegible] shall in no way be responsible for any claims, demands or causes of action [illegible] which may exist at any time between Irving and Nelson as [illegible] and the sublessees or their employees.

9. [illegible] ADVANCED OR TO BE ADVANCED BY [illegible]:

(a) It is acknowledged that [illegible], pursuant to agreement [illegible] [illegible] 1956, has advanced to Irving and [illegible] the sum of [illegible] dollars for the acquisition of property as that agreement recites. Copy of such agreement [illegible] [illegible] except as [illegible] by [illegible] [illegible] advanced as in sub-paragraph (b) hereinbelow agreed, shall be repaid only in the manner [illegible] after provided.

(b) [illegible] agrees to make the following further payments to Irving and Nelson:

[illegible]

(ii) In the first month following the [illegible] said agreement to pay five thousand [illegible] additional on said indebtedness of [illegible]

(iii) In the second month following the [illegible] said agreement to pay the balance of the said indebtedness of Irving and Nelson, [illegible].

(iv) To pay into an escrow account in the [illegible] bank and trust company at Kalamazoo, [illegible], the balance of the purchase price of the [illegible] pursuant to an escrow agreement [illegible] signed by Irving and Nelson and by the [illegible] lessee and option on said service station, which said agreement shall provide in substance that said [illegible] said balance in escrow shall constitute the [illegible] of purchase price due from Irving and Nelson [illegible] said claim, but shall not be delivered by said [illegible] holder to said lessors until they shall have [illegible] said escrow holder an abstract of title [illegible] showing a merchantable title to said [illegible] and a grant deed properly executed and [illegible] vesting a merchantable title to said [illegible] Irving and Nelson, and said escrow agreement [illegible] providing for payment by said lessors of the [illegible] stamps, abstract fees and other charges customarily payable by the sellers under such an option, and [illegible] that payment of said balance of purchase price [illegible] the escrow account shall permit the possession and [illegible] of said service station by Irving and Nelson [illegible] assume after June 30, 1950.

[illegible]

[illegible]

and judgment as to time and place and choice of [illegible] and manner of operation.

7. Repayment of Funds Advanced by Lessee:

The moneys advanced and to be advanced by Lessee, as provided in paragraph "5." hereof, shall be repaid to Lessee out of proceeds of said operation in the following manner:

(a) In regard to crude manganese ore:

Twelve and one-half (12½) per cent of the gross value of ore shipped, as determined on the basis of Defense Acceptance Invoices, or upon receipt of payment from Defense Services Administration, be divided as follows:

Ten (10%) per cent of such gross value shall promptly be paid to Lessee or applied in reduction of advances as hereinbefore described, and two and one-half (2½) per cent of such gross value shall promptly be paid to Lessee and Lessor for their own accounts. In the event that Defense Services Administration shall be replaced by some other governmental agency, such distribution shall be made of moneys received therefrom.

(b) In regard to other ores shipped:

Twelve and one-half (12½) per cent of the gross Defense receipts or net mill returns, net flash returns, net clark returns or net smelter returns shall, upon receipt of such funds be divided, apportioned and paid in accordance with the procedure above provided.

By net mill returns, net mill returns, net flash returns, net smelter returns is meant the amount received for other ores or concentrates shipped and remaining after deducting all [illegible] ing, smelter, treatment, trucking, freight and sampling charges thereon.

8. Determination of Costs, Division of Profits:

(a) When the funds advanced by Lessee have been repaid in the manner provided in Section "7." above, on Lease Ore, Class A ore, and other ore shipped and sold (except ores referred to in paragraph "16." below) thereafter twelve (12%) per cent of the gross value of the ore shipped, as determined on the basis of C.S.A. Acceptance Invoices (or other governmental agency, or otherwise as provided in Section "7." above) shall be divided

[illegible]

[illegible] (5%) per cent of such gross value shall [illegible] to account for the [illegible] account, and seven (7%) per cent [illegible] gross value shall be paid to Irving and Nelson [illegible] [illegible], and

"[illegible] Until option [illegible], hereinafter granted, is [illegible], the remainder net profits resulting from this [illegible] [illegible] and [illegible] agreement shall be [illegible] [illegible] Irving and Nelson as follows:

[illegible]

Twenty-five (25%) per cent of the royalties accruing to Irving and Nelson from shipments of Lease Ore as defined in paragraph "6.(f)" hereof shall be paid to Uvont, such royalties to be determined and settled for monthly as follows:

> From the gross payment made on each shipment of "Lease Ore" as shown on the C.S.A. Acceptance Invoice, there shall be deducted the following amounts:
>
> (i) the hauling charge;
>
> (ii) 12½% of the remainder, and
>
> (iii) a toll charge of 10¢ per short ton [illegible] payable to the owners of the Flutter [illegible]

One-half (1/2) of the balance remaining is the amount payable to the Lessees. After deducting the Lessees' share from the gross payment made on each shipment, the remainder is subject to the following charges:

> (i) Until repayment of the advances made and to be made by Uvont as provided in paragraph "7." above, 10% of the gross amount [illegible] on each C.S.A. Acceptance Invoice shall be payable to Uvont to provide the [illegible] mentioned in paragraph "7.(a)" and after repayment of such advances 5% of the gross amount so shown shall be payable [illegible] as provided in paragraph "7.(a)".

[illegible] reference made [illegible]

[illegible] of the reader, the following [illegible] shall [illegible]:

(i) [illegible]

(ii) [illegible]

(iii) [illegible] shall be [illegible]:

(iv) [illegible]

[illegible] (a), [illegible] shall be payable to [illegible], [illegible] the remaining three-fourths (3/4) [illegible] shall be paid by [illegible].

[illegible] "(iii) (B)" and "(iii, (c)" [illegible]

[illegible]

[illegible]

to in paragraph "16." below) the profits determined as herein a ver provided shall be evenly divided between Irving and Nelson on the one hand and Umont on the other.

Such profits shall be determined in the following manner:

From the gross value of the ores shipped as determined by General Services Administration Acceptance Invoices or final settlements on account of shipments to mint, mill, smelter or other purchaser, there shall be deducted the following:

(aa) Repayment of General Services Administration loan and interest as per the loan agreement;

(bb) Repayment of D.M.E.A. loan (if approved) or royalty as in such loan agreement provided;

(cc) Payment of percentages of gross receipts to Umont and to Irving and Nelson as provided in paragraphs "7." and "8.(a)";

(dd) Payment of royalties on Class A Ore to Salisbury or royalties to owners of any leased claims.

(ee) Exploration costs not to exceed $1.00 per long dry ton of ores shipped and in an aggregate amount not to exceed Fifty Thousand ($50,000.00) Dollars during the life of this agreement.

(ff) Development costs not to exceed $152,765.00 by more than ten (10%) per cent during the life of this agreement and restricted to 1,000 feet of drifting on the 400 level and 400 feet of drifting on the 300 level, 200 feet of crosscutting on the 400 level, 1,000 feet of raising, 100 feet of shaft repair and 240 feet of crosscut repair on the 400 level; provided, however, said total expenditures for development can be exceeded indefinitely as long as development in excess of said

total amount pays for itself out of ore produced thereby, or is mutually agreed upon in writing by Irving and Nelson and Umont;

(gg) Stoping costs including all supplies, labor bonus costs, power, stope fill and miscellaneous mine costs such as repairs, ore tramming and insurance;

(hh) All state and local taxes chargeable or assessable against the properties covered by this agreement or the proceeds therefrom arising during the operation hereunder, including all production taxes and net proceeds of mines taxes, but excluding state and federal franchise and income taxes;

(ii) Overhead cost of $1,000.00 a month to Umont for engineering, accounting, technical assistance and a pro rata share of its Salt Lake office expenses; and

(jj) Local management cost to Umont of $1,950.00 monthly, which includes $1,250.00 for services of Irving and Nelson, hereinafter described, and $700.00 for management fees of Umont's local representative.

(kk) Local accounting, legal, rent, secretarial and other office expenses.

The balance remaining shall constitute the profit to be divided equally between Irving and Nelson on the one hand and Umont on the other. Calculations of such profit shall be made on a quarterly basis as of March 31, June 30, September 30 and December 31 of each year during the continuation of this agreement and disbursements of profits will be made within thirty (30) days after the closing of each quarter. Payments required under Paragraphs 7 and 8 (a) shall nevertheless be paid monthly.

9. Indemnity Against Claims and Liens

Irving and Nelson shall hold Umont harmless and fully indemnify it against all claims and demands of any kind or nature which may be made upon it or against the leased premises for or on account of any debt or expense contracted or incurred by them as a co-partnership, and Umont shall hold Irving and Nelson harmless and fully indemnify them against all claims and demands of any kind or nature which may be made against them or against the leased premises for or on account of any debt or expense contracted or incurred by Umont in the conduct of its operations under this agreement.

10. Employment of Irving G. Irving and Robert H. Nelson

Until such time as Umont shall have been repaid for the advances specified in paragraph No. 5 in the manner provided in paragraph No. 7 above, both Irving and Nelson shall be retained on Umont's payroll from the date of signing this agreement, each receiving a monthly salary of $625.00, payable bi-monthly, and each shall perform duties hereinafter described. In the event of the death or disability of one, the other shall continue in employment. If the premises are shut down by Umont for any reason except termination of the agreement, or for the reasons set forth in Section 13 Irving and Nelson shall be available one-half of each month to Umont on a consulting basis for said $625 per month each, plus any traveling expenses.

Robert H. Nelson agrees to perform the following services:

Nelson will be geologist-engineer-sampler and adviser in that capacity to Umont's resident mine manager. His duties will consist of keeping the level geologic maps up to date according to Anaconda standards, keep his geologic work sheets on file, sample true vein width of each drift and raise round, see that samples are accurately assayed, and keep sample assays plotted up to date on both geologic plans and sections. In addition, construct geologic cross sections on 200 feet intervals and keep a transparent mine

level and surface map models on a scale of 1" equals 40 feet. [illegible] will submit monthly exploration and development reports to Irving and Nelson, Umont, G.S.A. and D.M.E.A. with a copy to Umont's resident manager in Butte, Umont's Salt Lake office and Umont's Burlington office.

Irving G. Irving agrees to perform the following services:

Irving will be Umont's office manager in charge of making out payrolls to Umont's employees in Butte, paying bills after they are approved by Umont's resident manager, making necessary financial reports to designated company officials and accountants and government agencies. Withholding taxes, social security and industrial accident insurance payments will be Irving's responsibility. Also, Irving will calculate distribution of profits, royalties and refund of loans to Irving and Nelson, Umont and Lessees, subject to approval of Umont's accountants before payment.

10(a) After the repayment of advances made by Umont as provided in paragraph 6 above, the further employment of Irving G. Irving and Robert H. Nelson shall be subject to mutual agreement of the parties. During the period of time between the repayment of the advances made by Umont and the exercise by Umont of Option B, if the income to Irving and Nelson from the operation, excluding any trucking income to Irving, derived from royalty payments and division of profits does not amount to $15,000.00 annually, then and in that event Umont will make up the difference between the amounts so received by them and $15,000.00 as a minimum royalty.

11. Distribution of Receipts:

General Services Administration payments for ore, D.M.E.A. payments reimbursing exploration costs and other payments for products, toll services or the like, which may or will be made to

Irving and Nelson, except those for lease ore, shall immediately be paid over to Umont for distribution according to the terms of this agreement.

12. Governmental Agency

Wherever in this Agreement General Services Administration is referred to, it shall be taken to include any other governmental agency which may succeed to the functions of such administration.

13. Force Majeure

Prevention or delay in the performance hereof caused by act of nature, strikes or other labor disturbances, fire, flood, traffic interruption, delay in transportation, shortage of power, inability to procure labor, supplies or material, insurrection or civil violence, requirement or regulation of government, or by reason of national financial crises or market conditions, operations in the premises cannot be maintained without serious financial loss or serious hardship, or any other reason or disabling cause beyond the reasonable control of Umont, shall entitle Umont to suspend its operations hereunder until the cause of disability shall have been removed or have become inoperative. In the event the disability continues for longer than six months and is a disability which affects Umont but which would not prevent Irving and Nelson or some firm or corporation other than Umont from operating said properties, then and in that event Irving and Nelson shall have the right to declare this agreement as terminated even though the disability is beyond the control of Umont.

14. Termination

Umont may at any time terminate this agreement by giving Irving and Nelson at least thirty (30) days written notice of its intention to do so, and by executing, acknowledging and delivering to Irving and Nelson a proper release surrendering the premises covered hereby whereupon this lease agreement shall be terminated.

In the event Umont elects to terminate this agreement before exercising Option A and before the full amount advanced by it

[illegible] paragraph 5 hereof has been repaid to [illegible], then [illegible] shall agree to pay any such balance solely by paying over [illegible] of the gross G.S.A. receipts or 10% of the net mill, smelter, [illegible] smelter returns on ore shipped ~~from~~ from the properties covered by this agreement after such termination or from funds derived from the sale of such properties in the event Irving and Nelson elect to sell some or all of it, but in the event Umont exercises Option A before such termination, Irving and Nelson shall not be obliged to make [illegible] payment.

Upon termination of this agreement in any manner, the following disposition shall be made of all machinery and equipment placed on the property at Umont's expense:

Irving and Nelson if operating, or proposing to operate the property, shall have the right to purchase all such machinery and equipment at ~~the~~ a price fairly reflecting its value in place, determined by standard accounting procedures taking account of cost of construction, depreciation and obsolescence. Irving and Nelson shall give Umont written notice of election to operate such property within thirty (30) days from the termination of this agreement. If at such time Irving and Nelson are not operating or do not propose to continue operation of the property, Irving and Nelson shall have the first right to purchase all such machinery and equipment in place at a price equal to the best bona fide offer received by Umont from any third person. Notice of such purchase offer shall be given Irving and Nelson in writing and Irving and Nelson shall have thirty (30) days thereafter in which to meet such offer. No rental ~~xxxx~~ shall be chargeable to Umont by reason of retaining the machinery and equipment on the premises, and if Irving and Nelson do not elect to meet any bona fide offer within 30 days after notice thereof, then Umont shall have ninety (90) days thereafter in which to remove said machinery and equipment. In case Irving and Nelson elect to operate said property, payment for such machinery and equipment shall be made by paying over to Umont 10% of the gross G.S.A. receipts or 10% of the

net mine, net mill, net plant or net smelter receipts [illegible] property covered by this agreement or by sale thereof [illegible] applied with respect to any indebtedness remaining owing on account of moneys advanced by Dmont, and in the event Irving and [illegible] elect to operate, and the property is to be sold, such payment shall be in cash ~~with~~ within said thirty (30) day period after [illegible] a bona fide offer.

15. Proof of Ownership - Conveyances

Irving and Nelson agree promptly at the request of Dmont to make available for examination by legal counsel for [illegible] deeds and abstracts of title evidencing ownership in them of the properties and property rights which they represent under paragraph [illegible] of this agreement to be presently held by them, and agree in the event any defect in such title is found to exist that they will promptly proceed to remedy the same as in Paragraph No. 1 [illegible] provided.

Likewise, at the request of Dmont, Irving and Nelson agree to cause to be executed and placed in escrow with a [illegible] trust company acceptable to both parties, deeds conveying to Dmont the rights it is entitled to acquire through the exercise of the two options hereinafter set forth with proper instructions as to the delivery of such conveyances.

16. Operation of Contiguous Properties Under Lease

In the event during the continuance of this agreement Dmont shall operate under leads without option to purchase any mine or mines ~~contiguous to the properties~~ covered by this Agreement, the net profits from such operations shall be divided between Dmont on the one hand and Irving and Nelson on the other, until either this Agreement is terminated or Dmont makes final payment under [illegible] hereinafter granted, as hereinafter provided.

Such net profits shall be determined by deducting all expenses incident to the operation, including all reserved rentals and royalties (except any share of net profits reserved by an owner or lessor) payable to the owners or lessors of any such property.

One-half of the net profits as so determined shall

retained by Umont and the remaining one-half, less any royalty required to be paid to the owner or lessor of the property so operated, shall be paid to Irving and Nelson. All payments so made to Irving and Nelson shall operate to reduce the purchase price under Option B hereinafter granted, equally with other payments made by Umont to Irving and Nelson as in said Option B. provided.

17. Machinery and Equipment:

Umont shall have the right to use all machinery and equipment now on said properties and belonging to Irving and Nelson without payment of any further charge, excepting underground equipment not being used by the surlessees or additions thereto or replacements therefor. Such equipment as Umont has the right to use shall be maintained by Umont in good condition, ordinary wear and tear alone excepted. Any such machinery or equipment not needed by Umont may be removed or stored on the property by Irving and Nelson at their election without any charge or expense to them. Any such machinery or equipment requiring replacement because of damage caused by negligence in use shall be replaced by Umont at its expense and shall belong to Irving and Nelson. Any machinery or equipment requiring replacement because of ordinary obsolescence shall be delivered to Irving and Nelson for disposition as they see fit and the replacement equipment shall belong to Umont.

18. Umont to Pay Taxes and Assessments:

Umont shall pay, before the same become delinquent, all taxes and all assessments which during the term hereof may be lawfully levied or assessed upon the properties covered by this agreement and upon all structures and improvements, equipment and other property erected, constructed, installed and/or used in connection with the exercise of the rights herein granted, and shall also pay when due all net proceeds, occupation, license and output taxes lawfully levied upon all ores or minerals extracted from said premises hereunder. Umont, upon the payment of such taxes and assessments, shall promptly furnish the partners, Irving and Nelson, with satisfactory evidence of such payment.

19. Inspection of Premises:

~~Irving and Nelson, or their authorized agent or agents~~

Ubont will permit Irving and Nelson, or their [illegible] agents designated in writing, at all reasonable times to enter on Irving and Nelson's rank and inspect the mine and all workings and work in thereof, and structures on the properties covered by this agreement and to make any survey that they may deem necessary or [illegible] for the purpose of checking the amount of ores mined or for an examination of the physical condition of the property and workings and the manner and conduct of the mining and for the ~~purpose~~ purpose of taking samples of any ore or products produced from said premises, and for such inspection and sampling all holes, laterways or other workings of interest and access shall be open to said Irving and Nelson or their agent or agents, but representatives of Ubont may accompany Irving and Nelson or their agent or agents.

20. Conduct of Mining Operations:

Ubont shall promptly enter upon said premises and carry on operations in a manner necessary to good and economical mining so as to take out the greatest possible amount of commercial ore free from waste, having due regard to the safety, development and preservation of said premises as a workable mine or mines, and shall work said mines as aforesaid continuously and steadily during the term hereof unless excused from such operation under the provisions of paragraph 13. Ubont shall timber said mine or mines sufficiently at all points where proper, and repair all old timbering whenever it may become necessary in order to preserve the premises in a workable condition; and will keep all shafts, drifts, tunnels and workings currently in use by Ubont or which reasonably may be necessary to the further development of the premises in good condition of repair, and will keep the same drained and clear of loose rock and debris of all kinds; and will adequately fence, cover or otherwise protect all shafts, cuts or other surface openings made or used by them under this agreement.

21. Books and Accounts:

Irving and Nelson shall keep all records pertaining to "Lease Ore" and Ubont shall keep all other records required under said operations. Each party, as to the accounting of the operation for which they are accountable, will keep books and accounts showing the amount of ores extracted from said premises, the amount of

[illegible] mined, sold or treated and the amount of money received [illegible] the same, or the value extracted therefrom, and [illegible] shall access to said books, accounts and records [illegible] at reasonable times.

22. Disposal of Waste, Refuse and Mine Water:

Umont shall make such provision for the disposal of waste, refuse and mine water from the mine or mines on the leased premises that the same shall not be a nuisance nor injure the property covered by this agreement or the property of others and shall not obstruct or contaminate any stream, or obstruct any right of way or other means of transportation or travel.

23. Labor, Material, Supplies, Machinery and Equipment to be Furnished by Umont:

Umont shall, at its own cost and expense, except for the expenses of the subleases, furnish all labor, material, supplies, machinery and equipment necessary for the proper operation of the demised premises and shall pay in full when due, all bills for labor and for the purchase or installation of such material, supplies, machinery and equipment; and Irving and Nelson shall incur no liability or obligation therefor in any respect. Umont shall not permit or suffer any lien of any kind to become established or enforced against said premises for any labor, material, supplies, machinery or equipment furnished.

24. State and Federal Enactments:

In the operation and development of said premises, Umont shall observe and comply with all applicable Federal and State laws, safety regulations, and laws of the State of Montana with reference to Workmen's Compensation, insuring and keeping insured during the term hereof all persons employed by them under the provisions of said workmen's compensation law.

25. Assumption of Risk - Indemnity.

Umont will defend and save Irving and Nelson harmless and fully indemnify them as to any liability for or on account of injury to or death of any person or damage to any property alleged to have resulted from the unsafe condition of the leased premises or due to any act or omission of Umont, its agents or servants, and will

[illegible] discharge all liabilities, claims and demands [illegible]

[illegible] the risk as above in [illegible]

26. Default of Lessee:

The failure of Lessee to make such payment [illegible] or to observe, adhere by and perform all covenants and [illegible] hereinabove set forth shall constitute a default by Lessee, and [illegible], at the option of Irving and Nelson be cause for terminating this agreement as follows: Irving and Nelson, in the event of [illegible] default and exercise of the option to terminate this agreement, shall give notice to Lessee stating that this agreement shall be terminated thirty (30) days from the date of mailing of such notice unless the default be within said thirty-day period fully corrected. Such notice shall be deemed given and received upon a copy thereof being deposited in the United States Post Office, addressed to Lessee at its address as set forth in this agreement, with proper postage thereon prepaid. If, within said thirty day period the default is not corrected, this lease and agreement shall be at an end and all rights of Lessee upon said premises shall cease and said lease and agreement be terminated except that any title to property which Lessee may have acquired by the exercise of option A or sub-paragraph (d) of paragraph 28 shall not be affected.

A waiver by Irving and Nelson of a particular default shall not be deemed or held to be a waiver of or affect any other default or impair their rights resulting therefrom.

27. Surrender of Property:

Upon the termination of this agreement for any cause except full payment under Option B, Lessee shall immediately surrender unto Irving and Nelson all of the premises herein demised without delay or hindrance, and Irving and Nelson shall have the right at any time after the expiration or termination, however, of this agreement to enter upon the premises aforesaid and to take immediate possession thereof without declaration of forfeiture, act of re-entry or process of law.

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[illegible]:

For the considerations hereinbefore set forth, and of the further sum of one ($1.00) dollar by Umont to Irving and Nelson paid, the receipt of which is hereby acknowledged, Irving and Nelson do hereby give and grant to Umont the exclusive right, option and privilege of purchasing upon the terms and conditions and within the time hereinafter stated, the rights in and to all the properties covered by this agreement, as in said options set forth, to-wit:

OPTION A: Upon condition that Umont has advanced to Irving and Nelson the sum of $47,345.85 for the purposes and at the times specified in paragraph "5" of the foregoing agreement, Umont or its assigns shall be entitled to purchase a 20% interest in Irving and Nelson's title to any mining claims and in Irving and Nelson's share or interest in any leases or leases and options acquired by Irving and Nelson with or without the help of Umont during the life of said agreement and lying within a radius of twelve miles from the Plutus shaft on the Plutus lide mining claim, Survey No. 3018, upon payment to Irving and Nelson of the sum of $5,000.00 over and above any sums otherwise payable to them under this agreement, on or before December 31, 1958.

The exercise of this option before December 31, 1958, shall not affect the royalties and division of profits as in the foregoing agreement provided, but such provision shall continue in effect as though such option had not been exercised.

OPTION B: Upon condition that Umont or its assigns has exercised Option A before December 31, 1958, Umont or its assigns are hereby granted a lease for a period of thirty (30) years beginning with the date on which Umont or its assigns elects to exercise Option A as hereinafter provided, together with an option to purchase the remaining 80% of any title which Irving and Nelson then have in the properties covered by the foregoing agreement and an assignment of all leases and options then held by Irving and Nelson on any other properties lying within a twelve mile radius of the Plutus shaft, upon the terms and conditions hereinafter stated.

(a) Election to exercise Option B.

Election to exercise such option shall be given by written notice to Irving and Nelson on or before January 2, 1[illegible], accompanied by a payment of $15,000.00 to apply upon the option price.

(b) Option Price:

The option price shall be $870,000.00, less the aggregate of all royalty and net profit payments made to Irving and Nelson under the foregoing agreement, excepting such G.[illegible] payments or any other payments which for tax purposes of Irving and Nelson, but not for the purposes of this agreement, are considered as income to Irving and Nelson.

Said option price may be further reduced by the exercise of Irving and Nelson of the right hereinafter reserved to them to participate with Umont or its assigns therein as hereinafter in subparagraph (f) provided, and may be still further reduced as follows:

It is recognised that Irving and Nelson do not own all of the Little Sarah lode mining claim, Survey No. 8095 although said claim is being mined by them and will be mined by Umont under the terms of the foregoing agreement. Irving and Nelson agree to attempt to purchase the outstanding interest in said claim or obtain a lease and option upon it, but in the event during the term of this agreement, including the period of the lease and option granted under Option B, Umont is required to pay to the owner of the outstanding interest in the Little Sarah lode mining claim any amount as Umont's share of the net proceeds due to such outstanding owner, or if Umont shall be required to purchase such outstanding interest from a[illegible] other than Irving and Nelson, or pursuant to a lease and option on such fractional interest after assignment thereof to Umont by Irving and Nelson, then and in such event the option price otherwise payable to Irving and Nelson shall be reduced by any such amounts paid by Umont with respect to said outstanding interest in the said Little Sarah lode mining claim.

(c) Rentals under lease:

[illegible] or its assigns shall pay to Irving and Nelson [illegible] of all ores removed from the leased premises, [illegible] value of ores shipped to General Services Administration or other governmental agency as evidenced by their acceptance [illegible] or their equivalent, 10% on all net mint returns, net smelter returns, net plant returns, net mill returns, or any other returns from ores sold as such terms are defined in the foregoing agreement.

Settlement for royalties so payable, calculated as aforesaid, shall be made on or before the 20th day of each calendar month or as soon thereafter as necessary data are available on all ores shipped during the preceding calendar month, accompanied by a statement showing the factors used in determining such royalties.

All royalties so paid shall be credited upon the option price of the properties covered by this lease and option.

<u>Minimum Royalties</u>: In the event royalties payable upon production do not equal $15,000.00 in any consecutive six month period, Irving and Nelson may terminate this lease and option upon [illegible] Umont or its assigns thirty days written notice of their election so to do unless within such thirty day period Umont or its assigns pays to Irving and Nelson an amount equal to the difference between the royalties payable for such period and the sum of $15,000.00 and any payment so made shall be credited upon the option price; provided, however, that in the event it is necessary in order to acquire outstanding interests in the parcels of land listed and described under subparagraphs (a) to(e) inclusive, of paragraph 2 of Exhibit A attached hereto, it proves necessary to agree to make minimum royalty payments not out of production from such leased premises, then and in such event the said figure of $15,000.00 shall be reduced by the amount of such minimum payments not in fact made out of production to persons other than Irving and Nelson and paid in any such six month period, not exceeding, however, the sum of $4,500.00 in any such period if in such six month period royalties on production payable hereunder do not equal or exceed $15,000.00; provided further, that any amount in excess of $15,000.00 paid to Irving and Nelson in any such six month period shall be credited upon the option price and shall be applied to reduce the minimum payment required to be made

in the succeeding six month period to the extent of such overpayment.

(d) Nothwithstanding any other provisions of Option B, in the event that (a) it becomes necessary for Umont to make the payments in said option provided to Irving and Nelson from sources other than production from the properties covered by this lease and option, or (b) the royalty payments to Irving and Nelson made pursuant to the provisions of Option B are finally determined by a court of competent jurisdiction or by an agency of the federal government to constitute capital expenditures and not operating costs, Umont shall be entitled to conveyance or assignment of that percentage of Irving and Nelson's interest in the properties covered by this lease and option(and which they shall be obligated, upon full payment hereunder after exercise by Irving and Nelson of their option as in subparagraph (f) of paragraph 4d, to assign and convey to Umont) equal to the percentage that the total of the payments not out of production as set forth in (a) hereinabove provided, and the payments referred to in (b) hereinabove provided bear to the total cost of the property interest to be acquired by Umont ~~to be acquired by Umont~~ under the terms of said Option B.

A determination of the amount of interest in said properties, if any, to which Umont may be entitled under the provisions of this paragraph (d) shall be made and the execution and delivery by Irving and Nelson of instruments proper to convey to Umont said interest shall be made within 60 days from the end of each calendar year during the period that Umont is operating under the terms of said Option B. The first calendar year period may be extended to include any fractional portion of the year preceding the first full calendar year during which this option period is operative.

(e) Work to be performed by Umont or its assigns:

In the event Umont or its assigns elects to exercise Option B, Umont shall undertake to mine and develop to the best of its ability such properties as are covered by the lease and option as hereinbefore in this agreement provided, including in particular the provisions

of section 4(d) thereof, and assume and agree to comply [illegible] with the terms and conditions of the leases and options [illegible] to it by Irving and Nelson and standing in Umont's name [illegible] to the provisions of all such leases and options; provided, however, that Umont, at its election subject only to the rights reserved to it under subparagraph (d) above, may re-assign or reconvey to Irving and Nelson and relinquish any responsibility of Umont for any lease, lease and option or title to any claim assigned to or obtained for Umont by Irving and Nelson. If during the term of this lease Umont shall amend or extend or renegotiate any lease or lease and option on property originally covered by Option 1, then such amendment, extension or renegotiation shall not affect Irving and Nelson's rights to royalties from the operation of any such premises during this lease term but Irving and Nelson shall be entitled to royalties therefrom so long as Umont or its assigns operate any such property and until the termination of this lease and option.

(f) NOTWITHSTANDING THE FOREGOING, IT IS EXPRESSLY [illegible] AGREED that in the event Umont elects to exercise Option [illegible] and makes the first payment thereon, Irving and Nelson shall have and hereby reserve the right to participate with Umont or its assigns to the extent of up to but not exceeding a 10% interest, whether evidenced by stock or otherwise, in all of the properties, including mines, reduction works or other plants and leases acquired and held by Umont, its successors or assigns, within a twelve mile radius of the Plutus shaft at any time. ~~during the period when such option price is payable; it being expressly understood, however, that such 10% or lesser interest reserved or acquired by Irving and Nelson shall continue in their ownership after the final payment of the full purchase price under Option 2.~~ In the event Irving and Nelson elect to participate with Umont or its assigns, then the basic price of $870,000.00 under Option 2 shall be reduced by [illegible] for each one (1%) per cent Irving and Nelson elect to accept in such participation. Written notice of such election, specifying the percent of participation elected by Irving and Nelson, shall be given to Umont or its assigns within thirty days from the date when Umont makes the

first payment under Option B. Such notice shall then fix the option price to be paid by Umont and Irving and Nelson shall promptly be entitled to such stock, deeds or other documents, without further cost or payment by Irving and Nelson, as shall be necessary to evidence or convey to Irving and Nelson the interest they shall then be entitled to of any properties then held by Umont and to which Irving and Nelson do not already have their proper share of title. As and when Umont acquires other properties ~~during the option payment period~~, Irving and Nelson shall promptly receive appropriate deeds, stock or bills of sale evidencing their proper interest in any such properties.

(g) Umont or its assigns shall be entitled to terminate this lease and option at any time upon giving to Irving and Nelson notice and release thereof as in the foregoing agreement provided, and thereupon any liability of Umont shall immediately cease and terminate except liability on account of any obligation arising out of its mining operations in the optioned premises incurred or owing prior to the time of such termination.

(h) Whenever after exercise of Option B Umont or its assigns are prevented from operating the properties covered by the foregoing agreement and this lease and option, for any of the reasons set forth in paragraph 13 entitled "Force Majeure" of the foregoing agreement, Umont and its assigns shall be relieved of the obligation for the payment of royalties during such period as such cause of disability shall continue; provided, however, that in the event the disability is one peculiar to Umont, which under said paragraph 13 would otherwise allow Irving and Nelson the right to terminate said agreement, then and in that event Umont may nevertheless retain said lease and option even though operations on said properties shall be indefinitely suspended by continuing to pay Irving and Nelson said $15,000.00 each six month period, to be credited on the option price.

(i) Except when excused under subparagraph (h) above, in the event Umont does not use its best efforts to mine said premises covered by said option and keep and perform the terms and conditions

of this agreement at the times and in the manner herein provided, then upon written notice to Umont specifying the default [illegible] thirty days within which to remedy it and if within such [illegible] period such default has not been remedied, then said lease and option shall terminate and Irving and Nelson shall retain all sums theretofore paid and Umont's interest in the properties in the foregoing agreement shall only be such as it acquired through its exercise of option A and subparagraph (d) of paragraph 28.

(j) In the event of termination of said option the same disposition shall be made of machinery and equipment as provided in paragraph 14 of the foregoing agreement.

29 In the event the foregoing agreement is terminated after Umont has exercised Option A, Irving and Nelson may operate any of said premises themselves, without being first required to enter into a written lease from Umont covering Umont's undivided interest in any claims to which Umont shall have obtained some title or interest to, and Umont shall be entitled to receive the following portions of the proceeds from such properties:

(1) Operations by Irving and Nelson: In the case Irving and Nelson operate any of such properties themselves they shall pay to Umont in full satisfaction of Umont's rights in the proceeds of such operation, whether or not Umont has an undivided interest in legal title or only an undivided interest in a lease or lease and option, royalties according to the following schedule:

Property interest of Umont	"A" % of Gross receipts where Umont and Irving & Nelson own entire legal title	"B" % of gross receipts under lease [illegible] and option [illegible] Umont and Irving [illegible] have no [illegible]
20%	5%	[illegible]
30%	6%	[illegible]
40%	7%	[illegible]
50%	8%	[illegible]
60%	9%	[illegible]
70%	10%	[illegible]
80%	11%	[illegible]
90%	12%	[illegible]
100%	14%	[illegible]

In the event Umont and Irving and Nelson between them do not own the entire legal title to said premises, then and in that event,

[illegible] shall be applied to the portion of the [illegible] portion that Amont and Irving and Nelson hold [illegible] legal title to said property and [illegible] portion of the gross receipts from such operation.

(4) Sale or assignment of lease or [illegible] In case Irving and Nelson elect to sell or assign all of [illegible] lease and option covering any of such premises, they shall [illegible] agreement shall be their authority to enter into [illegible] such sale or assignment they may deem advantageous [illegible] behalf of Amont as its attorney-in-fact and [illegible] or other document necessary to include Amont as [illegible] sale or assignment and Amont shall receive twenty (20%) per cent [illegible] such other or additional percent as Amont may have acquired [illegible] provisions of paragraph 28(d) hereof) of any royalty reserved [illegible] assignment, or twenty (20%) per cent (or such other percent [illegible] Amont may have acquired under the provisions of paragraph [illegible] hereof) of the net profit as calculated for Irving and Nelson's [illegible] tax purposes of any sale price received by Irving and Nelson from such transaction, which amounts so due to Amont shall be paid to it within thirty (30) days after receipt of such reserved royalty, or sale price by Irving and Nelson.

(5) Sale or lease of interest in [illegible] Irving and Nelson shall not operate a particular mining claim or [illegible] Amont and Irving and Nelson each have a fractional interest of the legal title, but desire to sell or lease such property [illegible] Amont and Irving and Nelson shall separately negotiate [illegible] such terms and conditions of sale or lease or lease and [illegible] they desire and neither shall have the power or authority to [illegible] interest of the other.

3. In the event the royalty payment to Irving and Nelson in any six month period shall be reduced as provided in the [illegible] of this agreement entitled "Minimum Royalties" in subparagraph (c) of paragraph 28 and the total option price as reduced by other [illegible] shall not have been paid at the end of thirty years from the date of

[illegible] said lease for such time as shall permit the [illegible] said unpaid minimum royalties by payment of the 10% royalty [illegible] to Irving and Nelson hereinbefore upon the same terms [illegible] hereinbefore provided; and until such payment of such balance of minimum royalties, anything herein to the contrary notwithstanding, said lease shall not terminate and Umont shall not be entitled to its final conveyances of the interests covered by Option [illegible].

31. In the event that Umont shall exercise Option [illegible] before the repayment in full of the existing General Services Administration loan on the properties, Umont agrees to assume full responsibility for the repayment of the balance of said loan and to relieve Irving and Nelson of any other or further obligation for such loan.

32. Umont shall pay to the sublessees the four (4%) due to such sublessees from class A ore as defined in paragraph 1(f) hereof, at the times and in the manner provided in paragraph 4 of exhibit A attached hereto, which lease, as extended, expires June 30, 1958.

33. This agreement and the benefits, duties and obligations hereof shall be binding upon and inure to the benefit of the parties hereto, their successors, heirs, executors, administrators and assigns, excepting only the employment provisions regarding Irving and Nelson, which shall be deemed personal to Irving S. Irving and Robert M. Nelson; provided, however, that except by operation of law, no interest in this agreement and no option or right contained herein and no interest in any property covered by this agreement (except as provided in paragraph 29(2) hereof) shall be assigned or transferred or sold without the written consent of the other parties hereto being first had and obtained.

34. Anything to the contrary in this agreement notwithstanding, during the continuation of this agreement, including the period of Option B payments, title to any mining claims acquired hereunder,

[illegible] shall only take in the name of [illegible] [illegible] within a twelve mile radius of the Plutus shaft, [illegible] [illegible] in the name of Irving and Nelson or [illegible] [illegible] Irving and Nelson upon any termination of this agreement [illegible] by full payment of the Option B price or expiration of said [illegible] year period and excepting the title interests which Umont shall acquire upon exercise of Option A, or as Umont may have acquired [illegible] to the provisions of paragraph 29(d). And Irving and [illegible] during all of the period of this agreement until its termination by [illegible] payment of the Option B price or otherwise shall use their best efforts to obtain title to or leases and options upon all desirable mining claims within a twelve mile radius of said Plutus shaft. Neither party hereto, upon obtaining title to any mining property in said area shall sell such title or any interest therein to any third party without the written consent of the other parties hereto and a written agreement among the parties hereto first obtained as to the division of proceeds of any such sale.

35. For the purposes of this agreement, the terms "machinery and equipment" shall include any prefabricated building, excepting any foundation therefor.

36. In the event during the term of this agreement, including the Option B payment period, Irving and Nelson shall obtain title to or a lease or lease and option on any mining claim within said twelve mile radius of said Plutus shaft and Umont shall not be interested in said property and shall so advise Irving and Nelson in writing, then Irving and Nelson may deal with said property as they see fit; provided, however, that if Irving and Nelson shall then develop such property to the point where Umont would then be interested in it prior to the termination of said agreement, Umont shall have the right to require its inclusion in this agreement for all purposes; however, in such event, whether such events occur before or after the election to exercise Option B, the proceeds of the operation of such property shall be handled and accounted for separately from all other operations under this agreement and the

[illegible] of profits therefrom shall be handled as [illegible] properties described in paragraph 16 hereof, except [illegible] rather than Irving and Nelson shall pay out of Umont's share of the profits any royalty due to any owner of any interest in [illegible] property measurable by a portion of the net profits of said operations, and any profits therefrom to Irving and Nelson shall not apply against the option no. price.

37. [illegible]: At all times during the continuation of this contract, including the period under Option No. Umont shall carry insurance, insuring the buildings, structures and equipment on the surface of the premises covered by this agreement against fire and such other risks and in such amounts as are required under the [illegible], [illegible] or other governmental loan agreement or contract pertaining to any of said premises and in all such insurance shall include Irving and Nelson among the assureds; proceeds from such policies to be payable to them in event of loss as their interests shall appear. After any governmental or other loan agreement shall have been repaid, the same risks shall be covered, insured at least to the extent of $23,975.00 and the proceeds of such policies shall be payable to the parties as their interests shall appear, but such proceeds, unless the parties agree to the contrary, shall be applied to repair or replace the items insured.

Umont shall provide, during the term of this agreement, such public liability coverage as shall be required by [illegible] or other governmental contract applying to the properties under this contract.

38. [illegible]: All notices given or required to be given under the terms of this agreement shall be in writing, sent by registered or certified mail through the United States Post Office, with proper postage thereon prepaid.

Notices to Umont shall be in duplicate, one copy [illegible] mailed to "Umont Mining Inc., King Street Dock, Burlington, [illegible]" and one to "Umont Mining Inc., 912 Kearns Building, Salt Lake City, Utah," or to such other addresses as Umont may from time to time specify in writing.

Notices to Irving and Nelson shall be in duplicate, one copy being mailed to "Robert N. Nelson, 512 Clark, Helena, Montana," and one to "Irving G. Irving, 4916 Elizabeth Warren Avenue, Butte, Montana," or to such other addresses as Irving and Nelson may from time to time specify in writing.

All notices shall be deemed given and received as of the day they are addressed and mailed as herein specified.

39. By their signatures hereto, the wives of Irving and Nelson hereby release any dower interest they now have or may hereafter acquire in any property covered by this agreement and do hereby consent to the conveyance of any such property pursuant to and in accordance with the terms of this agreement.

IN WITNESS WHEREOF, the individual parties hereto have hereunto subscribed their names and Umont Mining Inc. has caused these presents to be executed and its corporate seal to be affixed by its proper officers thereunto duly authorized, all in quadruplicate, as of the day and year first hereinabove written.

UMONT MINING INC.

By /s/ Lewis P. Evans Jr.
President

ATTEST:

/s/ Frederick J. Fayette
Secretary
General Counsel

/s/ Irving G. Irving
Irving G. Irving

/s/ Robert N. Nelson
Robert N. Nelson

/s/ Kathryn T. Irving
Kathryn T. Irving

/s/ Margaret L. Nelson
Margaret L. Nelson

State of Montana,)
; ss.
County of Silver Bow.)

On this 16 day of April, in the year 1956, before me, James A. Poore, Jr., a Notary Public for the State of Montana, personally appeared Irving G. Irving, Kathryn T. Irving and Robert M. Nelson, known to me to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.

In witness whereof, I have hereunto subscribed my name and affixed my Notarial Seal the day and year in this certificate first above written.

/s/ James A. Poore, Jr.
Notary Public for the State of Montana,
Residing at Butte, Montana,
My commission expires October 20, 1957.

State of MONTANA,)
; ss
County of Silver Bow)

On this 16 day of April, in the year 1956, before me, James A. Poore, Jr, a Notary Public for the State of Montana, personally appeared Margaret L. Nelson, known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that she executed the same.

In witness whereof, I have hereunto subscribed my name and affixed my Notarial Seal the day and year in this certificate first above written.

/s/ James A. Poore, Jr.
Notary Public for the State of Montana,
Residing at Butte Montana
My commission expires Oct 20, 1957.

Montana

Silver Bow } ss.

16 [illegible]

James A. Poore, Jr.

[illegible], State of Montana

[illegible] Lewis P. Evans, Jr.

[illegible] President [illegible]

[illegible] acknowledged to me that such corporation executed the same.

[illegible] hereof, I have hereunto set my hand and affixed my notarial seal the day and year in [illegible] above written.

/s/ James A. Poore, Jr.

Notary Public ~~[illegible]~~ for ~~[illegible]~~ State of Montana

[illegible]

Residing at Butte, Montana

My commission expires October 20 1957

Exhibit - A

AGREEMENT MODIFYING SUBLEASE

THIS AGREEMENT, made and entered into this 31st day of ~~April~~ March 1956, by and between IRVING G. IRVING and ROBERT H. NELSON, hereinafter termed "Sublessors", and ALVY CHAPMAN, ROBERT E. LAMBERT, RICHARD A. F. HUMMEL and GEORGE HUBBARD, hereinafter termed "Sublessees";

W I T N E S S E T H :

Recitals

Under date of March 10, 1952, the parties hereto (other than Robert H. Nelson) entered into a sublease covering the Norwich lode mining claim, Survey No. 2724, located in Silver Bow County, Montana.

Said sublease has been amended and extended by Memorandum Agreement entered into under date of November 24, 1952 and agreement entitled "Lease Extension and Modification Agreement" entered into under date of May 18, 1955.

Sublessors propose to enter into a lease and management agreement with an experienced mining company, looking to the further exploration and development of certain mining properties including the Norwich claim, and it is recognized as being in the mutual interest of the parties hereto that such agreement be entered into since it will expedite crosscutting, drifting, raising and extraction of Class A ore as hereinafter defined.

The parties hereto desire to modify said sublease as so extended and amended in order to restrict to a portion of said Norwich lode mining claim the property to be included therein and to release the remainder of such claim from such sublease and permit of its operation independently thereof.

NOW THEREFORE, in consideration of the premises, and of the sum of One Dollar ($1.00) by the Sublessors to the Sublessees paid, the receipt of which is hereby acknowledged, IT IS HEREBY AGREED by and between the parties hereto as follows, to-wit:

1. Release of Ground

The Sublessees do hereby release from the aforesaid sublease all of the premises covered thereby except the following portion thereof designated as "Lease Ore" and defined and delineated as follows:

> All ore in the Norwich vein, or within 100 feet of its walls above the 244 (3) level, east of the east end line of the Mapleton Patented Lode Claim (Survey 995) and west of coordinate 5600 E; in addition, all ore in the Norwich vein, or within 100 feet of its walls above the 300 (#5) level east of the east end line of the Mapleton Patented Lode Claim (Survey 995) and west of coordinate 5240 E.

The Sublessees shall have the right to crosscut and/or drift eastward on the #3 level (244' vertically below the collar of the Plutus shaft) to coordinate 5600 E, and any ore revealed by this permitted work or otherwise disclosed may be mined above the proposed level extension and to the surface in accordance with the terms and agreements now in effect governing the extraction of "lease ore" except as modified hereinafter.

2. Reservation of Royalty

Notwithstanding the foregoing, there is expressly reserved to the Sublessees, during the term of this sublease as extended and modified, the right to receive 4% royalty computed on the gross income derived from the sale of Class A ore, which ore is defined as follows.

Class A Ore

> All ore in the Norwich vein or within 100 feet of its walls below the lease ore and above the 400' level (#6 level) and east of the Mapleton east end line and west of coordinate 5600 E.

All moneys so payable shall be remitted by the Sublessors to the Sublessees, their heirs or assigns, within five (5) days after receipt thereof by the Sublessors, accompanied by proper G.S.A. Acceptance Invoices.

3. Provisions for Protection of Sublessors

It is expressly understood that the provisions of the original sublease with respect to the maintenance of insurance, the posting of notices, and the indemnification of the Sublessors against all claims and demands shall extend and inure to the benefit of the Sublessors and their lessees and assigns in the operation of the property.

4. Development Work

The lease participation and management agreement which Sublessors propose to enter into not later than April 15, 1956, will contemplate the repair of the Plutus shaft and re-opening of the 400' level, and as soon as facilities permit crosscutting, drifting, raising and extraction of Class A ore on a two-shift basis without interruption insofar as possible and consistent with good mining practice. Such lease and agreement will contemplate full cooperation with the Sublessees, and the Sublessees hereby agree to cooperate with the Sublessors and their said lessee in transporting ore and other normal uses of the shaft facilities, and Sublessees recognize the rights of Sublessors or their lessee to conduct mining operations necessary for the development and extraction of Class A ore from the bottom levels of the lease ore area in paragraph 1 as above defined.

5. Inspection

The right of inspection reserved to the Sublessor by the original sublease shall inure to the benefit of the Sublessors and any lessee or assign of them. Sublessors agree that one sublessee or a representative of the Sublessees to be selected by them and designated in writing, shall be entitled to enter at his own risk once each week during regular working hours for the purpose of inspecting the extended workings in order to familiarize themselves with the work being done to facilitate the extraction of Class A ore.

6. Restrictions on Work of Sublessees

Sublessees expressly agree with Sublessors during the remainder of the term of the aforesaid sublease as follows:

(a) To confine their activities to one shift per day, all Sublessees and their employees working on the same day shift;

(b) To assume all risk with relation to their use or occupation of the subleased premises, including the risk and danger to which operations by Sublessors or any lessee from them shall subject such premises and to indemnify and save Sublessors and any lessee from them harmless against all claims based on any act or omission of Sublessees or their employees.

(c) Promptly to reimburse Sublessors or any lessee from them for their pro rata share of topmen's cost in accordance with the practice heretofore followed;

(d) To hold Sublessors and any lessee from them harmless and fully indemnify them against all claims and demands of any kind or nature which may be made upon them or against the subleased premises for or on account of any debt or expense contracted or incurred by Sublessees in the conduct of their operations in the subleased premises; and

(e) To endeavor in good faith and consistently with good mining practices, to mine ore from the lease ore at the rate of 1000 tons per month as long as there is sufficient such ore to justify such rate of production.

7. Withdrawal of One or More Sublessees

In the event one or more Sublessees elect to withdraw permanently from the group of sublessees, the number of shifts required to be worked as provided in the original sublease shall be proportionately reduced, and to maintain the sublease in good standing twenty-five 8-hour manshifts shall be required to be worked each month for each Sublessee remaining connected with the project.

8. Low Grade Bodies or Prospects

Notwithstanding the provisions of the Memorandum Agreement dated November 24, 1952, it is expressly understood and agreed that in the event within the "Lease Ore" area prospects or low grade blocks of ore are found, the mining of which the Sublessees do not desire to undertake but which the Sublessors or any lessee from them does desire to undertake, then upon notice to Sublessees of such intention to mine, Sublessees shall either reconsider and promptly begin the mining of such area, or shall forever release all right therein irrespective of the extent in volume or value of the ore developed within such area.

9. Mining Within the Mapleton Lode Mining Claim

In the event during the term of this sublease Sublessors or any lessee from them secure the right to mine in the Mapleton lode mining claim, during the term of this sublease as extended and modified, then and in such event there shall be paid to the Sublessees, a royalty of 2% based upon the gross G.S.A. Acceptance Invoice receipts from ore mined.

and shipped from the following portion of said claim, to-wit: On the Norwich vein or within 100 feet of the walls of the Norwich vein on or above the 300' level (#5 level) at the Norwich vein and within 300 feet west of the east end line of the Mapleton claim, such royalty to be divided equally between the four named Sublessees.

And the Sublessees recognize the exclusive right of the Sublessors or their assigns so far as the Sublessees are concerned, to explore for, develop and mine ore from the Mapleton claim through the Norwich and Plutus mine workings.

10. Royalty Adjustment

In the event Sublessors on or prior to April 15, 1956, enter into a lease participation and management agreement as hereinabove mentioned, it is expressly understood and agreed that thereafter and during the remainder of the term of this sublease, settlement on Lease Ores shipped shall be made on the following basis:

The Sublessees' share of each shipment shall be calculated in the usual manner and from the amount so determined to be due the Sublessees shall be added 4% of the gross value of the ore as shown on the G.S.A. Acceptance Invoice, and the adjusted amount so determined to be due Sublessees shall be equally divided between such of the Sublessees as have remained participants in the sublease and have not withdrawn therefrom.

11. Failure of Development Work

In the event Sublessors either fail to enter into lease participation and management agreement on or before April 15, 1956, or they and their lessee thereafter discontinue the exploration and development of the properties hereinabove referred to, then and in such event this Agreement Modifying Sublease shall terminate and such sublease as heretofore extended and modified shall again come into full force and effect.

12. Force Majeure

Prevention or delay in the performance hereof caused by act of nature, strikes or other labor disturbances, fire, flood, traffic interruption, delay in transportation, shortage of power, inability to procure labor,

supplies or material, insurrection or mob violence, requirement or regulation of government, or if by reason of financial crises or market conditions, operations in the premises cannot be maintained without serious financial loss or serious hardship, or any other reason or disabling cause beyond the reasonable control of Sublessors or any lessee from them, shall entitle them to suspend operations hereunder until the cause of disability shall have been removed or have become inoperative.

13. Adverse Claims

Sublessees individually and collectively acknowledge that the sole right to occupancy of the Norwich claim is that expressly provided [redacted] It is agreed that George E. Hubbard may continue to [redacted] occupy the house, now occupied by him on the Norwich Claim, but in the event [redacted] Hubbard elects to abandon the present sublease before June 30, 1958, the house [redacted] will remain for the sole use of the remaining sublessees, until expiration or [redacted] termination of sublease. However, the sublessees agree that they will not at any time assert any claim adverse to Sublessors, or their assigns, by reason of such occupancy.

14. [redacted]

As herein modified, and previously modified, the said sublease dated the 10th day of March, 1952 shall continue in full force and effect.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands in duplicate the day and year first hereinabove written.

/s/ Irving G. Irving
Irving G. Irving

/s/ Robert E. Nelson
Robert E. Nelson

(Sublessors)

/s/ Alvy Chapman
Alvy Chapman

/s/ Robert E. Lambert as principal
Alvy Chapman by his attorney-in-fact
Robert E. Lambert

/s/ Richard A. F. Hummel
Richard A. F. Hummel

/s/ George Hubbard
George Hubbard

(Sublessees)

[illegible] ATTORNEY

KNOW ALL [illegible]

[illegible] 1713 South Washington [illegible] and appointed, and by [illegible] ALVY CHAPMAN, residing [illegible] attorney for [illegible] benefit to sign [illegible] day of March, 1956, [illegible] lease extension agreement dated [illegible] lease extension agreement [illegible] agreement dated November [illegible] 24, [illegible] certain original lease agreement [illegible] IRVING [illegible] IRVING, as sub-lessor, [illegible] Montana, [illegible] Montana, [illegible] 390, Survey 2724; [illegible] as the "Independence [illegible] County, Montana, and all [illegible] original lease agreement herein mentioned [illegible] are the same and identical [illegible] agreement, the modification [illegible] the further modified lease and [illegible] of March, 1956.

GIVING [illegible] ALVY CHAPMAN, full power and [illegible] whatsoever requisite necessary [illegible] premises connected with the further modification of said [illegible] lease extension agreement as hereinbefore mentioned as fully, and to all intents and purposes, as I might or could do if personally present, hereby ratifying and confirming all that my said attorney shall lawfully do or cause to be done

[illegible] of these presents and [illegible] of the further [illegible]

[illegible] 195[illegible].

In Witness Whereof, I have hereunto set my hand and [illegible]

[illegible] day of March, 1956.

/s/ Robert E. Lambert
Robert E. Lambert

STATE OF MONTANA)
: ss.
County of Silver Bow)

On this 23rd day of March, 1956, before me, [illegible] a Notary Public in and for the State of Montana, personally [illegible] ROBERT E. LAMBERT, known to me to be the person whose name [illegible] to the within instrument, and acknowledge to [illegible] same.

IN WITNESS WHEREOF, I have hereunto set my hand and [illegible] year in this certificate first above written.

/s/ Sylvester J. Sullivan
Notary Public for the State of [illegible]
Residing at Butte, Montana
My Commission Expires Sept 29, 1957

Exhibit C

A G R E E M E N T

THIS AGREEMENT, made and entered into between UMONT MINING, INC., a corporation, hereinafter called "Umont", and IRVING G. IRVING and ROBERT H. NELSON, hereinafter called "Irving and Nelson",

W I T N E S S E T H :

Irving and Nelson are the owners or optionees of certain property commonly referred to as the Norwich property, consisting of the Norwich Claim, Survey No. 2784, and a 73.333% interest in the Little Sarah Claim, Survey No. 8095, a one-fourth (¼) interest in the Plutus lode mining claim, Survey No. 8018, and a five-thirty sixth (5/36) interest in the Anglo-Norman mining claim, Survey No. 2471, all located in Silver Bow County, Montana.

The parties hereto are desirous of working out a plan for the development of such properties and of adjoining properties to be acquired by Irving and Nelson, and for such purpose, DO THEY AGREE as follows:

1. Umont has heretofore advanced to Irving and Nelson the [illegible] sum of [illegible], [illegible], which has been expended by them in the payment of delinquent taxes on the Montana Claim, Survey No. [illegible], Irene, Survey No. [illegible], and Warm Springs, Survey No. [illegible], lode mining claims, and in acquiring a one-fourth [illegible] interest in the Anglo-Norman lode mining claim, Survey No. 2471, and concurrently herewith Umont has paid to Irving and Nelson the further sum of Nine Thousand Dollars ($9,000.00), receipt of all of which is hereby acknowledged by Irving and Nelson.

Exhibit C

2. In consideration thereof, Irving and Nelson agree to proceed promptly to attempt to do the following things:

(a) Attempt to/for approximately $2500, or less, of the $9000 purchase a one-eighth (1/8) interest in the Mapleton lode mining claim, Survey No. 995;

(b) Attempt to secure a lease and option on the fifty per cent (50%) of the Plutus lode mining claim, Survey No. 3018, held in trust by a trust company in Seattle, the option to be exercised by payment of royalties out of production; the option price to be stated but no cash payments other than royalties to be called for:

(c) Stake desireable open ground if any by lode claims in Section 10, Township 3 North, Range 8 West, expending no more than $1400 of the $9000;

(d) Attempt to quiet title on the Montana Club, Survey No. 8813, Green, Survey No. 8350, and Warm Springs, Survey No. 9481 lode claims, expending no more than $1500 of the $9000;

(e) Attempt to purchase, for no more than $2500 of the $9000, the New Jersey patented lode claim, Survey No. 8005;

(f) Attempt to quiet title on Little Sarah, Survey No. 8095, expending no more than $500 of the $9000.

3. The parties have agreed in principle upon the provisions of a management participation and option agreement, execution of which is dependent upon Knott's appraisal of the success of Irving and Nelson in carrying out the various steps above set forth. Memorandum covering principal points of such agreement is attached hereto and evidenced by the initials of the parties.

Exhibit C

4. In the event for any reason such management participation and option agreement is not entered into between the parties hereto on or before the 15th day of April, 1956, Irving and Nelson will return to Umont the unexpended or uncommitted balance of the $10,000 provided by Umont for the purposes recited above.

At the option of ~~Umont~~ Irving & Nelson, Irving and Nelson will repay to Umont, no later than ~~June 30, 1958~~ April 15, 1957, the full amount expended by Irving and Nelson in their efforts to acquire properties recited previously, or, Irving and Nelson will immediately convey to Umont by bargain and sale deed all of the properties acquired through use of the funds provided by Umont. The Norwich, the Little Sarah, Irving and Nelson's 1/4 interest in the Plutus and Irving and Nelson's 5/36 interest in the Anglo Norman lode mining claims are ~~specifically excluded from this option agreement~~ not to be included in the property to be acquired by Umont.

The total of $10,000 hereby advanced is for the exclusive purpose of obtaining the properties described under Sec. 2 and 1 of this agreement except that no more than $600 may be expended for traveling or unexpected expense in connection with Irving and Nelson's efforts to acquire the properties.

IN WITNESS WHEREOF, Umont has caused these presents to be executed by its proper officer thereunto duly authorized, and Irving and Nelson have hereunto set their hands all in duplicate this 9th day of March, 1956.

UMONT MINING INC.,

By _____

ATTEST:

_____

_____
Irving G. Irving

_____
Robert H. Nelson

dmea 2874

Robert H. Nelson

Irving G. Irving

NELSON AND IRVING

GEOLOGICAL INVESTIGATIONS
Supervision of
DEVELOPMENT - EXPLORATION

MINING CONSULTANTS
HIRBOUR BLDG. BUTTE, MONTANA
TELEPHONE 2-3445

MINE VALUATION
Counsel in
MINE MANAGEMENT

January 24, 1953

Mr. M. E. Volin,
DMEA Field Team, Region 11,
United States Department of Interior,
Defense Minerals Exploration Administration,
1201 N. Division Street, Spokane 2, Washington.

Subject: Application for Exploration Loan, on Form MF-103 (also MF-100) on Plutus Mine, near Butte, Silver Bow County, Montana. Irving G. Irving and Robert H. Nelson, 43 Hirbour Bldg. Butte, Montana. (MANGANESE)

Dear Earl:

Enclosed is our application for a DMEA exploration loan on the Plutus Mine.

The application comprises the following:

Completed MF-100 Form.✓
Completed MF-103 Form.✓
Maps---included are two sets, with two more to be mailed tomorrow.
Copy of lease.✓
Copy of letter from one of the owners, refusing to sign subordination agreement.✓
A waiver signed by Nelson and Irving.✓

You will note that only three owners are involved in the property. I own a quarter interest, with Nelson sharing equally in this. The Anaconda Copper Mining Co. owns another quarter, and the National Bank of Commerce, of Seattle is Trustee for an estate that owns the other half. You will note that the Anaconda has refused to sign subordination agreements. We have a letter in our files from the Bank in Seattle stating that they are guided by Anaconda's actions. So it would be futile to try and get them to sign. We have therefore signed the

subordination agreement in lieu of the other owners signatures, which are impossible to get.

I have spent a good deal of time on this application and hope I have included all pertinent information. However, if something has been overlooked, please advise.

As you know, we are now working at the Plutus shaft, with surface installation almost complete, power in and we have already re-timbered eight feet of the shaft. We could be down on the 225 level in a very short time, so I hope every effort will be made to speed up the processing of this application, if the project meets with preliminary approval.

Sincerely yours,

I. G. Irving.

MF-103
(Revised April 1952)

RECEIVED
BUREAU OF MINES
JAN 26 1953
SPOKANE, WASH.

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 6 1953

Not to be filled in by applicant

Dockets No. dmea 2874
Metal or Mineral
Date Received 2-6-53
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address:

Irving G. Irving and Robert H. Nelson, (a partnership)
(Plutus Mine)
84 Hirbour Bldg., Butte, Montana.

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

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

(*d*) If a partnership, add to the above statement the names and addresses of all partners. Only above two partners, no others.

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract The land to be explored consists only of the Plutus Lode Mining Claim, Survey #3018, situated near Butte, in Silver Bow County, Montana. See attached lease for further description.

(*b*) State any mine name by which the property is known. Only as Plutus Mine

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Applicants own a one-quarter interest in the claim, and have a lease on all of it.

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

(*e*) If you own the land, describe any liens or encumbrances on it The lease and all equipment on it, at this time, has been assigned, or martgaged to U.S. Govt. thru G.S.A.

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

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. See Form MF-100, attached

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

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. See map accompanying application, also MF-100

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. Very accessible, only two miles from Butte; see MF-100

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

All of the above available, power in now, men working now, crew easily expanded. Water available also. See MF-100

16—66551-1

5. *The exploration project.*—(*a*) S[illegible] the mineral or minerals for which you wis[illegible] explore manganese carbonate ores, also manganese oxidized ores.

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

(*c*) The work will start within ten days and be completed within 8 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See MF-100

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

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

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

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

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

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

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project. none

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

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

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

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

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

[X] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated 1/15/59, 195--

Irving B. Irving Jackson
(Applicant)

By Robert H. Nelson - partner

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

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

To accompany MF-103 Form filled out by Irving G. Irving and Robert H. Nelson, in connection with loan application for exploration of Plutus Mine, near Butte, Montana. Nelson and Irving's address is 43 Hirbour Bldg., Butte, Montana.

EXHIBIT B

The proposed work (see map accompanying this application) involves the following work on the Plutus 225 level, of the Plutus Mine, whose shaft is being reopened under a GSA contract which has a specific objective of its own which is the development of the veins of the adjoining Norwich Mine, as distinct from the development of the Plutus vein itself, which is the objective of this present application:

Work to be done:

1. Repair 40 feet of station on the Plutus 225 level
2. Repair 30 feet of drift---the drift west off station
3. Advance the face of the drift west, when repaired, a distance of 270 feet, making a total distance from the shaft of 300 feet.
4. Drift easterly on the Plutus vein, from the 225 station, a distance of 200 feet.
5. Do 200 feet of raising, at points to be determined later.

It is proposed to do the drifting and raising on a unit cost basis, which will include supervision, bookkeeping etc., and to estimate separately the following:

a. Station repair
b. Drift repair
c. Assaying

In addition to the above, a few items of underground equipment will have to be bought.

Estimates of the costs of the above work, plus a list of the equipment and its cost, plus other details required in Question 6, will follow. First, however, answers to other questions raised in 6.

6 b. Two miners and one top man will be required, at Butte wage scales for the better men. Engineering, geologic work and sampling will be supplied by the applicants, charging one-quarter time, at $600.00 a month. This supervisory expense is included in the unit cost, detailed below, at which the drifting and raising will be done.

6 c. The materials required are listed as cost items in the unit cost estimate detailed below.

6 d. The following equipment needed, and its estimated cost, is herewith listed:

One jackleg drill (new) and accessories at estimated total cost of	$750.00
One air tugger hoist, used	500.00
Two used mine cars	200.00
Total	$1,450.00

6 e. Rehabilitation of 40 feet of station, @$60.00/ft or at a total cost of $2,400.00

Rehabilitation of 30 feet of drift (west drift off station) at $40.00 a foot, or a total of 1,200.00
Total rehabilitation $3,600.00

No rehabilitation of equipment etc etc.

6 f. No new buildings needed.

6 g. Only item in this category required (accounting, workman's compensation, payroll taxes etc. are included in unit cost estimate) would be assaying, estimated as follows:

170 faces to be sampled, averaging two samples per face, to be assayed for Mn. and Ag., plus a few extra samples, at $2.00 per sample, or a total of $ 750.00

6 h. Contingencies included in the unit cost estimate.

The drifting and raising are estimated to cost as follows, on a linear foot basis:

Item	Per Linear Foot	
Labor for;		
Breaking	$ 8.00	
Mucking	4.44	
Timbering	4.44	
Track & Pipe	2.00	$18.88
Payroll taxes etc, @ 12.0%		2.27
Supplies		
Powder	2.50	
Caps, fuse etc	2.00	
Timber	3.30	
Track & Pipe	1.00	
Ventillation	.50	
Supervision (¼ time, Nelson & Irving	3.00	
Accounting	.25	
Power	2.00	14.55
Hoisting, top man, contingencies & Misc.	5.00	5.00
TOTAL ESTIMATED COST, per linear ft.		$40.70

Summary of Estimated Costs
of Project

(see next page)

To accompany MF-103 Form of Irving G. Irving and Robert H. Nelson, 43 Harbour Bldg., Butte, Montana.

EXHIBIT B (continued) page 3

SUMMARY OF ESTIMATED COST OF ENTIRE PROJECT

Equipment to be purchased----------	$ 1,450.00
Rehabilitation of station----------	2,400.00
Rehabilitation of drift----------	1,200.00
Assaying	750.00
Drifting & Raising (total of 670') at the estimated unit cost of $40.70 as shown----------	27,269.00
TOTAL COST	$ 33,069.00

Of the above cost, the applicants are prepared to provide $8,267.00 which is one-quarter of the sum needed, and it is requested that the government provide the balance, if the project meets with approval.

I G Irving

33069.00
- 3800.00
29469

C O P Y

To accompany DMEA Loan app. of Irving G. Irving and Robert H. Nelson, 43 Hirbour Bldg., Butte, Montana

ANACONDA COPPER MINING COMPANY

Butte, Montana

ANACONDA

F. A. Linforth
Assistant to the Vice-President

July 22, 1952

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

Dear Mr. Irving:

In accordance with your request, the following named Co-lessors hereby grant to you, as Lessee, a quartz mining lease on the Plutus Lode Claim, Survey No. 3018, located in Sections 10 and 15, Township 3 North, Range 8 West, in Silver Bow County, Montana, above a horizontal plane six hundred (600) feet vertically below the collar of the Plutus Shaft:

Anaconda Copper Mining Company, owning 1/4 interest.
The National Bank of Commerce of Seattle, Trustee, owning 1/2 interest.
Irving G. Irving of Butte, Montana, owning 1/4 interest.

This agreement shall take effect on the 1st day of August, 1952, and shall remain in full force and effect to and including the 30th day of June, 1956.

For ores of manganese which are sold as such to any agent, the royalty to be paid to the Co-lessors under this lease shall be 10% of the amount received by the Lessee, delivered at the stock pile or plant of any such agent, or delivered f.o.b. railroad cars at the most convenient loading place, after deducting therefrom the cost of freight or haulage from the mine to said stock pile, plant or loading place.

For ores of manganese which are mined hereunder but which are concentrated or beneficiated by the Lessee on the demised premises, the royalty to be paid to the Co-lessors shall be 10% of the amount received by the Lessee delivered at the stock pile of the plant or agent purchasing the concentrates or beneficiated product or delivered f.o.b. railroad cars at the most convenient loading place, after deducting therefrom the cost of freight or haulage charges from the mine to said stock pile, plant or loading place.

Payment of said royalties on manganese ores shall be made by the Lessee directly to the General Office of the Co-lessor, Anaconda Copper Mining Company, at 304 North Main Street, Butte, Montana, as trustee for the Co-lessors and said Anaconda Copper Mining Company agrees to distribute said royalties quarterly to the other Co-lessors in proportion to their respective interests as shown herein.

With the payment of said royalties on manganese ores or concentrates, the Lessee shall submit to the General Office of the Co-lessor, Anaconda Copper Mining Company, a copy of the settlement sheets showing the number of wet tons sold, the moisture content, the percentage of manganese in each lot for which settlement is made, together with a statement of the amount received for each lot.

For ores of copper, zinc, lead, silver, gold or other metals which are shipped to a mill or smelter, the royalty to be paid to the Co-lessors under this lease shall be based upon the net mill or smelter returns of all ores mined hereunder according to the following schedule:

On ores having a value of $15.00 or less per ton, 10% royalty.

On ores having a value of over $15.00 and not more than $24.99 per ton, 15% royalty.

On ores having a value of $25.00 and not more than $34.99 per ton, 20% royalty.

On ores having a value of $35.00 and not more than $49.99 per ton, 25% royalty.

On ores having a value of $50.00 or over per ton, 30% royalty.

By "net mill and smelter returns" is meant the amount received for such ores from the mill or smelter after deducting therefrom the cost of milling, smelting and freight or haulage charges from the mine to the mill or smelter.

Payment of said royalties on ores of copper, zinc, lead, silver, gold or other metals which are shipped to a mill or smelter shall be made directly to the General Office of the Co-lessor, Anaconda Copper Mining Company, at 304 North Main Street, Butte, Montana, as trustee for the Co-lessors by

the mill or smelter treating or purchasing said ores, and said Anaconda Copper Mining Company agrees to distribute said royalties quarterly to the other Co-lessors in proportion to their respective interests as shown herein.

In case the Lessee shall receive any other amounts from the sale of such ores over and above the settlement made by the mill or smelter, Lessee shall pay to the Co-lessors the same percentage of such additional receipts as specified in the above scale of royalties for the lots for which settlement is made.

With the payment of such additional royalty the Lessee shall submit to the General Office of the Co-lessor, Anaconda Copper Mining Company, at 304 North Main Street, Butte, Montana, a statement showing the lot for which the additional payment was received, together with proof of the amount of such additional payment. Said General Office will then distribute such additional royalties as aforesaid.

Failure to comply with any of the above specified procedure shall be cause for cancellation of this lease.

The Lessee shall enter at once upon the said premises and conduct the work of mining steadily and continuously and shall perform not less than fifty (50) shifts of work in the mine in each thirty (30) day period, unless prevented by causes beyond Lessee's control. All work shall be done in accordance with good mining practice.

The demised premises shall be worked separately from all other lands and all ore mined or removed therefrom shall be kept segregated from all other ore mined by the Lessee until the weight and value thereof shall be fully determined.

In the event that the Lessee shall decide to hoist ore through the Plutus shaft other than that belonging to the Plutus Claim and leased hereunder, the Co-lessors hereby grant permission to the Lessee to do so, upon the payment to the Co-lessors of ten cents (10¢) per ton of such ore hoisted, as rental for the use of the facilities owned by the Co-lessors. Such rental shall be paid monthly to the General Office of the Co-lessor, Anaconda Copper Mining Company, and distributed quarterly as aforesaid.

The Lessee shall furnish all labor, material and supplies necessary for this operation, and shall hold the Co-lessors harmless against all liens, damages, claim or liability in any way growing out of this agreement.

C O P Y

The Lessee shall observe and comply with all applicable Federal and State laws, particularly in reference to the Workmen's Compensation Act.

The Lessee shall pay all taxes which, during the term hereof, may be lawfully levied upon all structures and improvements or other property constructed or installed or used by the Lessee in connection with the rights herein granted, and shall also pay when due all net proceeds, occupation, license and output taxes, lawfully levied upon all ores or minerals extracted from said premises hereunder. Upon the payment of such taxes the Lessee shall promptly furnish the Co-lessors with satisfactory evidence of such payment.

At the termination of this lease for any cause, Lessee shall immediately surrender the premises without hindrance or delay, and a period of sixty (60) days will be allowed Lessee to remove machinery, tools or equipment which Lessee may have placed thereon.

The Lessee shall not transfer nor assign this agreement nor any interest therein without the written consent of the Co-lessors.

Notices to the Co-lessors regarding this lease shall be addressed to F. A. Linforth, Assistant to the Vice President, Anaconda Copper Mining Company, Hennessy Building, Butte, Montana, and notices to the Lessee shall be addressed to Irving G. Irving, 84 Hirbour Building, Butte, Montana.

Yours truly,

ANACONDA COPPER MINING COMPANY,

By F. A. Linforth
Assistant to the Vice President.

THE NATIONAL BANK OF COMMERCE OF SEATTLE, TRUSTEE

By R. W. Sprague
Vice President

Attest:

C. O. Omdahl
Cashier

Irving G. Irving

CO-LESSORS.

C O P Y

Mr. Irving G. Irving -- 5 July 22, 1952

The foregoing lease agreement is hereby accepted by the Lessee in accordance with the conditions and provisions contained herein.

Dated August 1, 1952.

Irving G. Irving

LESSEE.

C O P Y

To accompany DMEA app[illegible] of I. G. Irving and R. H. Nelson, Butte, [illegible]ontana

ANACONDA COPPER MINING COMPANY

Legal Department

Butte, Montana, September 7, 1951

Mr. Irving G. Irving
Hirbour Building
Butte, Montana

Dear Irving:

Since my discussion with you in July, 1951, at which time you were accompanied by Mr. M. E. Volin of the United States Department of the Interior, relative to your request that Anaconda Copper Mining Company execute a subordination agreement in connection with a Company property leased by you, concerning which you are desirous of obtaining a loan, I have received a letter from Mr. Volin containing an interpretation of the agreement, as well as other advice.

As you know, Anaconda's policy in the past has been one of refusal to sign such agreements. I have reviewed the subject with particular reference to your request, and have also discussed it with Mr. Glover. I regret to inform you that we are both of the opinion that we should adhere to our usual policy, and, therefore, under such circumstances the Company will not sign the requested subordination agreement.

Very truly yours,

J. T. Finlen

J. T. FINLEN

JTF-T

To accompany DMEA loan application on Plutus Mine, of
Irving Irving and Robert H. Nelson, 43 Hirbour Bldg.
Butte, Montana

G U A R A N T Y

In consideration of the waiver by the United States of America of the requirement of the Owner's Consent to Lien, as set forth in paragraph 2(b) of the attached Exploration Project Contract, the undersigned hereby guarantees the payment to the United States of America of royalties, as specified in said Contract and any amendments thereof, upon any and all ore discovered or developed as a result of said Contract and any amendments thereof, which is mined within 10 years from the date of said Contract, whether or not the undersigned has any interest in the property, covered by the said Contract, or any part in the mining operations at the time said ore is mined. If for any reason the net smelter returns or net amounts, from operations that would be subject, under said Contract and any amendments thereof, to such payments to the United States of America, are not available as a means of measuring the amount of such payment, then the undersigned agrees and undertakes to make such payment according to the best estimates of the amount that can reasonably be made, and in the event of dispute as to such estimate, the undersigned agrees that the determination thereof by either the Administrator of Defense Minerals Exploration Administration, or his designee, shall be final and binding upon the undersigned.

Dated 1/15/53, 1953

By Irving B. Irving (Seal)

By Robert H. Nelson (Seal)

RECEIVED
BUREAU OF MINES
JAN 2 6 1953
SPOKANE, WASH.

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA

FOR USE UNDER THE

DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No.

Date received

Irving G. Irving
and
Robert H. Nelson

(Plutus Mine)
43 Hirbour Bldg.
Butte, Montana

Name and address of applicant

Date January 15, 1953

INSTRUCTIONS

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

GENERAL TECHNICAL DATA

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

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?

   See Exhibit A, attached

2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   See Exhibit A, attached

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.

3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.

   See Exhibit A, attached

4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated. //
   (*b*) Are you operating this property as:
   ☐ Owner.
   ☒ Lessee. Applicant also owns a quarter interest in claim.
   ☐ Contractor.

5. Number of years in production No steady production, see Exhibit A.
   If not in production or operation, estimated date when production will begin May 1, 1953

6. Experience of operators:
   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.

   See Exhibit A, attached

7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

   See Exhibit A, attached.

16—63792-2

EXHIBIT A

To accompany Form MF-100, in connection with BMEA Loan Application of Irving G. Irving and Robert H. Nelson (Plutus Mine) 43 Hirbour Bldg., Butte, Montana

Detailed answers to questions raised on Form MF-100 will be found below:

The Plutus Lode is held under lease by Irving G. Irving, 43 Hirbour Bldg., Butte, Montana. While the lease is in Irving's name, Robert H. Nelson, of Helena, Montana, has a fifty percent interest in the lease also. Irving and Nelson, the applicants, are partners. See copy of lease accompanying the application.

Question 1: The chief product is expected to be manganese carbonate ore. Some manganese oxide ore, and some mixed, manganese oxide-carbonate ore will also be produced. Small amounts of silver, possibly gold and some lead and zinc may be expected as by-products.

Question 2: The property consists of one Mining Claim -- the Plutus Lode, Survey No. 3018, located on the western edge of the Butte District, Butte, Silver Bow County, Montana. It has always been known as the Plutus Claim, and a development project (for silver ore) was launched upon it about thirty years ago, under the company name of "Butte and Plutus".

The property is developed by a vertical shaft, 400 feet deep, (which is now being rehabilitated under the Norwich operation, GSA Contract #GS-10P(D)-5, and under the direction of Nelson and Irving, the applicants) and four levels, totalling approximately 1,800 feet of work. About 200 feet of this total is development work comprises:

On 125 Level:	200' of crosscutting and 200' of drifting, more or less.
On 225 Level:	A 40-ft. crosscut and a 30-ft. drift on ore.
On 400 Level:	500 feet of crosscutting and 600 feet of drifting, more or less. This work on the lowest level was done entirely on veins belonging to the adjoining Norwich claim. No work at this elevation on Plutus veins. See Maps.

Question 3: The Plutus Lode is situated about two miles west of the City of Butte, in Secs. 10 & 15, T. 3 N., R. 8 W., in Silver Bow, County, Montana.

Question 4: The Plutus Mine is now being reopened, including installation of adequate and suitable surface equipment, electric

EXHIBIT A

To accompany Form MM-100, in connection with DMEA Loan Application of Irving G. Irving and Robert H. Nelson (Plutus Mine) 45 Hibbert Bldg., Butte, Montana.

Detailed answers to questions raised on Form MM-100 will be found below:

The Plutus lode is held under lease by Irving G. Irving, 45 Hibbert Bldg., Butte, Montana. While the lease is in Irving's name, Robert H. Nelson, of Helena, Montana, has a fifty percent interest in the lease also. Irving and Nelson, the applicants, are partners. See copy of lease accompanying the application.

Question 1: The chief product is expected to be manganese carbonate ore. Some manganese oxide ore, and some mixed, manganese oxide-carbonate ore will also be produced. Small amounts of silver, possibly gold and some lead and zinc may be expected as by-products.

Question 2: The property consists of one Mining Claim -- the Plutus Lode, Survey No. 3018, located on the western edge of the Butte District, Butte, Silver Bow County, Montana. It has always been known as the Plutus Claim, and a development project (for silver ore) was launched upon it about thirty years ago, under the company name of "Butte and Plutus".

The property is developed by a vertical shaft, 400 feet deep, (which is now being rehabilitated under the Norwich operation, DSA Contract #63-100(D)-3, and under the direction of Nelson and Irving, the applicants) and four levels, totalling approximately 1,800 feet of work. About 200 feet of this total is development work comprises:

On 125 Level:	200' of crosscutting and 200' of drifting, more or less.
On 225 Level:	40-ft. crosscut and a 30-ft. drift on ore.
On 400 Level:	800 feet of crosscutting and 800 feet of drifting, more or less. This work on the lowest level was done entirely on veins belonging to the adjoining Morwich claim. No work at this elevation on Plutus veins. See map.

Question 3: The Plutus Lode is situated about two miles west of the city of Butte, in Secs. 10 & 15, T. 3 N., R. 8 W., in Silver Bow County, Montana.

Question 4: The Plutus Mine is now being reopened, including installation of adequate and suitable surface equipment, electric

To accompany loan application of Irving G. Irving and Robert H. Nelson, 43 Hirbour Bldg., Butte, Montana.

power etc., by Irving G. Irving and Robert H. Nelson, the applicants, under a GSA Contract (# GS-10P(D)-3). This program has for its objective the further development, at depth, of the Norwich Veins, that outcrop on the Norwich Claim adjoining on the north, through the Plutus shaft. This work has this specific objective and none of the money so being spent may be used for the development of the Plutus veins themselves, as distinguished from Norwich veins.

Question 5: There was apparently no period of steady or interrupted production from this property. During the period 1919-21, when it was being developed as a silver property, some few small shipments of silver ore were reported. During World War 1, a few truckloads of manganese oxide ore were carried off. In World War II, a lessee, named Tonner, shipped about 150 tons of fairly good manganese oxide ore, to the Plant of the Domestic Manganese and Development Company.

Production is expected through the Plutus shaft, under the Norwich operation now being carried out, in about 120 days.

Production from the Plutus Vein itself, as distinct from the above-described expected production, could be achieved in about 60 days from this present date (January 15, 1953) if our application for a DMEA loan is approved, without delay. Through the Norwich operation the shaft will have been reopened and repaired to the 225 level, and all surface plant installed, and it would be just a matter of repairing the 225 station, thirty feet of drift, and then advancing a face of ore, known to exist in this drift. See Maps.

Question 6: R. H. Nelson and I. G. Irving are both professional mining engineers, geologists and mine operators, with the usual university backgrounds and twenty-five years experience. They are, at present, managing and directing the operation on the adjoining Norwich claim and the rehabilitation work at the Plutus shaft itself. They would give direction and supervision to the Plutus development and exploration work that is the subject of this application.

Question 7: The previous development and exploration of the property, as briefly described above, involved sinking a 400-ft, vertical shaft, from which about 1600 feet of drifting and crosscutting was done, on three levels. There was also an adit level. The bulk of this work was done on the bottom level (400 level) exploring Norwich Vein structures (adjoining claim) for silver ore. No work was done on this level on the Plutus vein, which is about fifty feet south of the shaft and was never cut. Only a little work was done on the Plutus vein on the upper levels. On the 125 level it is obvious (see maps) that a lot of the work was off structure. On the 225 level, a thirty-foot drift discloses good manganese ore.

To accompany loan application of Irving G. Irving and Robert H. Nelson, 43 Hirbour Bldg., Butte, Montana.

This early work produced a few shipments of silver ore.

During World War II, the Tonner shaft was sunk by a lessee of that name and about 150 tons of manganese ore (oxide) that appears to have averaged about 24.0% Mn. was shipped. Good ore remains in this shaft and other nearby shallow workings. Operations, however, stopped when the government ceased to buy the ore, at the end of the war.

The Norwich Mine, adjoining on the north, produced about 9,600 tons of manganese ore averaging 24.6% Mn, most of it carbonate ore, during World War II. It is now again in production, under the management of Nelson and Irving, the applicants.

As far as production from other nearby mines is concerned, it should suffice to say that the Plutus Mine is in the Butte District, notable for its enormous production of copper, zinc, manganese, lead and other metals, and the Plutus claim itself lies only 3500 feet from one of the Anaconda's main deep shafts -- the Orphan Girl Mine -- from which mining is now going on at great depth. The Plutus, as the Norwich adjoining, is on one of Butte's big East-West Veins.

There is no available private report on the Plutus claim itself, but the general setting may be obtained (maps also) from a recent Bureau of Mines Report, entitled -- "Bureau of Mines Report of Investigations, No. 4784, by J. W. Cole, 1951, which described the adjacent Norwich claim and contains a map that shows the vein structures in the Plutus ground and shows also the relative position of the Plutus to the Norwich and the camp of Butte itself, and some of the major producing units.

Question 12: The Plutus claim is in the peripheral zone of the Butte District -- a zone particularly noted for manganese and zinc mineralization. The Butte District is too well known to be described here. A few words on the geology of the claim itself follow:

The eastern third of the Plutus claim is covered with rhyolite, probably extrusive, or, as some evidence seems to indicate, a wide, flat-dipping dike that dips to the east and would therefore be further to the east on successively lower levels. On the western two-thirds of the claim, the Plutus Vein, which is a structure 3 to 7 feet wide, is exposed in various shallow workings over a distance of about 750 feet. It appears to be very persistent and displays manganese ore at intervals along that entire length. It undoubtedly extends under the rhyolite to the east.

To accompany loan application of Irving G. Irving and Robert H. Nelson, 43 Hirbour Bldg., Butte, Montana.

The vein strikes approximately N. 73 degrees E., and dips from 65 to 80 degrees to the south. The mineralogic composition of the vein is typical of the area, and the zone, in that it displays a gangue of quartz and rhodochrosite (no rhodonite) with minor amounts (as developed to date) of pyrite, sphalerite and galena. In the upper sixty to seventy feet the manganese is present in oxidized form and the pyrite is, of course, also oxidized. Rich sulphide oreshoots could be contained in this vein as were found in remarkable richness on the Nettie and Hibernia Claims just a few hundred yards to the south. A small amount of gold and silver occurs, but the latter often is found in rich oreshoots in this area also. The wall rock is granite, grano-aplite, and some distinct aplite dikes are found. North-south faulting occurs and produces small offsets, which present no particular problem.

Customary to give the engineer's name

The property (both the surface and the underground workings) was ~~were~~ fortunately mapped by a well known Butte geologist and his notes and some sampling were available. This information, known to be reliable, has been transferred to the map that accompanys this application. Records were also available of the geology and the production of the Tonner shaft, about 150 feet to the east of the Plutus shaft and this information, plus some samples cut by the applicants has also been put on the map that accompanys this application.

When the maps are studied it will be seen that much of the work on the 125 level was off the structure, and there is therefore a reasonable basis for assuming that the good ore, shown in the Tonner shaft above, and in other surface workings, extends below. Likewise, when the maps are examined, it will be noted that the drift on the Plutus 225 level shows good manganese carbonate ore throughout, with a sample, six feet back from the face showing 4.3 feet of material that assays 26.4% Mn, and the face estimated to run 20% Mn. It will be noted that the total vein width here is over seven feet, but three feet of it was not assayed for manganese. Information is also had, from this same source, that the Plutus vein crosses the Plutus shaft, 300 feet below the collar, and is reported to be eleven feet wide, but no assays were taken at the time (1921) for manganese. It is not only reasonable to assume that this vein, where it cuts the shaft would be manganese ore, with good ore in the level only seventy-five feet above, but also that the ore shown in the 225 drift undoubtedly extends above this level, and is probably in the walls of the 125 workings, which as stated before are apparently off structure.

All of the above relationships are shown on a longitudinal section that accompanys this application. On this section also, are shown calculations of "Prospective Ore". In these calculations, and the blocks outlined, the entire vein area encompassed by the work proposed is taken and the amount of "Prospective

COPY

400

GENERAL SERVICES ADMINISTRATION

Washington 25, D. C.

August 31, 1953

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

Re: Docket No. DMEA-2874

Dear Mr. Mittendorf:

This is in reply to your letter of August 26 informing us of your inclination to enter into an exploration contract with Irving G. Irving and Robert H. Nelson, affecting the Plutus Lode Mining Claim, Silver Bow County, Montana, provided this Administration subordinates its mortgage covering production from the Plutus Claim to your claim for a percentage royalty on such production as may result from the exploration.

This Administration's mortgage was given to secure advances amounting to $89,900 which possibly may be increased to approximately $106,000, and such mortgage covers the equipment acquired with Government advances and the interests of the parties in the Plutus Claim and the Norwich Claim. The proposed exploration described in your letter is wholly apart from the operations designed to liquidate the advance made by this Administration.

Based upon Geological Survey reports, there is no more than enough ore in the Norwich Claim to liquidate the advances made to date by this Administration, and certainly not enough to assure liquidation of the additional sum which we have been asked to advance in order to complete the work commenced with the original advances. Accordingly, we regret that we cannot subordinate the mortgage covering the Plutus Mine and the claim of the Administration for repayment based on Plutus production.

The five copies of draft of proposed exploration contract transmitted with your letter are returned.

Sincerely yours,

/s/ E. F. Mansure

Edmund F. Mansure
Administrator

Enclosures

EXHIBIT A
Supplement to Form M

To accompany loan application of Irving G. Irving and Rober
43 Hirbour Bldg., Butte, Montana.

Ore" thought probable is arrived at by using large waste factors. The waste factor used varies from 50% to 75%. With such discounting, a total tonnage of ore to be revealed of 27,350 tons is thought probable. To this material an average grade of 21.0% manganese is assigned.

Question 17: The headframe and most of the surface buildings have been completed at this writing. Electric power is in. And eighty feet of shaft has already been rehabilitated.

The main essential equipment for the surface plant has already been purchased, and in its main elements consists of:

One Imperial X, 800-cu. ft. Ingersoll Rand Compressor, equipped with a 125 HP. motor.

One small 15 HP. electric hoist for the preliminary rehabilitation of the shaft.

One 50 HP. single drum electric hoist, for the ultimate hoisting of ore.

Transformers, lighting equipment and various switches, panel boxes and other electrical accessories.

The pump has not been bought yet, but one is being rented to use for a period to determine the amount of water to be encountered.

It must be noted, however, that all of the above equipment, and any more equipment to be purchased with the exception of the equipment specifically listed, in Form MF-103, to be used in doing the actual underground work on the Plutus Vein, is already hypothecated to the General Services Administration, in connection with the Norwich project now started and being carried out through the Plutus shaft.

Project Summary Report

By: F. M. Murphy August 7, 1959

1. Docket No. DMEA-2874 (Manganese)
   Amended Contract No. Idm-E604
   Original Operator: Irving G. Irving & Robert H. Nelson
   84 Hirbour Building
   Butte, Montana

   Assignee: Umont Mining, Inc.
   912 Kearns Building
   Salt Lake City, Utah

   Operator's Property Rights - Lease from Anaconda Copper Mining Co. ($\frac{1}{4}$ owner); National Bank of Commerce of Seattle, Trustee, ($\frac{1}{2}$ owner); and I. G. Irving and R. H. Nelson ($\frac{1}{4}$ owner) on Plutus Patented Lode Mining Claim, Survey No. 3018, above a horizontal plane 600 feet below the collar of Plutus shaft; and owner of Norwich Patented Quartz Lode Mining Claim, Survey No. 2794, Lot No. 590, which was subordinated in the amended contract,
   The claims are situate in secs. 10 and 15, T. 3 N., R. 8 W., M. P. M., Silver Bow County, Montana.

2. Original Contract, dated September 21, 1953
   Amended Contract, executed September 19, 1956
   Contract assigned to Umont Mining, Inc., September 26, 1956

   Amendments:

   No. 1, January 6, 1954, drifting on 200 level was reduced from 470 to 286.4 feet; added the difference (183.6 feet) to east drift on 275 level; decreased raising from 200 feet to 80 feet and provided that funds for the 120 feet difference would be used for shaft rehabilitation below the 244 level and a station crosscut on the new 275 level.

   No. 2, April 6, 1954, deleted west drift on 200 level and replaced it with 15 feet of crosscut and 210.6 feet of drifting on 244 level.

   No. 3, August 2, 1954, extended completion date to November 21, 1954.

   No. 4, November 23, 1954, extended completion date to September 21, 1955.

Amendments:

No. 5, May 12, 1955, added to Amendment No. 2: drift west 44.4 feet on the Plutus vein on 200 level.

No. 6, May 25, 1955, changed 15 feet crosscutting to 15 feet of drifting on 244 level.

No. 7, September 29, 1955, extended completion date to December 31, 1955, and increased royalty period to 11 years.

Amended Contract, effective date of original contract, executed on September 19, 1956, provided for additional work and designated as Stages II and III. Work completed under original contract was designated as Stage I. The contract amount was raised from $25,830.00 to $106,010.70 with completion date December 31, 1957. under Article 10(c) royalty period is extended to 13 years S.I.R.

Amendments:

No. 1, March 1, 1957, added 500 feet of diamond drilling on 400 level east drift, and increased total cost to $108,510.70.

No. 2, June 21, 1957, allowed EX size drilling for AX size when drilling conditions warramted.

Contract terminated by mutual agreement effective August 31, 1957.

Work Authorized and Completed:

Item Stage I	Units Authorized	Units Completed	Agreed Unit Cost	Total Cost
Drifting	470 ft.	467	$34.00	$15,878.00
Timbering	470 ft.	454.9	5.00	2,274.50
Raising	80 ft.	72	35.00	2,520.00
Assays, Mn. & Ag.	249 samples	67	2.00	134.00
Rehabilitate shaft	56 ft.	36.5	35.00	1,277.50
Cutting station	1300 cu. ft.	892.5	1.24	1,106.70
	Total Accepted Cost Stage I			$23,190.70

Stage II

Install facilities and pumping equipment 300 level, Plutus shaft	Job	Job	$2,082.00	$ 2,082.00
Rehabilitate Plutus shaft	Job	Job	3,148.00	3,148.00
Rehabilitate 400 level station	3,200 cu. ft.	3,200	0.50	1,600.00
Rehabilitate X cut to Norwich vein	240 ft.	200	20.50	4,100.00
Drifting	550 ft.	394	32.00	12,608.00
Timbering	550 ft.	371	10.00	3,710.00
Extra sets in heavy ground	100 ft.	None	8.00	---
Spiling	50 ft.	20	30.00	600.00
AX diamond drilling (Underground)	420 ft.	15	5.00	75.00
EX diamond drilling (Underground)	71.5 ft.	71.5	4.75	339.63
Assays, Mn, & Ag.	140 samples	61	3.50	213.50
Total Accepted Cost Stage II				$28,476.13

Stage III

Bulldozing	15 hrs.	7.5	$14.00	$ 105.00
Diamond drilling (Surface)	1700 ft.	1138	6.00	6,828.00
Cementing & redrilling, or reaming and casing	300 ft.	300	2.50	750.00
Assays	120 samples		None	---
Total Accepted Cost Stage III				$ 7,683.00
Total Accepted Cost of Project				$59,349.83
Government Participation @ 75%				$44,512.39

3. Certification issued August 9, 1956

Manganese ore subject to royalty	23,351 L.D.T.
Net value	$571,368.71
Royalty paid	$ 28,533.15
Average grade of ore sold	22.4% Mn.

4. Audit Report of Review: May 8, 1958

(Operator did not claim all costs prior to review; however, claim was made within 120 days).

Total Costs Claimed by Operator	$ 59,349.83
Exceptions	None
Government Participation @ 75%	$ 44,512.39

5. Final Reports:

Operator's: Received April 28, 1958. The report is considered acceptable by the Government.

Field Teams: Received July 9, 1959.

Excerpts from joint final geologic and engineering report by W. C. Prinz, USGS, and W. M. Romischer, USBM:

The Norwich and Plutus claims are in a peripheral silver-manganese zone about 3½ miles west of the central copper zone at Butte.

Prior to the contract the Norwich footwall vein was known to contain good manganese ore. The Plutus vein, essentially parallel to the Norwich vein had been traced on the surface for 1000 feet and had yielded a small amount of manganese oxide ore from shallow workings.

The project work was designed to explore the Plutus vein at depth from the Plutus shaft, and for manganese ore east of the principal ore shoot on the Norwich footwall vein.

Under Stage I the following work was completed on the Plutus vein:

1. Plutus shaft rehabilitated to the 400 level.
2. Drifting and raising:

200 level

West drift	- 44.4'	-	10' good ore
East drift	- 16.4'	-	low grade ore
East drift raise	- 72.0'	-	60' good ore

244 level

West drift	- 222.6'	-	37' of ore (about 2' width), too narrow to mine

275 level

East drift	- 183.6'	-	good ore but too narrow to mine

Under Stage II the following work was completed on the 400 level Norwich footwall vein:

West drift - 150' - marginal ore
East drift - 244' - marginal ore

From the face of east drift a diamond drill hole was drilled 86.5' on a bearing of N 45° E. No ore was cut by the hole.

Under Stage III three holes were diamond drilled from the surface on the Pluto claim. The holes were drilled to determine the thickness of volcanic rocks exposed on the surface and to explore for any east-west-trending manganese-bearing veins that might be covered by the volcanic rocks.

The holes cut the Plutus and Norwich veins; none of the holes penetrated ore of minable width. However, the results cannot be considered as conclusive, since in this area the ore occurs in lenses separated by barren stretches of vein matter.

Underground exploration to the east under Stage III was dependent on the drilling results. The Operator was unwilling to advance the east face as it considered the information obtained from the surface drilling indicated large quantities of water in the vicinity of the holes. Therefore, the contract was terminated.

Comments:

The work was performed satisfactorily. At times the available facilities were not adequate to handle exploration and mine production simultaneously.

The work completed on the Norwich footwall vein encountered significant amounts of manganese-bearing material, most of it of marginal grade. However, the Operator was able to raise and do considerable stoping on the 400 level above the east drift sill.

The field examiners note that additional exploration, by diamond drilling on the Norwich vein with a few check holes through the Plutus vein, appears to be warranted.

The Operator's estimate of ore reserves are:

8915 tons @ 17. % Mn.
9220 tons @ 7.6% Mn.

Stockpiled on surface: 2064 tons @ 8.5% Mn. The ore reserves are just above and below the 400 level east and west drifts.

Mining operations were suspended on March 6, 1958. The last royalty was received on March 28, 1958, for Lots 180-181 Raise.

F M Murphy
F. M. Murphy

☒ Audited

☒ Certified

WORK ANALYSIS SHEET - DMEA PROJECT

Analysis as of 8/11/59
Incl. Voucher for Aug. 1957

☐ Actual Cost

☒ Agreed Unit Costs

Name Vimont Mining, Inc. (Assignee)

Docket No. 2874

State Montana

Silver Bow County

Commodity Manganese

Idm-E No. 604

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	Accepted NET COST
Drifting & Crosscutting	1667'	$72,952	861'	35071	35,070.50
Raising	72'	2,520	72'	2520	2,520.00
Shafts					
Winzes					
(Diamond) Drilling (Specify) Underground core	840'	4200	66.5'	414	414.63
(Specify) Surface core	2200'	13450	1138'	7578	7578.00
Surface Excavation					
Underground Excavation		1106		1106	1106.70
Roads and Trails		210		105	105.00
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation		13028		12207	12207.50
New Building, Improvements, etc.					
Other (Specify) Assaying Mn		1044		348	347.50
Totals		$108,510 [1]		$59,349 [1]	$59,349.83

[1] Rounded

Prepared by F M Murphy

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NORWICH MINE
Hirbour Building
BUTTE, MONTANA

May 25, 1954

REPORT ON THE NORWICH MINE

(Foreword:

There is not available to us any disinterested third party's report on the Norwich property. Both of the partners in this venture are established, consulting mining geologists and engineers, each having more than 25 years actual and constructive experience in mining. As a matter of practice both partners consult constantly with other geologists, engineers, mine superintendents of the district as well as a host of metallurgists all of whom are familiar with our operation and similar operations in Butte. Factual, demonstrable data acquired in the course of the Norwich development, together with composite opinions of our contemporaries color our thinking and influence our conclusions regarding the merits of our property. So far as is humanly possible we try to avoid deluding ourselves. We try, in the report following to tell about the Norwich as we would any property in which we had no financial interest.)

I LOCATION

The Norwich Mining property is located in Secs. 10 and 15, T. 3 N., R 8 W., Silver Bow Co., Montana. This is less than 3 miles from the business center of Butte, less than 3/4 miles from Anaconda's Orphan Girl Mine and deep working shaft, about a mile from Anaconda's Anselmo mine, less than 1500 feet from Anaconda's Nettie Hibernia mine. The property is also less than 3 miles, over pavement or improved gravel road, from the site of the Government Stockpile purchase depot. One of the Montana Power high tension lines crosses the property as well as one of the main natural gas lines leading to Butte.

II GEOLOGY

Butte has produced more than 3 billion dollars worth of metal from mineral deposits found in veins or stockworks enclosed in a monzonitic type of rock. The main Butte camp, owned and operated largely by Anaconda, consists of a block of ground roughly 2½ miles long (in and east-west direction) and 1½ miles in a north-south direction. Within this block mining operations a mile below the surface are presently being conducted, and it is estimated that if mining continues at the rate of 25,000 tons a day the known deposits of Butte will not be exhausted within a century.

The veins in the Butte district are broadly classified as of two types: the "East-Westers" and the "Northwesters". Many of the veins can be traced without interruption for several thousand feet along the surface and the vein structures persist in depth to the deepest points explored to date. Mineral deposition within the veins appears to follow a zonal

pattern. Copper ores predominate in the central zone, zinc ores in the intermediate zone, while silver and manganese ores are found principally in the peripheral zone.

The Norwich and Little Sarah claims cover the apex of a characteristic, large "East-West" Butte vein. The vein structure can be traced west of the Little Sarah for at least 4,000 feet. To the east along the strike the vein is hidden on the surface by post mineral rhyolite flowrock.

Development has shown that the Norwich vein is a structure from 40 to 100 feet between hangingwall and footwall. Along both the hangingwall and footwall a comparatively high grade concentration of rhodochrosite (manganese carbonate) is found. For convenience these zones of concentration are referred to as "the hangingwall vein" and "the footwall vein."

The vein structure dips south about 55°.

The so called oreshoots consist principally of quartz and rhodochrosite, usually from 4 to 15 feet wide, and extending in strike length for several hundred feet. These deposits are valuable primarily for their manganese content, but all ore to date has carried a few ounces of silver which enchances the value of the ore by several dollars.

Parallel with, but south of the Norwich vein is the Plutus vein. The Plutus vein has been traced on the surface for about 1500 feet, and the outcrop is marked by a persistent manganese content in the vein.

Both the Norwich and Plutus veins exhibit the usual geologic characteristics of other typical major veins in the Butte peripheral zone.

Butte geologists believe that rhodochrosite ore may extend in depth to a point at least 1,000 feet below the surface. Thereafter, for several thousand feet increasing amounts of lead and zinc may be expected to occur with the rhodochrosite.

III MINE DEVELOPMENT

The Norwich and Plutus vein structures have been developed by shaft sinking and lateral work from the shafts.

The Norwich vein was first developed in World War II by sinking an inclined shaft (The Lavelle shaft) 170 feet and drifting on the vein at 3 levels from this shaft. During that time about 9600 tons of manganese ore averaging 24.6% Mn and 5.0 ounces silver was produced. (On today's market that ore would have a gross value of more than $300,000.) Irving and Nelson rehabilitated the shaft and thereafter mined about 1,000 tons of high grade manganese. The shaft was also been extended to a point about 230 feet below the collar, and when development has been completed the Lavelle shaft will serve as a second entry into the mine.

At 180 feet east of the Lavelle shaft a new shaft 120 feet deep was sunk. From this new shaft about $26,000 worth of ore was produced and considerable low grade material remains to be mined.

The Plutus shaft is about 600 feet south of the Lavelle shaft. Irving and Nelson completely rehabilitated the vertical Plutus shaft to a point 275 feet below the shaft collar. The shaft is open to the old "400" level.

At a point 245 feet below the collar of the Plutus shaft a station was made, and from that level a crosscut was run northerly, 450 feet to intersect the downward extension of the Norwich footwall vein.

Since Jan. 1, 285 feet of drift west on the footwall vein has exposed continuous mineralization. From this drifting 890 tons of development ore averaging 16.7% Mn and 3.3 oz. Ag have been shipped. Approximately 80' feet of drifting west still remains to be done to reach the west end line of the Norwich claim.

At a point about 320 feet from the Plutus shaft the crosscut exposed the "Hangingwall Vein." The mineralization is about 4.5' wide and averages about 15% manganese where cut. (A D.M.E.A. contract has been approved for about 375 feet of drifting on the structure on the 244 level.)

The Plutus vein crosses the Plutus shaft at a point 250 feet below the collar of the shaft. A D.M.E.A. exploration contract has been approved to explore the vein for a distance of about 500 feet. Some mining has also been conducted on the structure, but the ore exposed to date ranges from 15 to 25% Mn in grade. Shipments to date have averaged 15.6% Mn. Further work has been deferred until facilities are available to realize fully on the basic value of 15% manganese material.

The Plutus Shaft was sunk in 1920 in a search for rich silver ores similar to those found in the Nettie-Hibernia Mine a thousand feet south of the Plutus. The Plutus shaft was sunk to the 400 level and thereafter a crosscut was run North about 170 feet to the Norwich vein. No "silver" ore was found, but the Norwich vein, where cut, was mapped by a competent geologist as being a vein 15' wide, half manganese-half quartz (possibly 15-25% Mn rock.) The project was abandoned but the old work clearly demonstrates the continuity of the Norwich vein and the grade and character of the vein at substantial depths. The water level, at present is 305 feet below the collar of the Plutus, but shaft soundings show that the shaft is open and apparently in good shape to the 400.

IV MINE EQUIPMENT

The mine is presently equipped to handle about 100 tons of ore per 8 hour shift. Electricity is supplied at the shaft collar by Montana Power at 2200 volts. At present there is a connected load of about 300 h.p. Any quantity of electricity is available.

Compressed air is supplied by an I. R. Imperial 10 V-belt drive 880 cu. ft. compressor with a 40 H.P. air cooled I.R. 220 cu. ft. compressor as auxiliary air. The mine is serviced by a single drum 55 H.P. hoist with

rope speed of 360 ft. min. Two Eimco 12B mucking machines service the development work on the sills. Tramming is done with a Gardner Denver air trammer. Drilling is done mainly with one of 3 jacklegs although drifters, stoppers and jackhammers are available at the mine. Pumping is done by a 15 H.P. Lancaster submersible pumping into a surge tank which automatically discharges to the surface by a 20 H.P. I.R. pump. Ventillation is supplied by a 20 H.P. 5000 cu. ft. Westinghouse fan at the collar of the Plutus shaft. A natural circulation of air will be effected by July 1st.

V. ORE RESERVES

By definition, in this report, "ore" is material containing sufficient quantities of manganese and silver to permit mining at a profit. Operations at the Norwich indicate that rock extraction costs about $10 a ton. Consequently material containing values exceeding probable costs is classified as ore. The mining cut off should be at $12 a ton gross return. Material returning less than $12 is waste -- over $12 ore.

Any engineer calculating the ore reserves of any mine will be guided by many variables among them being, the nature of ore deposition in the area under consideration, continuity of mineralization to be expected, cost of extraction and treatment for sale of end product, as well as certain more or less empirical rules which arbitrarily classify available material into various categories.

Both Irving and Nelson are Anaconda trained geologists whose duties, among other things, were the calculation of ore reserves in the operating mines of Butte. The Norwich-Plutus ore reserves are calculated consonant with the accepted practices of Butte.

The ore in the Butte veins is usually found in ground that is comparatively soft. Ore extraction follows closely the sill development of various blocks. Actual "ore reserve" tonnages, in the restricted use of the phrase "reserve" is amazingly small. Seldom is more than a year's supply of ore blocked out.

To offset these small reserves, a procedure is followed by the operators whereby actual development precedes ore extraction at a rate so designed that a ton of "new" ore is developed for each ton of ore actually extracted. This "ton-for-ton" program under the direction of the geological department has maintained the life of the individual mines for more than fifty years. The ton-for-ton system obviously works in a camp where no major vein has, to date, been worked to exhaustion.

The Norwich's two veins and Plutus vein, similar in every respect to any of the other large veins of the peripheral zone, will permit a sustained mining program conducted on the Butte ton-for-ton system of operation.

At this time (May 20, 1954) the drifting on the 244 level on the Norwich footwall vein has developed 24,065 tons of 17.7% Mn with 3.3 oz. silver per ton. This figure included 8,630 tons of ore with calculated assay value of 22.0% Mn and 4.9 oz. silver. Ton-for-ton development in the drifting west on the footwall vein is developing ore above the sill at the rate of about 100 tons of plus 20% Mn for each linear foot of advance.

Work has commenced on the development of the hangingwall Norwich vein by drifting on the ore on the 244 level. (This work is being done under a D.M.E.A.contract.)

At the present time this work will develop ore by subtracting from the "inferred" classification and adding to the "Reserve" and "probable" classification.

Summarized we believe the probabilities of the property substantially exceed the following:

(a) Measured and probable:

48.870 tons of 18.1% Mn and 3.4 oz. Ag
(Gross value if shipped about $985,000.00)

(b) Inferred:

168,350 tons of 13.7% Mn and 1.6 oz Ag.
(Gross value if shipped without beneficiation about $1,900,000.00)
(Returns to be expected if milled and concentrates shipped about $2,750,000.00)

The above estimates are for the Norwich "footwall" and "hangingwall" veins above the 400 level to the surface. If the development were carried to the 1000 foot level (comparatively shallow depths for the Butte camp) ore reserves exceeding one million tons could probably be developed by such new work.

Also, no consideration is given to possibly 35,000 tons of about 15% ore which might be developed by a ton-for-ton on the Plutus vein.

VI METALLURGICAL TESTS

Although as early as 1927 Butte rhodochrosite ores were utilized for their manganese content, it was not until 1940 when Anaconda built a 1500 ton flotation mill to treat manganese ore alone, that Butte manganese really became a big item in National Defense.

Prior to the erection of the Anaconda mill, exhaustive beneficiation tests were conducted. Gravity tests were run, leaching was investigated, and finally all flotation was decided upon at Anaconda. Twelve to 20% heads uniformly concentrate into a 35% product with a 1.5 to 2% final tail. Separate silver-lead and zinc concentrates also are made.

In Philipsburg, Montana battery manganese has been made for years by jigging, tabling electrostatic or magnetic separation and other time tested processes.

About 1950 exhaustive tests were made on Butte ores by various sink-float methods, and although good recoveries can be effected in most cases by sink-float, simple gravity concentration on one hand may give a cleaner product with very good recoveries --and on the other hand flotation gives excellent recoveries and also permits the selective removal of other accompanying minerals.

In 1954 the U. S. Bureau of Mines conducted sink-float tests on the Norwich and Plutus ores. On the Plutus ores a 72.5% recovery into a plus 31% manganese product was made. On Norwich ores, and using a different specific gravity media a 65.3% recovery into a 26.1% manganese product was indicated. Fines from the sink-float tests demonstrated the amenability of the ore to treatment by jigs and tables.

Individual discussion of the preliminary results with 8 competent metallurgists lead to the concensus that serious consideration of sink-float is not warranted at this time. Flotation could be expected to give a better overall recovery, but a flotation concentrate is not acceptable by the Government for stockpile purchase except by special arrangement. Simple gravity concentration by means of tables (possibly with jigs) historically promises to give recoveries from an estimated low of 70% to a possible high of 85% into a product acceptable by the Government under the Stockpile purchase program.

VII MARKETING

Federal legislation has been enacted which provides for the accumulation for National Defense of various strategic metals, including manganese. Several programs are now in effect to accomplish the requirements of the act. As an example: The Butte-Philipsburg area has been allocated the production of 6 million units of manganese (300,000 tons of 20% manganese ore). This production must come from new producers (Anaconda does not qualify because it is not a new producer. The Norwich does qualify.) Over and above the expected production from new mines, a national acquisition program calling for the accumulation of 19 million units is in effect.

Insofar as the United States imports 96% of its manganese requirements it is apparent that domestic manganese production will be given federal stimulous and protection for years to come.

Irving and Nelson have contracted with the Government for delivery of 30,000 tons of ore. Ore is defined as that material meeting certain Federal specifications. The grade may vary from a low of 12% manganese and up. Natural concentrates, or table and jig products are as acceptable as crude ore.

By milling it appears that the Norwich will be able to utilize, profitably the large tonnages of lower grade ore known to be present in the vein. Under their contract they can deliver, not 30,000 tons of higher grade rock, but can actually mine, mill and sell the concentrates from possibly 70,000 tons of ore during the life of their contract above.

Irving and Nelson are of the belief that there will be a sustained market for domestically produced manganese for the foreseeable future.

VIII ECONOMIC CONSIDERATIONS

The Norwich Mine has now blocked out for immediate mining a hard core of "ore reserve" of at least 9,000 tons of plus 22% Mn with 6 oz. Ag. (Gross value approximately $29.00 per ton.) Sill development is increasing this hard core of reserve at the rate of 100 tons plus per linear foot of development on the 244 level west. When the sill is completed at least 30,000 tons of "high grade" should have been developed on the level.

In addition to the hard core of ore reserve a large tonnage of lower grade manganese material is developed, exposed or indicated. Most of this lower grade material is susceptible to beneficiation so that it, too, can be considered as a large asset of the property.

Mining extraction costs may vary at the property from a low of $8.00 a ton to an upper limit of possibly $12.00 a ton. $9.00 appears to be a reasonable average at present. Translated into manganese content plus 15% material appears to be ore of shipping grade. Usually it costs as much to mine a ton of 10% manganese material as it does a ton of 25% manganese ore. However, the profit will range from zero (or minus) to possibly $20 a ton.

There is enough ore reserve now being developed to assure a profitable operation from the plus 20% manganese ore. A much greater profit appears to be indicated if consideration is given to utilizing the plus 12% manganese also present.

These additional profit possibilities are suggested by the following example which is based on metallurgist's conservative estimates:

15% manganese ore, if shipped without beneficiation will return $11.43 a ton or $0.76 a unit of contained manganese.

However if this same 15% manganese ore is milled, and a 70% recovery is made into a 31% manganese product, that product will sell at $1.65 a unit.

15 units x .7 = 10.5 units
@ $1.65 per unit (See Govt. regulations)
$17.32 - gross value of ore if milled
11.43 - gross value of ore if shipped direct
$ 5.89 Difference in value per ton of crude ore if shipped as compared with Milling. (No consideration given to the silver in this example)

We realize this simple example is subject to many controllable variables, but the principle remains the same and the conclusion reached is constant.

By milling, a large tonnage of presently available "break even" rock becomes ore that, in itself, will return a handsome profit.

From all information available concerning the mine we are of the opinion that, with adequate milling facilities together with a ton-for-ton program the mine would sustain a 300-500 ton a day production for many years.

The analysis is so compelling that ways and means are now being considered to take the next step in the logical growth of the property -- the erection of a mill. We are convinced the step is warranted.

Respectfully submitted,

/s/ Irving G. Irving
Irving G. Irving

/s/ Robert H. Nelson
Robert H. Nelson

400

Docket
Surname

Martin
Selfridge
Johnson
Rittenday

MAY 2 4 1954

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 2874 - Manganese
Irving G. Irving & Robert H. Nelson
Platinum and Metallic minerals
Silver Bow County, Montana
Contract No. 14-2044

Dear Mr. Weissenborn:

Enclosed are the original and five copies of Amendment No. 3 to the subject contract signed by the Administrator for the Government.

If the terms and conditions of this proposed amendment are satisfactory to you and the Operator, all six copies should be signed and the usual distribution made.

If any part of this amendment does not have either your approval or that of the Operator, the original and all copies of the proposed amendment are to be returned to this office, together with the recommended changes for consideration.

Please note that this amendment embodies all prior changes in the program made by Amendments 1 and 2.

The Operator's attention also should be called to the [redacted] that no part of the production from the Norwich claim in [redacted] that on which the Government's percentage royalty will b[redacted]

Sincerely yo[redacted]

Geo[redacted] (2HB)

[redacted] Committee

P.S.

Please note that Operator is required to obtain an extension of his lease within 60 days from date of amendment. Failure to do so will be a breach of the contract.

Enclosures

APPROVED:

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

Philip W. Guild
Member, Geological Survey (2HB)

[redacted] ifoe

[redacted] to: Admr. Reading File
Operating Comm.
Docket
FT. Reg. 2
Gilbert DeHuff, USBM
Louis Favilides, USGS.
Code 400

140

FILE COPY
SURNAME:

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

Phelps
Harris

May 14, 1954

Memorandum

To: ~~Chief, Iron and Ferro-Alloys Division~~ Administrator
Through: W S Martin

From: Acting Assistant Solicitor, DMEA

Subject: Docket No. DMEA-2874, Contract Idm-E604 - Manganese, Irving G. Irving and Robert H. Nelson

There is attached in satisfactory legal form an Amendment No. 3 to the subject contract. However, the Administrator's letter to the Operator, dated May 3, stated that there was no evidence here that the Lease and Option dated July 30, 1949, terminating August 17, 1954, had been extended to June 30, 1956, as represented by the Operator and that in any event it would be necessary to have Owners' Consents to Lien covering the Norwich mine. With a letter dated May 8 the Operator enclosed a photostat of an extension of lease to June 30, 1956. The letter also stated that Owners' Consents to Lien were not available but that in lieu thereof the Operator might be able to get the lease extended to June 30, 1958. This might take several months and, therefore, the Operator requests waiver of a further extension and of the Owners' Consents to Lien. The Amendment has been drafted (see paragraph No. 1) with the proposition that the Operator would be required to obtain a further extension of the lease. Whether the Owners' Consents to Lien should be waived is for administrative determination.

It is pointed out that a new royalty annex has been incorporated into the Amendment which eliminates the necessity for any personal guaranty of the Operator.

J. L. Hofflund

HCRubin/emd
Copy to: Docket
~~Adm. R. File~~
J. L. Hofflund
H. C. Rubin
chron.
pending

Acting Assistant Solicitor

Attachments

W. S. Martin

ROBERT H. NELSON

IRVING G. IRVING

NORWICH MINE

HIRBOUR BUILDING

BUTTE, MONTANA

Defense Minerals
RECEIVED
MAY 10 1954

May 8, 1954

attachments to 400

Mr. C. O. Mittendorf, Administrator,
Defense Minerals Exploration Administration,
Washington 25, D. C..

Re: Docket No. DMEA-2874-Manganese
Plutus Mine
Silver Bow County, Montana.
Contract No. Idm-E604

Dear Mr. Mittendorf:

I have your letter of May third and am happy to hear that my application of recent date is being processed. We are very anxious to get started on this most worthy piece of exploration work as soon as possible.

I note that we must have an Owners Consent to Lien, however, and this, I am afraid, is not possible. I say this because the GSA requested this when we got our advance from them two years ago, and we were not able to get it at that time. The GSA waived this requirement and we got the money to go ahead.

I am enclosing a photostatic copy of our extension to the Norwich Lease, however, and this will show that we have the property under lease and option until June 30, 1956. This is a period of approximately 26 months. Would it not be possible to regard this as a long enough time to justify the grant of aid requested. To support this, I wish to point out that we are approaching a production of 1000 tons a month and will hit this figure in June. On this basis we will have paid off the balance of the option price on the Norwich Claim (at a 12½% royalty on an average grade of ore estimated at $25.00 a ton) before the lease runs out. We have already paid off about ten thousand dollars on it, and the mining of only about 13,000 tons of ore will complete the purchase. Recent figures sent in to Washington, and Spokane, show an ore reserve very much in excess of this figure. As I understand it, McNabb's calculations (Bureau of Mines) show approximately 30,000 tons of good ore in the Measured and Indicated class, within a total indicated reserve (including Inferred Ore) of about 80,000 tons. It is perfectly obvious that we are going to mine enough ore to take care of the purchase of the property, before June 30, 1956 and if this proves to be the case, we will be the owners of the property.

The only thing that I might be able to do is get the lease extended to June 30, 1958, but this might take several months

time and considerable expense, because the owners are scattered and quite numerous, and probably several would have to be called on personally. Also, there have been some deaths and new heirs and this complicates it somewhat.

In view of the above, and the fact that we are awfully anxious to get started right away, is it not possible to consider our position in the set-up safe enough to justify waiving the Owners Consent, or an Extension of the Lease? Would be most appreciative if this could be done.

We are under way--getting into good production and we have absolutely no question in our minds about picking up the property via the royalty route before our lease expires. If we cant mine 13,000 tons of ore during the next twenty-six months we ought to quit.

Could we have an early reply to this request?

Sincerely yours,

I. G. Irving

I. G. Irving

P. S. Another factor that might be mentioned is that we own one quarter of the Plutus Claim, and lease the balance until June 30, 1959, and this is the main working shaft, in fact the only opening that Norwich ore from present working levels can be taken out through, and it seems to us that this puts us in a very strong position to see to it that a lease on the whole set up would be given to us again later if we had to go after it.

AGREEMENT EXTENDING AND AMENDING LEASE AND OPTION

THIS AGREEMENT, made this 21st day of August, 1952, by and between KAY S. LOWRY, ANNE LOWRY MILBURN, ALICE L. PIGOT, CARRIE L. BROPHY and MARGARET L. WEIRICH, the heirs of Thomas M. Lowry, Deceased, and TED WOODWARD and MAE WOODWARD, his wife, WILLIAM A. GOODALL and MARY E. GOODALL, his wife, and HERBERT A. B. GOODALL and VIVIAN GOODALL, his wife, the heirs of William Woodward, Deceased, PARTIES OF THE FIRST PART, and IRVING G. IRVING, whose Post Office address is 2916 Elizabeth Warren Avenue, Butte, Montana, PARTY OF THE SECOND PART,

W I T N E S S E T H :

WHEREAS, the parties hereto have entered into a Lease and Option on the Norwich Quartz Lode Mining Claim, said Lease and Option being dated July 30, 1949, and which by its terms runs to August 17, 1954; and

WHEREAS, said Norwich Quartz Lode Mining Claim is being operated in accordance with said lease; and

WHEREAS, there is now in operation a United States Government Manganese Purchase Program which by its terms runs to June 30, 1956; and

WHEREAS, it is to the financial advantage of all parties hereto to extend said Lease and Option for the period covered by said Government Manganese Purchase Program; and

WHEREAS, it is advantageous to the Party of the Second Part to operate said property on a split-check, subleasing plan, to which the Parties of the First Part are agreeable;

NOW THEREFORE, the parties hereto, in consideration of the sum of Ten ($10.00) Dollars, lawful money of the United States,

paid by the Party of the Second Part to the Parties of the First Part, the receipt whereof is hereby acknowledged, and the mutual promises expressed herein, agree as follows, to-wit:

That the terms of the Lease and Option agreement dated July 30, 1949, are hereby ratified and confirmed by the parties hereto, excepting as herein amended.

That the term of said lease, together with the option to purchase said property, is hereby extended to June 30, 1956, upon the terms and conditions as set forth in said Lease and Option of July 30, 1949, which it is hereby agreed have been performed to the date of this amendment.

IT IS FURTHER AGREED, that the Party of the Second Part may, without further written agreement from the Parties of the First Part hereto, sublease said property under a split-check system, provided that all the other terms and conditions of said Lease and Option are complied with.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands the day and year in this instrument first above written.

Kay S. Lowry

Kay S. Lowry

Anne Lowry Milburn

Anne Lowry Milburn

Alice L. Pigot

Alice L. Pigot

Carrie L. Brophy

Carrie L. Brophy

Margaret L. Weirick

Margaret L. Weirick

As heirs of Thomas M. Lowry, Deceased.

Ted Woodward

Ted Woodward

Mae Woodward

Mae Woodward

William A. Goodall

Mary E. Goodall

Herbert A. B. Goodall

Herbert A. B. Goodall

Vivian Goodall

Vivian Goodall

As heirs of William Woodward, Deceased.

PARTIES OF THE FIRST PART.

Irving & Irving

Irving & Irving

PARTY OF THE SECOND PART.

FILE COPY
SURNAME:

Hofflund
Rutledge
Martin
Gleason

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

MAY 3 - 1954

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

Re: Docket No. DMEA-2874 - Manganese
Plutus mine
Silver Bow County, Montana
Contract No. Idm-E604

Dear Mr. Irving:

Reference is made to your application of December 19, 1953, for the aid of this agency in exploring the Norwich mine. In view of the relation between the Norwich mine and the Plutus mine, it is necessary to treat your application as one for an amendment to the subject contract under the subject docket number.

Your application indicates that your lease and option on the Norwich mine expires on June 30, 1956; whereas a review of the Lease and Option dated July 30, 1949, indicates that it terminates August 17, 1954. You may have an extension of this Lease and Option, but if so we have not been provided with a copy of it. In either case, in view of the short period of the remaining term, it would be necessary for you to provide the Government with Owners' Consents to Lien to cover the Norwich mine. These consents should be signed by all of the lessors named in the Lease and Option.

We are proceeding with the processing of your application, but will not be able to complete it until we have in hand the executed Owners' Consents to Lien, forms for which are provided herewith.

Sincerely yours,

C. O. Mittendorf
(By EST)
Administrator

FARutledge/JLHofflund/emd
4/30/54

Enclosures 6

Copy to: Docket
Adm. R. File
Op. Comm.
Field Team (Reg. II) (2)
G. DeHuff, Rm. 3523
L. Pavlides, Rm. B-242-B, GSA
W. S. Martin
J. L. Hofflund chron. pending

400

Docket
File
Rutledge
Martin

N.S. in R.R.

May 3, 1954

MEMORANDUM

To: Chief Counsel, DMEA

From: Chief, Iron and Ferro-Alloys Division, DMEA

Subject: Review and preparation of Amended Contract
Docket No. DMEA 2874 - Manganese
Irving G. Irving and Robert H. Nelson
Plutus and Norwich mines
Silver Bow County, Montana
Contract No. Idm-E604

Transmitted herewith is the rough draft of a proposed amended contract for your use in preparing the final draft.

Owner's Consent to Lien forms covering the Norwich claim were requested by letter of April , 1954.

The operators have furnished one copy of a new guaranty covering both the Plutus and Norwich claims. This is in the official docket.

Additional copies of the map attached to the amended contract draft will be prepared when needed.

SIGNED
W. S. Martin, Chief
Iron and Ferro-Alloys Division

Attachment

FARutledge/ls

cc: Docket
Adm. Read. File
Code 400

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 2874

COMMODITY Manganese

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

EXPLORATION PROJECT CONTRACT[1]

(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Irving G. Irving, 84 Hirbour Building, Butte, Montana, and Robert H. Nelson, 512 Clark Street, Helena, Montana - Partners and as set forth in Annexes I, II, and III, attached hereto and made a part hereof. hereinafter called the "Operator," as follows:

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

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Montana County of Silver Bow, described as follows:[3] Plutus Mining Claim, Survey No. 3018, patented, located in Sections 10 and 15, T. 3 N., R. 8 W., above a horizontal plane 600 feet vertically below the collar of the Plutus shaft, and Norwich Quartz Lode Mining Claim, U. S. Survey No. 2724, Lot 590, T. 3 N., R. 8 W.

the Operator represents and undertakes:[4] as to a 1/4 interest in the Plutus claim

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: Nortgage to General Services Administration under its Contract GS-10P(D)-3 as to the Norwich claim and to a 3/4 interest in the Plutus claim 6/

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within _____ days from the date of this contract shall commence work on a project of exploration for[5] Manganese in or upon the described land; and shall bring the project to completion within a period of 16 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 75 percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $35,535.00, which is 75 percent of $47,380.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

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

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

16—66320-1

6/ See Guaranty attached.

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

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

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

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

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

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

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

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

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

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

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

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____

By _____

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

_____ [CORPORATE SEAL]

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

EXPLORATION PROJECT CONTRACT
IRVING G. IRVING and ROBERT H. NELSON
Exploration Project Contract No. Idm-E604
DOCKET NO. DMEA 2874

ANNEX II

The Operator is a party to a contract with the Government, acting through Defense Materials Procurement Agency, Contract No. GS-10P(D)-3, under the provisions of which the Government has made certain advances to the Operator to finance certain mining and productions operations on the Plutus claim, which is the subject of this Amended Exploration Project Contract, and also on the adjoining Norwich claim, which is now being included by this Amended Exploration Project Contract.

The work provided for in this Amended Exploration Project Contract depends upon and could be performed only by virtue of certain of the mining operations which are being financed by the Government under said Defense Materials Procurement Agency contract, but the exploration work is not directly beneficial or in any way necessary to said mining and production operations.

Inasmuch as the authority of Defense Minerals Exploration Administration is limited to contribution to the cost of exploration and related development, this statement is made in explanation of why the Exploration Project Contract was restricted to the Plutus claim and did not include the Norwich claim. The contract between the Defense Materials Procurement Agency and the Operator was for the development and production of the Norwich Footwall vein. The exploration added under this Amended Exploration Project Contract will be limited to the Norwich Hanging Wall vein which was not known to exist at this depth when the Contract was executed.

However, as a consideration for the inclusion of the Norwich claim and the exploration of the Norwich Hanging Wall vein, all production from the referenced Norwich claim will be subject to the Government's percentage royalty.

The Defense Materials Procurement Agency, the General Services Administration, or any other department or agency of the Government which may receive ore from the property

Draft

described in Article 2 of the Amended Contract form, or which may be or become in any manner obligated to pay money to the Operator, is authorized and directed to deduct from any such money or accounts payable to the Operator, and pay to or for the account of Defense Minerals Exploration Administration, any sums that may be due to the Government on account of royalties under the amended exploration contract to which annex is attached.

AMENDED
EXPLORATION PROJECT CONTRACT
IRVING G. IRVING and ROBERT H. NELSON, PARTNERS
DOCKET NO. DMEA-2874

EXHIBIT "A"

Description of the Work

The objective of this project is the exploration for manganese on the Plutus and Norwich patented mining claims.

The work consists of three stages and is substantially shown on the attached map entitled "Norwich-Plutus Mine, Silver Bow County, Montana----Nelson and Irving, Butte, Montana---- Composite Plan-Map 1."

All drifts, crosscuts, and raises shall be timbered as necessary and shall be not less than 5 feet by 7 feet in the clear.

Representative samples, not to exceed 500, shall be taken of all mineralized ground encountered. Each sample shall be divided into at least two parts, one of which is to go to the Field Team and the other to the Operator. The samples are to be analyzed for silver and manganese.

Stage I

The work under this stage consists of that work which has been completed, and is as follows:

1. Drift easterly on the 200-foot level of the Plutus shaft 16.4 feet along the Plutus vein from a face 3 feet east of USBM tag No. 256.

draft

2. Drift westerly on the 200-foot level of the Plutus shaft 44.4 feet along the Plutus vein from a face 21 feet west of USBM tag No. 255.

3. Unwater and rehabilitate the Plutus shaft 36.5 feet below the 244-foot level to establish a new level at the 275-foot level and provide for a sump. Rehabilitation includes all necessary retimbering, rearrangement of dividers, and installation of skip guides.

4. At 275 feet in the Plutus shaft, cut and timber a station-crosscut 15 feet southeasterly to the Plutus vein. Total excavation for the station-crosscut shall not exceed 1,002 cubic feet.

Stage II

The work under this stage consists of the work in the original contract, as amended, that remains to be completed.

1. Drift easterly on the 275-foot level of the Plutus shaft along the Plutus vein 183.6 feet from the end of the station-crosscut.

2. Drift 210.6 feet westerly along the Plutus vein from the end of the west crosscut on the 244-foot level.

3. Crosscut 15 feet to the south from the face of the west crosscut on the 244-foot level of the Plutus shaft.

4. Dependent upon the results of the above drifting and/or crosscutting under Stages I and II, the Operator, with the prior written approval of the

Government, may perform not to exceed 110 feet of raising.

5. The Operator, from the time work is started on the 275-foot level, shall keep that level pumped dry until all work on that level is completed. Should it become necessary for the Operator to replace the pump presently operating, with equipment of greater pumping capacity, a pump capable of pumping 200 gallons per minute against a 400-foot hydraulic head shall be installed.

Stage III

1. Drift 375 feet easterly on the Norwich Hanging Wall vein from the 244-foot level crosscut to the rhyolite contact.
2. Crosscut 75 feet southerly from the East drift on the Norwich Hanging Wall vein on the 244-foot level, approximately 250 feet from the crosscut, to the mineralization indicated by Bureau of Mines' diamond drill Hole No. 5.
3. Dependent upon the results of the above drifting and/or crosscutting, the Operator with the prior written approval of the Government, may perform not to exceed 100 feet of raising.

Agreed Unit Costs 1/

Drifting and/or crosscutting 920 feet @ $34.00/ft.	$31,280.00
Timbering 920 feet of drifts and/or crosscuts @ $5.00/ft.	4,600.00
Raising 210 feet @ $35.00/ft.	7,350.00
Unwatering and rehabilitating shaft, 36.5 feet @ $35.00/ft.	1,277.50
Cutting and timbering station-crosscut, 1,002 cubic feet @ $1.24/cu. ft. (rounded to)	1,242.50
Pumping 150 days @ $4.20/day 2/	630.00
Analyzing 500 samples for manganese and silver @ $2.00/sample	1,000.00
ESTIMATED TOTAL AGREED UNIT COSTS	$47,380.00
GOVERNMENT PARTICIPATION @ 75%	$35,535.00

1/ The unit costs include all costs whatsoever incidental to the completion of the work.

2/ This cost is allowable only in the event that the Operator replaces the presently operating pump with a pump of greater capacity, as described in item 5, Stage II.

400

DOCKET
SURNAME

Rutledge
Martin

April 26, 1954

MEMORANDUM

To: Administrator, DMEA

From: Chief, Iron and Ferro-Alloys Division, DMEA

Subject: Amendment No. 2 to Contract No. Idm-8604
Docket No. DMEA 2874 - Manganese
Irving G. Irving & Robert H. Nelson
Plutus mine
Silver Bow County, Montana
Contract No. Idm-8604

This Division has not received notice of a request from the Operator for the changes embodied in the referenced amendment.

We see no reason for drifting to the west on the 244-foot level instead of the 200-foot level except to use all the authorized units of work.

If the ore body rakes as shown on Longitudinal Section A-A' attached hereto, the drifting to the west should be cancelled.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

FARutledge:foc
4-26-54

cc to: Docket
Code 400
Adm. Reading File

Please note Operator's letter of April 3, 1954. Rec'd in this Division. 4-27-54.

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

April 21, 1954

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

Re: Docket No. DMEA-2874 (Manganese)
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-E604

Dear Mr. Selfridge:

Enclosed are two copies of a letter dated April 3, 1954, from the operator of the above-referenced contract, in which he requests an amendment to his contract.

As a result of this letter, we prepared Amendment No. 2, signed copies of which were forwarded to your office yesterday. It was our original intention to forward this letter to your office along with the amendment; however, it was inadvertently delayed.

Sincerely yours,

Thor H. Kiilsgaard

Thor H. Kiilsgaard
Acting Member
DMEA Field Team, Region II

Enclosure

Copy

COPY

April 3, 1954
43 Herbour Bldg.
Butte, Montana

Mr. A. E. Weissenborn, Exec. Officer
Defense Minerals Exploration Administration
S. 157 Howard Street
Spokane, Washington

Re: DMEA 2874
Contract Idm-E604
(manganese)
Norwich Mine
Butte, Montana

Dear Mr. Weissenborn:

The captioned contract, and Amendment No. 1 calls for a balance of 225.6 feet of westerly drifting on the Plutus Vein, on the 200 level.

This level showed an oreshoot approximately 130 feet long. Ore connected with this "ore shoot" appeared also in the shaft on the 244 level. An easterly rake thus seemed to be a possibility. Accordingly a request was made to have the balance of the easterly drifting (on the 200 level) transferred down to a new 275 level to explore the structure at that horizon to the east. Some of this work was done but there is now some doubt about the rake being easterly--- or if there is any discernible rake at all.

To further explore the ore exposed on the 200 level, then, and to determine its downward direction, or extension (if any) an intermediate sill was driven out (at our own expense) 18 feet below the 200 level. (See maps)

The result of this work, now indicates a westerly rake as being a possibility. But the ore exposed, to date, has been pretty erratic and not too much is known about it.

However, because of the possibility of a westerly rake, we hereby request that the balance of the work to the west on the 200 level (225.6') be transferred down to the 244 level (see maps) where it be converted to 15 feet of crosscutting and 210.6 feet of westerly drifting. The crosscutting is to be in a southerly direction from the present crosscut southwest off the Plutus station (on the 244 level) and is designed to explore the hanging wall of the vein here exposed to see if the split shown in the intermediate drift above projects out into the hanging wall on this lower horizon. (See maps.)

In addition to the rake possibility, another reason for doing the westerly drifting on the 244 level, rather than the 200 level, is that the ore "went to oxide" in two places where stoping was started above the 200 level. In view of this fact, it seems better to do the drifting on the lower level suggested as "pink ore"--rhodochrosite--is more likely to be exposed and to extend above a greater distance, than would appear to be the case on the 200 level.

Very truly yours

/s/ I. G. Irving

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APR 5 1954
U.S.G.S.
SPOKANE, WASH.

Ruthley
Martin
Debhoff
Pavelec

April 21, 1954

MEMORANDUM

To: Administrator, DMEA

From: Chief, Iron and Ferro-Alloys Division

Subject: Request for additional work
Docket No. DMEA 2874 - Manganese
Irving G. Irving and Robert H. Nelson
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-E604
Contract amount - $25,830.00
Government's share - $19,372.50

The subject request for the addition of new work and the inclusion of more land under Article 2 of the contract is approved by this Division based on the following information:

(1) The Operators under the referenced contract filed a new MF-103, dated December 19, 1953, with the DMEA Field Team on December 22, 1953. This application received in Washington on February 15, 1954, requested new work estimated to cost $43,550.00. Because the work is on property adjoining the land covered by the referenced contract and access to the workings would be through the same shaft, the new application was considered as a request for an amendment to Contract No. Idm-E604.

(2) The request for new work comprised the following items:

(a) Drift 375 feet easterly on the Norwich Hanging Wall vein from the 244-foot level crosscut.

(b) Drift 100 feet westerly on the Norwich Hanging Wall vein from the 244-foot level crosscut.

(c) Raise a total of 450 feet from the above drifts at locations to be selected by the Operator with the approval of the Field Team.

Crosscut 75 feet south from the East drift to investigate the mineralization shown by Bureau of Mines' Diamond Drill Hole No. 5.

The estimated costs of the new work follow:

550 ft. drifts & X-cuts @ $41.50/ft.	$22,825.00
450 ft. raises @ $35.00/ft.	15,750.00
550 ft. timbering for drifts & X-cuts @ $7.50/ft.	4,125.00
425 samples @ $2.00/sample	850.00
	$43,550.00

(4) The Field Team recommends part of the new exploration requested by the Operators because the work on the 244-foot level has indicated that the calculated reserves for the Norwich vein, based on the Bureau of Mines' drilling program, were actually too conservative.

Previous estimates had been based on an assumption that the Norwich Footwall vein either merges with the Norwich Hanging Wall vein or stringers out between the lowest level of the Norwich mine and the Bureau of Mines' drill holes. The new work under the DMPA program has indicated that both structures are present on the 244-foot level.

(5) The Field Team has recommended the following work:

(a) Drift 375 feet easterly on the Norwich Hanging Wall vein from the 244-foot level crosscut.

(b) Crosscut 100 feet south from the East drift to investigate the mineralization shown by Bureau of Mines' Diamond Drill Hole No. 5.

(c) Raise a total of 100 feet at approved locations.

(6) The Field Team has stated as follows:

"Inasmuch as two different, although neighboring veins, are being explored, it might be argued that the work should be done on two separate contracts so that the Plutus project, which has already found ore, would not be assessed royalties to pay for the Norwich Hanging

Hanging Wall vein exploration should this be a failure; however, it has been the policy of the DMEA not to write separate contracts when exploring on contiguous properties even when different objectives are being sought. It is, therefore, assumed that if DMEA supports the Norwich Hanging Wall exploration, it will be by means of an amendment to Contract Idm-K604.

"On the other hand, the Norwich Footwall vein has reserves of ore which have been made accessible through a DMPA loan; the proposed exploration on the Hanging Wall vein would in no way benefit this ore, and it seems, therefore, logical and reasonable that any ore produced from the Norwich Footwall vein should be excluded from DMEA royalty repayment. As an additional safeguard, the proviso might be added that any ore trammed through any drifts on the Hanging Wall vein would be assessed royalty regardless of its origin."

This Division does not agree with the Field Team's recommendation that the production from the Norwich Footwall vein be excluded from that on which the Government's royalty will be due.

It is recommended that in the event an amendment adding the Norwich claim to the subject contract is executed, all production from that claim should be subject to the Government's percentage royalty.

(7) The map of the Plutus vein attached to the Operator's original application, DMEA 2874, indicated that some 9,750 tons of carbonate ore could be expected above the 200-foot level, 10,000 tons of carbonate ore below the 200-foot level, and some 5,000 tons of mixed oxide-carbonate ore in the upper oxidized zone.

The work completed on the Plutus vein, while exposing sufficient mineralization to warrant the issuance of a "Certification of Discovery or Development" has not been as successful as anticipated. The stope which was started on the West drift on the 200-foot level encountered oxidized carbonates two rounds above the back of the level. The faces of both exploratory drifts on this level are not of ore grade. The East drift was abandoned after 16.4 feet had been driven and the work authorized for driving to the east transferred by Amendment No. 1 to the 300-foot level. It is hoped that this level will be below the oxidized zone.

New revised estimates made by the Bureau of Mines for the Plutus vein are as follows:

Carbonate ore

Measured	Indicated	Inferred
0.0	250 tons	1,320 tons

Oxide-carbonate ore

0.0	0.0	3,206 tons

When the above is compared with the Operator's original estimate, some 19,750 tons carbonate ore, the outlook for the Plutus vein above the 300-foot level is not particularly favorable.

(8) To date, March 31, 1954, the Government under DMEA has collected $187.94 in royalty from 449.5513 tons produced from the Plutus mine, at an average royalty rate of $0.418 per ton. GSA meanwhile has collected $1,798.20 from the same production under the $4.00 per ton repay provision of their loan covering both the Norwich and Plutus mines. The production from the Norwich mine is not known but it is said to have produced 3,000 tons averaging 22 percent Mn in the past 14 months.

(9) New revised estimates by the Bureau of Mines for the Norwich mine follow:

Footwall vein

Measured	Indicated	Inferred
5,280 tons (20.6%Mn)	26,425 tons (19.4% Mn)	25,470 tons (18.0% Mn)

Hanging Wall vein

0.0	5,250 tons (18.4% Mn)	27,353 tons (13.7% Mn)

The Operator's reserves (from application dated December 19, 1953) for the Norwich claims are:

Proved and Probable (Measured & Indicated)	23,000 tons @ 22% Mn
Prospective (Inferred)	56,700 tons @ 18.4% Mn

From these estimates it may be seen that the largest reserves are calculated for the Footwall vein and that the Operator made no differentiation between the two veins.

(10) On the basis of what is now known about the Plutus and Norwich mines, it is believed that the chances for repayment of the DMEA's share of the contract will be enhanced if an amendment is executed to add the Norwich claim and new work on that claim to the subject contract. It is recommended that the following units of work be approved:

(a)	Drift 375 feet easterly on the Norwich Hanging Wall vein from the 244-foot level crosscut to the rhyolite contact @ $34.00/ft.	$12,750.00
(b)	Crosscut 75 feet southerly from the East drift to the mineralization shown by Bureau of Mines' Diamond Drill Hole No. 5 @ $34.00/ft.	2,550.00
(c)	Raise a total of 100 feet at locations approved by the Field Team @ $35.00/ft.	3,500.00
(d)	Timbering 450 feet @ $5.00/ft.	2,250.00
(e)	Assaying 250 samples @ $2.00 each	500.00
	Total	$21,550.00
	Government's share @ 75%	$16,162.50

(11) In the event additional work is approved, the Operator should be requested to furnish Owner's Consent to Lien.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

FARutledge/ls 4/20/54
cc: DOCKET
CODE 400
ADM. READING FILE

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

April 20, 1954

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

Re: Docket No. DMEA-2874 (Manganese)
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-E604

Dear Mr. Selfridge:

Enclosed are the original and two signed copies of Amendment No. 2 to the above contract, with attached justification.

Distribution of this amendment is being made in the usual manner.

Sincerely yours,

Thor H. Kiilsgaard

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

Enclosure

cc: Finance Office w/encl.
USBM (2)
Nickelson

RECEIVED
MAY 20 1954
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

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

April 15, 1954

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

Re: Docket No. DMEA-2874 (Manganese)
Irving G. Irving & Robert N. Nelson
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-8604

Dear Mr. Irving:

Enclosed are several copies of Amendment No. 2 to the above-referenced contract. This amendment allows for the balance of 225.6 feet of drifting in a westerly direction on the 200 level to be transferred to explore the Plutus vein from the face of the west crosscut on the 244 level by crosscutting 15 feet to the south to explore the width of the vein zone and by drifting 210.6 feet in a westerly direction to explore the Plutus vein. If the terms and conditions of this amendment meet with your and your partner's approval, please see that all copies are properly signed, retain that copy marked for the operator and return the remaining copies to this office.

You will notice there is a copy of the map attached only to the operator's copy of the amendment; this is merely to save Uncle Sam and yourself postage in forwarding the amendment back and forth.

Sincerely yours,

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

Enclosure

cc: DMEA (2)
UEBM (2)
Nickelson

ROBERT H. NELSON

IRVING G. IRVING

DEPARTMENT OF ...
Defense Minerals ...
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2874

NORWICH MINE

HIRBOUR BUILDING
BUTTE, MONTANA

April 4, 1954

WSAY

Mr. C. O. Mittendorf, Administrator,
Defense Minerals Exploration Administration,
Washington 25, D. C.

Subject: Application for Exploration Contract,
Norwich Mine (Manganese) Butte, Montana
I. G. Irving & R. H. Nelson,
43 Hirbour Building, Butte, Montana.

Dear Mitt:

Around the first of the year we submitted an application for an exploration contract, to drift out the strong Hangingwall Vein, on the Norwich Claim. As the maps will show, this is the master structure on the property, and while the bulk of our ore reserve is carried on the Norwich Footwall Vein, the H. W. Vein is virtually undeveloped (exposed only in three widely separated places) and carries a large potential for ore development.

We recently calcualted our ore reserves anew, in light of new development work, and Bob and I arrive at over thirty thousand tons of possible ore, on this Hangingwall Vein, practically all of it "Inferred Ore". And we have strong reasons for believing that the recent calculations by the Bureau of Mines, figures on which have been sent you, will show an approximately equal amount. At this point, it should be stressed that very little--in fact a very small percentage--of the ore carried on this vein is what would be properly called measured or indicated ore, but instead as mentioned above, it is in the inferred category. My understanding of the DMEA program is that this is the very type of set up that they wish to explore.

If the maps be consulted this vein is shown on the Norwich 135 level, was recently cut by us in our 244 level crosscut, where 4.5' of 14.8% material (Mn.) is revealed, and was mapped by one of the company's best geologists, on the 400 level below as being "half quartz-half manganese carbonate". These points are widely separated. All in all the vein, from what is known is a "natural" to be prospected. Al. Weissenborn saw the vein on the 244 level and was obviously impressed by it. I understand that the Spokane office has sent in its report, and I get the impression from talking with them, that they are enthusiastic.

We are terribly anxious to get started on this structure, because we are convinced that ore will be found---ore that in no way can be classified as being measured or indicated, just inferred. We want to get started drifting east on the vein so that we can get into larger production as soon as possible. A drill hole out there to the east (some 200 feet) cut 19.0 feet of mineralization. This is B. of M. Hole #5. Only sludge samples were obtained in any quantity, but they contained interesting results. See maps, accompanying application. There could be a large tonnage in the area between our crosscut and the rhyolite dike--almost 500 feet to the east.

To us, the project has as much merit as any we have seen. We are all set up, on this working level to handle the job swiftly. We are producing manganese now, and this might add greatly to our production. The plant of the Domestic Manganese & Development Co., which is the government depot here, is still not operating. They have the 25,000 tons, or more, in their stockpile that was one of the requirements, but as I understand it, they must also have a current production coming in of several hundred tons a day. It would seem that the project that we have applied for, might be a great help in this latter respect, and get things going faster at the plant.

We would greatly appreciate any quick favorable action on this project that might be possible. Would therefore appreciate some word from you on the status of the application.

Very sincerely yours,

Joe

I. G. Irving

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

March 24, 1954

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

Re: Docket No. DMEA-2874 (manganese)
Irving G. Irving & Robert H. Nelson
Norwich-Plutus Mine
Silver Bow County, Montana
Contract No. Idm-E604

Dear Mr. Selfridge:

We are enclosing herewith a very complete memorandum from Mr. John S. McNabb, Jr., of the Bureau of Mines, in which the ore reserves of the Norwich-Plutus mine are discussed in a careful and competent manner. Reply to your letter of February 23 has been deferred until this new information on ore reserves was available to us.

As we interpret your letter of February 23 and a telephone conversation which we had with Mr. Martin of the Ferro-Alloys Division, consideration of the amended application for the exploration of the Norwich hanging wall vein is being delayed because of the uncertainty as to whether the ore reserves of the property are sufficient to repay funds which have been advanced by the Government to Irving & Nelson through the DMPA and the DMEA. We feel confident that the up-to-date information presented by Mr. McNabb will give an entirely different picture of the ore reserves and potentialities at the Norwich-Plutus property from what had been available to you previously. We feel sure that McNabb's estimate is soundly based and that it indicates quite clearly a far more favorable condition than had been shown by the former information.

With respect to the Norwich hanging wall vein, we want to make clear that, although McNabb is quite justified in inferring ore on this vein, these reserves are based on very incomplete data, which is, of course, why they are inferred. Particularly with respect to grade, the information is very incomplete. The exposure of the hanging wall vein in the crosscut to the Norwich footwall vein is such as to

encourage exploration of this vein, but until the crosscut was driven, even the presence of this vein on this level was not assured. We, therefore, are quite certain that the testing of the Norwich hanging wall vein can be quite properly considered as exploration, rather than development. It is obvious, of course, that any ore found on the Norwich hanging wall vein will increase the likelihood of the Government recovering money expended both in the exploration of the Plutus vein under the DMEA contract and the funds advanced by DMPA for the Norwich footwall vein.

Regarding the exclusion of the Norwich footwall vein from repayment of royalty, the basis for this is that ore is now being mined from the vein. Furthermore, this vein was reached by the use of DMPA funds and since this is a separate vein from the hanging wall vein, the subject of the proposed DMEA exploration, there is no justification for the DMEA assessing royalty on ore produced from the footwall vein. Since the hanging and footwall veins are separate veins there should be no difficulty in determining which ore should be excluded and which should be subject to royalty. Would it not be possible to say merely that any ore produced from the Norwich footwall vein will not be subject to DMEA royalty repayments?

Bear Vein

? Old Cont. Jones?

If there are any further questions regarding this contract, please let us know and we will attempt to answer them to the best of our ability.

By Field Team, Region II

A. E. Weissenborn

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

Wing G. Agnew

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

Enclosure 1 (in quad.)
cc: USBM (2)
Nickelson

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

So. 157 Howard Street
Spokane 4, Washington

March 24, 1954

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

Re: Docket No. DMEA-2874 (manganese)
Irving G. Irving & Robert E. Nelson
Norwich-Plutus Mine
Silver Bow County, Montana
Contract No. Idm-2504

Dear Mr. Selfridge:

We are enclosing herewith a very complete memorandum from Mr. John S. McNabb, Jr., of the Bureau of Mines, in which the ore reserves of the Norwich-Plutus mine are discussed in a careful and competent manner. Reply to your letter of February 23 has been deferred until this new information on ore reserves was available to us.

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encourage exploration of this vein, but until the crosscut was driven, even the presence of this vein on this level was not assured. We, therefore, are quite certain that the testing of the Norwich hanging wall vein can be quite properly considered as exploration, rather than development. It is obvious, of course, that any ore found on the Norwich hanging wall vein will increase the likelihood of the Government recovering money expended both in the exploration of the Plutus vein under the DMEA contract and the funds advanced by DMPA for the Norwich footwall vein.

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If there are any further questions regarding this contract, please let us know and we will attempt to answer them to the best of our ability.

By Field Team, Region II

A. K. Weissenborn, Executive Officer
U. S. Geological Survey

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

Enclosure 1 (in quad.)
cc: USGS (2)
Nickelsen

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

1201 N. Division St.
Spokane 2, Washington
March 22, 1954

MEMORANDUM

To: DMEA Field Team, Region II

From: John S. McNabb, Jr., Mining Engineer, Bureau of Mines

Subject: Docket No. DMEA 2874 - Manganese, Irving G. Irving & Robert H. Nelson, Norwich-Plutus Mine, Silver Bow County, Montana, Contract No. Idm-E604; ore reserves.

Discussion

The diamond drilling exploration program conducted by the Bureau of Mines at the Norwich mine in Silver Bow County, Montana, was completed in early 1950. Subsequent to the drilling program, the Norwich and Plutus claims were leased by Messrs. Robert Nelson and Irving G. Irving, and exploration and development of the property was started in January 1952. A DMPA production loan was negotiated to provide financial assistance in the development of the properties. At a later date a DMEA exploration program was started at the Plutus mine.

Two years of active underground exploration and development at the Norwich-Plutus properties has contributed a significant amount of new information regarding the ore potential of the two mines. Consequently, a reevaluation of ore reserves at the subject properties was made in March 1954.

A study of existing mine maps and an underground and surface inspection of the Norwich-Plutus properties revealed that the reserve estimate made by the Bureau of Mines in 1950 should now be corrected and enlarged upon. The original estimate was necessarily based largely upon the correlation of drill hole intersections and surface exposures. New underground development has made it possible to establish new reserve blocks and to correct understandable errors in the original estimate.

Three vein structures are in evidence at the Norwich-Plutus properties. Although the veins are strong and persistent, ore deposition is lens-like, and minable quantities of rhodochrosite are confined to ore shoots within the vein structures. Faulting normal to the veins is quite prevalent in mineralized areas, and no doubt contributed greatly to the localization of ore deposition and to the widening of the vein structures in certain instances.

The procedure used in computing the Norwich-Plutus reserves involved a study of each of the three known vein structures. Longitudinal sections of the three veins were prepared, each showing computed reserve blocks based on existing sample data, shipping returns, geologic projections, drill hole intersections, and visual inspection of the properties. A plan map of the Norwich-Plutus workings also accompanies the reserve estimate. Three categories of ore reserves were computed: measured, indicated, and inferred.

Norwich Footwall Vein

Virtually all of the significant mine production of the Norwich-Plutus properties has come from the Norwich Footwall Vein. Past and present exploration and development have been concentrated on this structure, mainly because it is generally recognized as having the greatest ore-bearing potential of the three Norwich-Plutus structures.

The inference resulting from the Bureau of Mines diamond drilling program was that the Norwich Footwall Vein and the Norwich Hanging Wall Vein merged in the vicinity of the 170-foot level, or that the Footwall Vein stringered out. This assumption was based on vein intersections obtained in diamond drill holes 2 and 3, which were thought to correlate with the downward extension of the Hanging Wall Vein. The assumption is now known to be in error because the Hanging Wall Vein was recently intersected on the 244-foot level, and the Footwall Vein was cut 80 feet to the north in the same crosscut. Also, the core intersections containing mineralization in holes 2 and 3 now appear to be in the Footwall Vein. If the two veins merge at all, it will probably be at a depth of 400 feet or more.

Six reserve blocks were delineated on the Footwall Vein:

Block A - Measured Ore

Average dimensions:	5.5 x 160 x 60
Total tonnage:	5,280 tons
(10 cu.ft. per ton)	
Average grade:	20.6% Mn, 5.0 oz. Ag

Block A has been drifted on for 160 feet, all of which is in ore. On the upper side a drift in ore marks the top western half of the block. Two raises on each end of the block are in ore for 30 feet, their entire height at present. Samples along the 244-foot level and from the raises average 20.6% Mn over a 5.5-foot width. Shipments from the two raises confirm the grade and width.

Block B - Indicated Ore

Average dimensions:	5.0 x 315 x 150 - Block A
Total tonnage:	23,625 tons
(10 cu.ft. per ton)	
Average grade:	20.0% Mn, 4.0 oz. Ag

This block encompasses and enlarges upon Block A. In length it is delineated by a 180-foot drift on the 170 level that is immediately below the most productive portion of the Norwich mine; in the middle of the block the 244 level drift is in ore for 160 feet. The block has been carried 50 feet beyond the east face of this drift because the drift face is still in ore, and this extension seems reasonable for an indicated block. The lower limit was likewise extended 50 feet below the ore intersection cut in Bureau of Mines drill hole #2. Ore grade is influenced by Block A samples, stope shipments, and the sludge assay from drill hole #2.

Block C - Indicated Ore

Average dimensions:	4.0 x 100 x 70
Total tonnage:	2,800 tons
(10 cu.ft. per ton)	
Average grade:	14% Mn, 2.5 oz. Ag

This block is bounded by Blocks A and B on the bottom and by stoped areas on the west and top. Ore grade is largely influenced by samples and shipments from above, although some weight was attached to the more attractive exposure in Block A.

Block D - Inferred Ore

Average dimensions:	4.5 x 340 x 100 / 4.5 x 20 x 150
Total tonnage:	16,650 tons
(10 cu. ft. per ton)	
Average grade:	18% Mn, 2.5 oz. Ag

This block is based upon the downward projection of the productive portion of the Footwall Vein. An area to the west of Block B is included as inferred ore because old stopes reported lost by caving were carried almost that far west. Also, the vein is apparently in the footwall on the west end of the 170 level drift. There are no exposures in Block D. Grade and vein width were conservatively set at a somewhat lower figure than that representative of areas sampled and mined above.

Block E - Inferred Ore

Average dimensions:	4.0 x 180 x 100
Total tonnage:	7,200 tons
(10 cu.ft. per ton)	
Average grade:	17% Mn, 2.0 oz. Ag

This block extends blocks B and C to the east. The vein was penetrated in this area by Bureau of Mines diamond drill hole #3. Recoveries were poor and assay results are inconclusive. Block E encompasses a virgin area that cannot be entirely disregarded because of lack of exposures. It is reasonable to assume an inferred block of ore between known showings on the west and the rhyolite extrusive on the east. Grade was influenced by blocks B and C, but the 17% Mn estimate must be regarded as an arbitrary figure.

Block F - Inferred Ore

Average dimensions:	4.5 x 30 x 120
Total tonnage:	1,620 tons
(10 cu.ft. per ton)	
Average grade:	22% Mn, 3.5 oz. Ag

Block F extends the old stoping area above the 135-foot level to the west for an additional 30 feet. The stope above the 82 level is reported to have been lost by a cave. The vein in the west face on the 82 level is possibly in the footwall. Grade in Block F is set at 22% Mn. This figure is lower than the grade of ore mined in the old stopes, but of necessity was influenced by this past production, as well as by RFC stope samples.

Norwich Hanging Wall Vein

The Norwich Hanging Wall Vein provides only a limited number of exposures. Consequently, the greatest part of its reserve lies in the inferred category. A very small tonnage has been mined from the Hanging Wall Vein. A limited number of samples from available exposures and drill hole intersections indicate that the tenor of the ore is generally lower than that of the Footwall Vein. Eight reserve blocks were calculated and are illustrated on a longitudinal section of the Hanging Wall Vein. The location of the reserve blocks gives the impression of an easterly rake on the Hanging Wall Vein. This effect is caused by the location of the few known mineralized exposures which govern the establishment of the reserve blocks. The vein has not been tested in areas that might dispel the inferred easterly rake. It therefore cannot be concluded at the present time that any pronounced rake of the mineralization in the Hanging Wall Vein exists.

Block G - Indicated Ore

Average dimensions:	5.0 x 130 x 50
Total tonnage:	3,250 tons
(10 cu.ft. per ton)	
Average grade:	21% Mn, 4.0 oz. Ag

The Hanging Wall Vein is exposed for 30 feet on the 135-foot level. Two RFC samples from the exposure average 22% Mn across 5.5 feet. On the 110-foot level, which is above Block G, the vein is only 2.5 feet wide and assays 14.5% Mn. The latter sample slightly influenced the estimated grade of 21% Mn. Width was estimated at 5.0 feet. The block was extended 50 feet east and 50 feet west of the exposure on the 135-foot level. Twenty-five feet above and below the sill established the limits along the dip.

Block H - Indicated Ore

Average dimensions:	4.0 x 100 x 50
Total tonnage:	2,000 tons
(10 cu.ft. per ton)	
Average grade:	14% Mn, 1.5 oz. Ag

The Hanging Wall Vein was cut in a crosscut from the Plutus mine on the 244-foot level. At that point two samples having an average width of 4.4 feet averaged 14.8% Mn. A 21-ton shipment from the area went 13.5% Mn. The estimated grade of the block is therefore 14% Mn. Block H was established with its boundaries 50 feet on each side of the exposure and 50 feet above the 244-foot level sill. It was not carried below the sill as indicated ore because of the barren intersection made by Bureau of Mines diamond drill hole #6, only 25 feet down the dip from the sill exposure.

Block I - Inferred Ore

Average dimensions:	4.0 x 210 x 90 - Block H
Total tonnage:	7,560 tons
(10 cu.ft. per ton)	
Average grade:	14% Mn, 1.5 oz. Ag

Block I encompasses Block H and extends the reserve into the inferred category. Grade and vein width are the same as that of Block H.

Block J - Inferred Ore

Average dimensions:	4.0 x 130 x 90
Total tonnage:	4,680 tons
(10 cu.ft. per ton)	
Average grade:	15% Mn, 2.0 oz. Ag

Block J covers the downward extension of the indicated Block G. It was cut by Bureau of Mines diamond drill hole #1, which revealed 4.4 feet of 9.7% Mn in a sludge sample. This sample combined with Block G assays inferred a grade of 15% Mn, and an average minable width of 4.0 feet.

Block K - Inferred Ore

Average dimensions:	4.5 x 130 x 125
Total tonnage:	7,313 tons
(10 cu.ft. per ton)	
Average grade:	12.1% Mn, 1.5 oz. Ag

This block covers the area between Block G and the Hanging Wall Vein outcrop on surface. It comprises a portion of the block that represented the Bureau of Mines original reserve estimate. The block has since been diamond drilled by Messrs. Nelson and Irving. New sample data now indicates that the vein is narrower and of lower grade than was originally thought. Three assays above Block G in the Hanging Wall Vein have a weighted average of 12.1% Mn over a 4.5-foot width. This grade of material is not ore under the present operation, although it easily could be commercial in the not too distant future. Therefore, Block K would seem to have a legitimate place in the reserve estimate.

Block L - Inferred Ore

Average dimensions:	4.0 x 100 x 25
Total tonnage:	1,000 tons
(10 cu.ft. per ton)	
Average grade:	17% Mn, 2.5 oz. Ag

Block L covers the upward extension of indicated Block H and the eastern extension of indicated Block G. Estimated ore grade is an average of the grades of the two blocks.

Block M - Inferred Ore

Average dimensions:	4.0 x 140 x 50
Total tonnage:	2,800 tons
(10 cu.ft. per ton)	
Average grade:	12% Mn, 1.5 oz. Ag

Block M is the eastern extension of Block I. Mineralization was encountered on the hanging and footwall of 19.4-foot structure that is probably the Hanging Wall Vein in Bureau of Mines diamond drill hole #5. Assays of 11.3% Mn and 7.3% Mn were obtained. Grade of Block M was estimated at 12% Mn, and vein width at 4.0 feet. Grade of Block I and the drill hole intersections influenced the estimate.

Block N - Inferred Ore

Average dimensions:	5.0 x 100 x 80
Total tonnage:	4,000 tons
(10 cu.ft. per ton)	
Average grade:	15% Mn, 2.0 oz. Ag

An 11-foot vein structure was mapped by a highly reputable geologist in a crosscut on the Plutus 400-foot level in the year 1921. The structure is apparently the Hanging Wall Vein. No samples were taken, but the vein was described as one-half quartz and one-half $MnCO_3$. The area is now inaccessible. Block N. is predicated on the existence of the structure as described. The block is carried 25 feet below the sill on the 400-foot level and 55 feet above. It was assigned a total length of 100 feet, 50 feet on each side of the exposure. Grade was estimated at 15% Mn.

Plutus Vein

The Plutus vein lies immediately to the south and parallel to the Norwich Hanging Wall Vein. It is in evidence on the surface over a strike length of approximately 650 feet. Exploration for rhodochrosite on the Plutus vein has thus far been disappointing. Commercial ore has been erratic and discontinuous down the dip of the vein. Almost all reserves presently fall in the inferred category.

Block A - Indicated Ore

Average dimensions:	3.0 x 55 x 15
Total tonnage:	250 tons
(10 cu.ft. per ton)	
Average grade:	17% Mn, 0.7 oz. Ag

Block A is immediately below the 200-foot level sill, where numerous samples and lot shipments indicate a grade of 17% Mn. Tonnage in the block is limited by the 200-foot level above, the Plutus shaft to the east, and indications of essentially barren vein matter on all four sides adjacent to the block.

Block B - Inferred Ore

Average dimensions:	4.0 x 110 x 30
Total tonnage:	1,320 tons
(10 cu.ft. per ton)	
Average grade:	15% Mn, 0.7 oz. Ag

Block B covers the area considered most likely to contain ore to the east of the known exposures of ore on the Plutus vein. There is inconclusive evidence of a local easterly rake; and the location of Block B is, to some extent, determined with this in mind. Stringers of rhodochrosite are in evidence in a short drift on the 275-foot level approaching Block B. Vein width in the block is estimated at 4.0 feet, and grade at 15% Mn.

Block C - Inferred Ore

Average dimensions:	4.0 x 75 x 30
Total tonnage:	900 tons
(10 cu.ft. per ton)	
Average grade:	14% Mn, 0.5 oz. Ag

Although the strong mineralization along the 200-foot level ore shoot carried up only one floor, there is sufficient evidence to justify a block of inferred ore above. The grade of the inferred block is estimated at 14% Mn. This figure was based upon a 17% average grade evident in surface exposures and on the 200-foot level sill, and the 10% to 12% Mn mineralization in the back of the 200-foot level stope.

Block D - Inferred Ore

Average dimensions:	3.5 x 130 x 43
Total tonnage:	1,956 tons
(10 cu.ft. per ton)	
Average grade:	17% Mn, 0.5 oz. Ag

Dimensions and grade of Block D are based directly on illustrated samples of known surface and near-surface mineralized exposures. Ore in the inferred block will no doubt be predominantly MnO_2.

Block E - Inferred Ore

Average dimensions:	3.5 x 20 x 50
Total tonnage:	350 tons
(10 cu.ft. per ton)	
Average grade:	18% Mn, 0.5 oz. Ag

Block E covers the downward projection of the ore shoot visible in the drift off the Tonner shaft. Grade and width are determined by illustrated samples. Ore in the block will be predominantly MnO_2.

Tabulation of Ore Reserves

Norwich Mine

Footwall Vein

Block No.	Average Dimensions of Block	Measured			Indicated			Inferred		
			Grade			Grade			Grade	
		Tons	%Mn	Oz. Ag	Tons	%Mn	Oz. Ag	Tons	%Mn	Oz. Ag
A	5.5x160x60	5,280	20.6	5.0						
B	5.0x315x150-Block A				23,625	20	4.0			
C	4.0x100x70				2,800	14	2.5			
D	4.5x340x100/ 4.5x 20x150							16,650	18	2.5
E	4.0x180x100							7,200	17	2.0
F	4.5x 30x120							1,620	22	3.5
Totals		5,280	20.6	5.0	26,425	19.4	3.8	25,470	18.0	2.5

Tabulation of Ore Reserves

Norwich Mine

Hanging Wall Vein

Block No.	Average Dimensions of Block	Measured			Indicated			Inferred		
		Tons	Grade %Mn	Grade Oz. Ag	Tons	Grade %Mn	Grade Oz. Ag	Tons	Grade % Mn	Grade Oz. Ag
G	5.0x130x50				3,250	21	4.0			
H	4.0x100x50				2,000	14	1.5			
I	4.0x210x90-Block H							7,560	14	1.5
J	4.0x130x90							4,680	15	2.0
K	4.5x130x125							7,313	12.1	1.5
L	4.0x100x25							1,000	17	2.5
M	4.0x140x50							2,800	12	1.5
N	5.0x100x80							4,000	15	2.0
Totals					5,250	18.4	3.1	27,353	13.7	1.7

Tabulation of Ore Reserves

Plutus Mine

Plutus Vein

Block No.	Average Dimensions of Block	Measured Tons	Measured Grade %Mn	Measured Grade Oz. Ag	Indicated Tons	Indicated Grade %Mn	Indicated Grade Oz. Ag	Inferred Tons	Inferred Grade %Mn	Inferred Grade Oz. Ag
A	3.0x55x15				250	17.0	0.7			
B	4.0x110x30							1,320	15.0	0.7
C	4.0x75x30							900	14.0	0.5
D	3.5x130x43							1,956	17.0	0.5
E	3.5x20x50							350	18.0	0.5
Totals					250	17.0	0.7	4,526	15.8	0.5

Distribution:
Orig. & 3 cys - Wash.
USGS (2)
DMEA
M/D

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

February 26, 1954

Mr. Irving G. Irving
Irving and Nelson
Hirbour Building
Butte, Montana

Re: Docket No. DMEA-2674 (Manganese)
Irving & Nelson
Plutus Mine
Silver Bow County, Montana
Contract Idm-E604

Dear Mr. Irving:

Receipt is acknowledged of your letter of February 24, and we refer particularly to the last part.

It is presumed that the purpose of the raising is to determine whether the oxidation in the Plutus vein may not be local to the flat fault which is visible in the stope and that perhaps some distance above this the vein may go back into rhodochrosite ore. Although the chances are perhaps against this, there would seem to be sufficient possibility to be worth a small amount of probing and we would have no objection to putting a raise up at some likely place in the stope. It is thought, however, that DMEA might object to two raises spaced as closely together as 50 feet. Furthermore, there are only 80 feet of raising available under the contract and if 50 feet were used on the 200 level, there would be very little raising left in case you wanted to probe the Plutus vein on the deeper level. It is suggested, therefore, that perhaps you might put one raise up at some logical place in the stope. This should be satisfactory because if the raise remains in black ore another raise would do little good and if you find pink ore, you would want to start stoping anyway.

If you are in agreement with this, it would be all right for you to go ahead with the raise.

By Field Team, Region II

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

cc: USBM (2) w/cys incoming ltr
DMEA (2) " " "
Nickelson " " "

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

ROBERT H. NELSON

IRVING G. IRVING

NORWICH MINE

HIRBOUR BUILDING

BUTTE, MONTANA

February 24, 1954

Mr. A. E. Weissenborn,
Defense Minerals Exploration,
S. 157 Howard Street,
Spokane, Washington.

Re: Recent Norwich Exploration Project App. and also, Plutus DMEA # 2874 (refer to last paragraphs)

Dear Al:

Got your letter of February 19th regarding the recent application for exploration aid on the Norwich Hangingwall Vein, and note that it has been forwarded to Washington.

That is fine and I hope they get at it from a processing point of view right away. We are very anxious to drift this structure out.

I talked to John McLabb the other day and when he told me that he was going to Spokane I asked him to call you and find out what had happened to the application. I then told him to tell you to hold up on it awaiting a call from me.

What I had in mind was this: Our pump recently made a little extra headway, during this very dry season, and lowered the water in the Plutus shaft another fifteen feet or so, and lo and behold we saw a big station there and a crosscut running north, at a point 300 feet below the collar. We could not get into it right away, and hoped it was a level going far enough north to cut the Hangingwall Vein. If this were to be the case we were going to ask, perhaps, for a change in the application to allow the work to be done on this lower level, instead of our 244 level. However, I got into the old workings yesterday and it proves to be merely a crosscut north for 125 feet, with several dams, and must have been used for a sump level when they were sinking the shaft years ago. So, leave the original application alone and allow it to go ahead as planned. Maybe later we might consider going down on this old level, cleaning it out and doing some work.

It would be better, however, for us to try to open the bottom level, after doing some of the work envisioned in my recent application.

Work on the Plutus Vein has not shown any minable width of ore yet on the 275 level, but we are going ahead. By the way could we use some of the 80 feet of raising we have in our

amended contract to do fifty feet of raising above the 200 level where we have drifted on the vein showing an ore shoot 130 feet long that appears not to carry up any distance. As you know, the stoping we tried above the 200 was disappointing and we subsequently quit it. But it should be probed a bit more above this level before one can definitely say that the ore does not go up.

Referring to the above request, we suggest a raise 25 feet high at a point about 15' west of the crosscut off the shaft, and another perhaps about fifty feet further in, of about the same height. See long section.

The first part of this letter does not require any reply, but could you give us the answer soon on the request for the Flutus raising described above?

Sincerely yours,

Joe

I. G. Irving

DOCKET

400

Martin
Guild
Destroff
Hoffman
Selfridge
Gylman
Mittendorf

FEB 23 1954

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 2874-Manganese
Irving G. Irving & Robert H. Nelson
Norwich-Plutus Mine
Silver Bow County, Montana
Contract No. Idm-E604

Amended application covering
Hanging Wall Vein.

Dear Mr. Weissenborn:

This will acknowledge receipt of your letter of February 12, 1954, transmitting an application dated December 19, 1953, from Messrs. Irving and Nelson, for aid for exploration of the Norwich hanging wall vein at the subject property. Also attached was your memorandum of February 12, 1954, to the Field Team, discussing the application in some detail.

We note particularly the next to last paragraph of your memorandum, which reads in part as follows:

> "On the other hand, the Norwich Footwall vein has reserves of ore which have been made accessible through a DMPA loan; the proposed exploration on the Hanging Wall vein would in no way benefit this ore, and it seems, therefore, logical and reasonable that any ore produced from the Norwich Footwall vein should be excluded from DMEA royalty repayment . * * *

To protect the interest of the Government, you should investigate carefully each application to insure that (1) sufficient ground is included, and (2) any exclusions are justified.

In this instance you have apparently overlooked in the subject docket our letter to you of September 21, 1953, the first paragraph of which reads as follows:

R.C.J.
2-23-54

"Attached hereto is a memorandum for DMEA files by the Chief Counsel which will be useful for future reference in ascertaining the status of the subject contract and the reasons for the present actions concerning it."

We quote the pertinent passage from that memorandum by the Chief Counsel:

> " * * As security for its advances, GSA (according to the contract and the letter from the Administrator of GSA to the Administrator of DMEA dated August 31, 1953) takes an assignment of two leases covering the two claims, and also a chattel mortgage on all mining equipment. The letter states that GSA's advances now amount to $89,900, which may be increased to $106,000, and that production from the Norwich claim is not apt to be sufficient to liquidate these advances."

The quotation immediately above summarized the following two paragraphs from the GSA's letter referred to therein:

> "This Administration's mortgage was given to secure advances amounting to $89,900 which possibly may be increased to approximately $106,000, and such mortgage covers the equipment acquired with Government advances and the interests of the parties in the Plutus Claim and the Norwich Claim. The proposed exploration described in your letter is wholly apart from the operations designed to liquidate the advance made by this Administration.
>
> "Based upon Geological Survey reports, there is no more than enough ore in the Norwich Claim to liquidate the advances made to date by this Administration, and certainly not enough to assure liquidation of the additional sum which we have been asked to advance in order to complete the work commenced with the original advances. Accordingly, we regret that we cannot subordinate the mortgage covering the Plutus Mine and the claim of the Administration for repayment based on Plutus production."

We assume that it is only through inadvertence that your memorandum does not comment on the possibilities of the Government's obtaining repayment for its share of the cost of the suggested supplementary project in the event that the proposed exploration should be successful in finding ore.

In your reply, please distinguish carefully where necessary between DMEA and DMPA assistance. We note that in the first paragraph of your letter to us you speak of "the fact that access to the Norwich footwall vein has been gained by means of a DMEA loan."

Sincerely yours,

George C. Selfridge (2/18)
Chairman, Operating Committee

Approved:

J. H. Hedges (2/18)
Member, Bureau of Mines

Philip W. Guild (2/18)
Member, Geological Survey

Copy to: DOCKET
CODE 400
FIELD TEAM, REG. II
OPERATING COMMITTEE
ADM. READING FILE
GILBERT DE HUFF, USBM
LOUIS PAVLIDES, USGS

WSMartin/ls
2/18/54

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
FEB 15 1954

1201 N. Division St.
Spokane 2, Washington
February 12, 1954

VIA AIR MAIL

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

Re: Irving and Nelson application for exploration of the Norwich hanging wall vein, Norwich-Plutus Mine, Butte, Montana

Dear Mr. Selfridge:

Attached is a memorandum from A. E. Weissenborn, commenting on the above application. His conclusion that the exploration is technically sound and should receive favorable consideration provided there are no objections because of the fact that access to the Norwich footwall vein has been gained by means of a DMEA loan, is concurred in.

Zoldok, Bureau of Mines, in commenting on the costs, concludes that Irving and Nelson probably are justified in requesting a higher allowance for timbering than specified in Contract Idm-E604. However, if raising this allowance is objectionable because it would be inconsistent to have two timbering rates on the same property, the request can be denied; we feel that Irving and Nelson will not object very seriously to this.

We are also inclined to believe that the proposed 100 feet of westerly drifting on the 244 level is purely development and recommend instead that this footage be allowed for the proposed 75-foot crosscut south from the east drift to cut the vein intercepted in BM DD Hole #5. Applicants did not allow footage for this crosscut.

The 450 feet of proposed raises seem excessive and we feel that this should be reduced to 100 feet to be driven to determine how far down to the 244 level the oxidation extends. The stope which was started on the 200 level west encountered oxidized carbonates two rounds above the back of the level.

The work we propose would cost $20,125.00 for 575 feet of drifts and crosscuts and $2,875.00 for 575 feet of timbering at $5.00 per foot, or a total of $23,000.00.

Is/or raising ?

Three copies of the application are also enclosed herewith.

By Field Team, Region II

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

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

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
15 1954

February 12, 1954

Memorandum

To: Field Team, Region II

From: A. E. Weissenborn, Executive Officer

Subject: Application for exploration of the Norwich Hanging Wall Vein (manganese), Irving and Nelson, Butte, Montana.

An application for the exploration of the Norwich Hanging Wall vein has been submitted by Irving and Nelson. I happened to be in Butte on December 22, 1953, just after the application had been submitted but before it had been received in Spokane, and met Irving and Nelson by chance. At their request I visited the Norwich-Plutus property and examined the site of the newly proposed exploration on the Norwich Hanging Wall vein, as well as the work done on the Norwich footwall vein with the aid of a DMPA loan and the current DMEA project on the Plutus vein.

The various activities of Irving and Nelson at the Norwich-Plutus property have been described on a number of occasions and are depicted clearly on the map which the applicant has attached to his application; therefore, they need only be summarized here.

Irving and Nelson have opened the Plutus shaft with DMPA assistance and have driven a crosscut on the 244 level -- also with DMPA assistance -- to the Norwich Footwall vein. This work is expected to make accessible a considerable tonnage of good grade manganese ore previously known on that vein, partly from old workings and partly from drill holes drilled by the Bureau of Mines. At the time of my visit the 244 level crosscut had just broken into the Plutus Footwall vein exposing about 4 feet of good ore without disclosing the full width of the vein. Irving states that funds from DMPA have now been completely expended and the Norwich Footwall project is being continued entirely on company funds.

The Plutus project, which is being done under DMEA contract Idm-E604, is exploring the Plutus vein. The original intent was to explore on the Plutus 200 level but because oxidation proved to be deeper than expected, the contract was recently amended to permit some of the exploration to be done on the Plutus 300 level (also sometimes known as the 275 level).

In driving the 224 level crosscut to the Norwich Footwall vein, the Norwich Hanging Wall vein was cut about 320 feet west of the Plutus shaft. The vein was slightly under 5 feet wide and contained much visible rhodochrosite. It was reported by Irving to assay about 15 percent Mn.

Little importance had previously been attached to the Norwich Hanging Wall vein because of the unfavorable results of USBM Drill Hole 6 which cut the vein a short distance west of and only 20 feet below the point of intersection with the crosscut. USBM Drill Hole 5, which cut what is presumed to be the Hanging Wall vein about 200 feet east of the crosscut, penetrated 3.6 feet of vein assaying 11.3 percent Mn and a greater thickness of low grade material. Comparison of the samples from the crosscut with the drill hole sample from Hole 6 shows the difficulty of interpreting drill hole results in deposits of this type and suggests that the assays from Drill Hole 5 may be more encouraging than might be thought at first sight. The Norwich Hanging Wall vein is also reported by reliable sources to have been cut in a crosscut on the now inaccessible Plutus 400 level, and as shown on the applicant's map is reported to have been "12 feet wide" and to have been "half quartz and half rhodochrosite"; however, regardless of whether the old reports can be accepted or not or what interpretation is made of the drill hole data, the appearance of the Hanging Wall vein, as exposed in the level, is sufficient to justify exploring it. The method by which the applicant proposes to explore the vein appears logical and reasonable. The vein could be explored at greater depth by rehabilitating the Plutus 400 level but can be explored cheaper by driving on the 225 level as no rehabilitation is required. Judging from the appearance of the vein and the occurrence of ore in the Norwich Footwall vein, the depth should be sufficient to be below the zone of oxidation. Irving states that there is no record of stoping on the Hanging Wall vein.

The relation to the Norwich Footwall (DMPA) Project and the existing DMEA Plutus contract has to be considered. As far as the DMEA contract is concerned, there should be no interference for the work will be on different veins and on different levels. There will be some advantage to the Operator as he will be able to reduce supervisory overhead and fixed costs such as pumping. The relation to the DMPA project is physically closer as the exploration would take off from a crosscut driven by DMPA funds; however, Mr. Irving points out that DMPA funds have been completely expended and all work on the Norwich Footwall vein is being carried on entirely with company funds. Irving and Nelson appear confident that they have sufficient ore on the Footwall vein to repay the DMPA loan; finding more ore on the Hanging Wall vein would, of course, improve their financial position and enhance the prospects of repayment.

Because mining is actively going on, it would be extremely difficult to prorate costs and separate expenditure if another DMEA contract is granted; therefore, a unit cost contract is essential. The Operator suggests one with a drifting cost equivalent to that specified in his present contract, and there would appear to be no objection to this. He suggests an increase in the allowance for timbering, but this would seem difficult to justify unless he can show that timbering allowances on his existing contract are inequitable or that ground conditions are different, which does not appear to be the case.

Inasmuch as two different, although neighboring veins, are being explored, it might be argued that the work should be done on two separate contracts so that the Plutus project, which has already found ore, would not be assessed royalties to pay for the Norwich Hanging Wall vein exploration should this be a failure; however, it has been the policy of the DMEA not to write separate contracts when exploring on contiguous properties even when different objectives are being sought. It is, therefore, assumed that if DMEA supports the Norwich Hanging Wall exploration, it will be by means of an amendment to Contract Idm-E604.

On the other hand, the Norwich Footwall vein has reserves of ore which have been made accessible through a DMPA loan; the proposed exploration on the Hanging Wall vein would in no way benefit this ore, and it seems, therefore, logical and reasonable that any ore produced from the Norwich Footwall vein should be excluded ~~by~~ from DMEA royalty repayment. As an additional safeguard, the proviso might be added that any ore trammed through any drifts on the Hanging Wall vein would be assessed royalty regardless of its origin.

In summary, on a technical basis, the Norwich Hanging Wall vein appears well worth exploring. If possible complications occasioned by the existence of a now completed DMPA project on the property -- though on a different ore body -- do not present an obstacle, DMEA participation in the exploration of the Norwich Hanging Wall vein proposed by the Operator is recommended. This work would be most logically done by amending the existing DMEA contract rather than considering it as a separate project.

Distribution:
DMEA (Orig. & 3)
USBM (2)
USGS (SRO)
Docket
Geologist

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
15 1954

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

Not to be filled in by applicant

Docket No. ~~3252~~
Metal or Mineral Manganese
Date Received
Estimated Cost $36,313.
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Irving G. Irving and Robert H. Nelson, Co-Partners
43 Hirbour Bldg., Butte, Montana

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

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

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

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

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

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

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

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. See copies of leases and options on file with Government under DMA-1790 and DMEA-2874.

(*e*) If you own the land, describe any liens or encumbrances on it Leases and all equipment & machinery mortgaged to U. S. A., under GSA contract

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

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

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

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

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

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

16—66551-1

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

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. See Appendix A, under 4-c, and also map accompanying app.

(*c*) The work will start within 10 days and be completed within 12 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See Appendix--5-d reference

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

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

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

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

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

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

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project. none

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

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

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

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

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

[x] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated December 19, 19~~5~~ (1953)

Irving G. Irving and Robert H. Nelson
(Applicant)

By Irving G. Irving
Robert H. Nelson

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

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

Appendix A

December 19, 1953

To Accompany DMEA Exploration Project Application of I. G. Irving andRobert H. Nelson, 43 Hirbour Bldg., Butte, Montana.
on

NORWICH - PLUTUS MINE (Manganese)

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In answer to Question 3, On Form MF-103

a. The land to be explored consists primarily of the Norwich Claim, Survey # 2724, but some of the easterly drifting that has been proposed could cross the south side line and enter the Plutus Claim, Survey # 3018, and although the vein obviously apexes in Norwich ground, it is conceivable the work could, directly and indirectly, benefit the Plutus Claim. Both claims are held under lease by the applicants and are located in what is called the Independence (unorganized) Mining District, , in Sections 10 & 15, R.8 W., T. 3 N., about two miles west of Butte, Silver Bow County, Montana.

b. The Norwich Claim has always been known as such, but the Plutus Claim was also known as the Butte and Plutus, which was the name of a company who prospected it for silver, about thirty years ago.

c. The applicants have a lease and option on the Norwich Claim, which terminates on June 30, 1956. However, it is expectted that the claim will be owned by the applicants by that time, as they are paying for it, at the rate of 12½% (royalty) on every ton of ore produced, and have already paid over seven thousand dollars on the fifty thousand option price, and have really only started to get into production. The applicants have a contract with the GSA to deliver 30,000 tons of manganese ore, and have ample ore reserves to meet this contract schedule and before fifteen tho sand tons of ore is produced the property will have been bought, on the basis of the grade known to exist.

The applicants own a one-quarter of the Plutus Claim, and have a lease on the remaining interest. This lease terminates on June 30, 1959.

d. Copies of these leases and options are on file with two government agencies--the DMPA, DMA, and DMEA. See copies of Norwich and Plutus leases filed with DMA Docket # 1790, and copy of Plutus lease, and extension, on file with DMEA, Docket # 2874.

e. The leases and options, plus all equipment and machinery are mortgaged to the United States Government, through the GSA, under GSA. Contract No. GS-10P(D)-3, Irving G. Irving and Robert H. Nelson.

In Answer to Question 4, on Form MF-103---

a. Mining and development is currently in progress on both claims. Under GSA Contract No. GS-10P(D)-3, a major development project, including rehabilitation of the Plutus shaft and the driving of a long crosscut northwest to the Norwich ore reserves on the 244 level (off the Plutus shaft) nears completion and

COPY

as a matter of fact, will be completed before the end of 1953. At this time the GSA funds put up for development will have been spent, unless additional funds are granted for further advancement of the program.

On the Norwich claim, which is operated by sub-lessees, under a "split check" system, the Norwich shaft is being sunk to meet the crosscut coming over from the Plutus shaft, on the 244 level. The Norwich Mine has had a production of about 335 LDT a month for he past three months of ore averaging 22.8% Mn, and about 5.5 ounces in silver.

Off the Pluts shaft (vertical) there are now three working levels, the 200, 244 and 275 levels. There is also an old 400 level, which is now under water. Off the Norwich, inclined shaft, there are three old upper levels now pretty well mined out. Both shafts are equipped with adequate surface installations, including electric power.

The operation is being conducted by the applicants, copartners, operating under the name of "Norwich Mine".

All mine workings, excepting the upper two Norwich levels, and the Plutus 400 level are open to examination.

4-b.

The Plutus was prospected thrity years ago for silver ore, with negligible production, although considerable manganese ore was disclosed at the time.

The Norwich Mine produced, during War 11, about 9,700 LDT of manganese ore assaying 24.6% Mn, and about 5.0 ounces silver.

Under present management, during the past fourteen months, about 3,000 tons of manganese ore has been produced averaging about 22.0% mn.

A recent ore reserve calculation shows the following on the Norwich Claim:

a. Proved and Probable ore, above the 244 level----

	Tons	% Mn	oz Ag
	23,000	22.0	4.4

b. A blockscalled a combination of Probable and Prospective ore------ below 244 level

17,700	19.3	4.0

c. Additional Prospective ore, above and below the 244 level:

39,000	18.0	2.5

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In addition to the above there are indications that about 5,000 tons of good grade ore is presently indicated on the Plutus Vein, with more to be shown as DMEA Contract # 2874 proceeds.

Appendix A (continued)

To accompany application of Irving G. Irving and Robt. H. Nelson, 43 Hirbour Bldg., Butte, Montana. --Norwich-Plutus Project

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4-c(Mf-103)

The general geology of the deposit has been described in Exhibit A, supplement to MF-100, accompanying DMEA-#2874, which is on file.

Our present proposed project involves drifting easterly 375 feet, and westerly 100 feet, with 450 feet of raising to be located later at advantageous points, on the strong Norwich Hanging Wall Vein exposed recently in the 244 level crosscut, about 320' northwest of the Plutus shaft. The vein is strong and prominent and samples taken on both walls of the crosscut show it to average---4.4 feet of 14.8% Mn and 1.7 ounces in silver.

A crosscut south off the easterly drifting, at a point to be determined by the strike, and nature of the structure as drifting proceeds, should be sent out to investigate the mineralization shown in B of M. DDh #5. See Maps. This crosscut might require about 75 feet of work.

The project seems meritorious not only because of the strength and grade of the vein presently exposed, but also because it is obviously the main Norwich Vein structure, traceable on the surface for about two thousand feet, and disappearing under the rhyolite on the east, and containing several manganese oreshoots, and because the easterly drifting will, in about 130 feet, explore the vein shown 150 feet vertically below on the Plutus 400 level. Here, if the maps be consulted, will be seen a very strong, wide vein that has every indication of being good manganese ore. It was mapped, thirty years ago, by a very responsible geologist, as being about 12 feet wide and being--"half quarts and half manganese carbonate.

The easterly drifting should go to the rhyolite contact which should be encountered at about 375'. This is believed to be a flat-dipping dike, dipping to the east. In the adjoining Nettie and Hibernia Mines, better and wider ore was found near the rhyolite contact (which is supposed to be post mineral) for some reason or reasons not too clear geologically. And, of course, drifting easterly is drifting toward the center of the camp.

The westerly drifting (one hundred feet proposed) drives toward a known oreshoot on the same vein, on the Norwich 135 level about 200 feet away horizontally. As only one hundred feet of work is proposed, this work would be pure exploration, as the face of the drift, after the work was completed, would still be forty or fifty feet east of, and 85 feet below, the probable ore reserve block carried on the structure on the Norwich 135 level.

Regarding the possible amount of tonnage to be expected: If the drifting showed ore throughout, there could be developed, when consideration is taken of the exposure below on the 400 level and the Norwich 135 level exposure, about 65,000 tons of probable and indicated ore. But this is unlikely. However, it is quite probable that one-half of the drifting, or perhaps two-thirds, would show ore, and if this were the case at least 30,000 tons would be disclosed, which if worth $20.00 a ton, would be more tha

COPY

To accompany application of Irving G. Irving and Robert H. Nelson
43 Hirbour Bldg., Butte, Montana. Norwich-Plutus Project

4-c Continued--MF-103

sufficient ore to repay the loan being applied for. The material is expected to average at least twenty-dollar rock, under the present manganese schedule.

Incidentally this estimate of possible tonnage does not take into account ore that might be associated with Drill Hole #5, which does not seem to correlate with the vein below.

4- d and e (MF-103

The property is very accessible and is now being worked. It is only two miles from Butte--a center of supplies, manpower etc. Water is available and electric power is now on the property

Question 5-a

See discussion under 4-c above.

Question 5-d

See account of experience and background of applicants, in Exhibit A, accompanying form MF-100, accompanying application, given Docket No.---DMEA -2874, now on file.

Irving G. Irving
Irving G. Irving

Robert H. Nelson
Robert H. Nelson

COPY

Appendix B December 19, 1953

To accompany DMEA Exploration Project Application of I. G. Irving and Robt. H. Nelson, 43 Hirbour Bldg, Butte, Montana
on

NORWICH--PLUTUS MINE (Manganese)

In answer to Question 6, Form MF-103

The proposed project consists of 475' of drifting and, dependent on the results of the drifting, 450 feet of raising at locations to be selected by the operators, with the approval of the Field Team.

Where dictated by the geology and other considerations, a crosscut, not to exceed 75' in length, is proposed. This crosscut is to go south from the easterly drifting on the vein, to investigate the interesting mineralization (19.0' wide) disclosed in Bureau of Mines drill Hole #5, where a vein was evidently cut that does not correlate too well with known structures--unles complicated faulting exists. See Map.

Where warranted, not in excess of 425 samples shall be cut , at five-foot intervals, and assayed for manganese and silver.

It is proposed by the applicants that the work be done on a unit cost basis, with prices per unit (foot) being the same as in the existing DMEA project # 2874, Contract Idm-E-604, on the Plutus Vein, with the exception that the unit cost of timbering the drifts, or crosscut, be raised to $7.50 per foot. See Analysis below.

The costs expected may be summarized, as follows:
(see detail breakdowns below)

For Drifts & x-cut

Labor, supervision, taxes etc------	$29.08	per ft.
Supplies, excluding timber---------	7.64	
Timber, including lagging posts, girts, cap, blocks, wedges---	3.86	
Depreciation	.92	
Total cost per foot for Drifts & x-cuts	$41.50	" "
The cost of raising is suggested at	$35.00	" "
The cost of samples should be figured @	$ 2.00	each

DETAILED ANALYSIS

A. Timbering (cost per foot based on 5.5 foot set)

Supplies (2 post, 2 girts, 1 cap, Butte prices)---	$9.55
Lagging, back and sides (at least 155 bd. ft) of 2" stuff, altho some 3" lagging often required in back, @ $63.00 per thous.	9.75
Blocks--40 bd. ft.	1.45
Wedges (at least ten) @ 5¢ each	.50
Total cost--supplies	$21.25

(see next page for labor and total)

COPY

I. G. Irving & Robert H. Nelson DMEA Application Norwich-Plutus
43 Hirbour Bldg, Butte, Montana

Timbering Analysis Continued :

Supplies (from previous page) ----------	$21.25
Labor(two good miners-½ shift to put set in) @ $20.00 (including o.t. & taxes)	20.00
Total cost per five-and a half foot set----------	$41.25
* Cost per foot(timbering)	$ 7.50 *

B. Other supply costs, on bais of 5-ft round

Powder (40 lbs @ $22.50/100lbs)	$ 9.00
Caps, fuse, steel, bits etc.	3.03
Hoses	1.27
Ties	.70
Pipe and fittings	3.90
Track (25# rail)	4.75
Misc. supplies	2.85
Repair of all equipment and maintainence	4.95
Power	7.75
Total supply cost (except timber) 5.0 rd	$38.20
Cost per foot	$ 7.64

C. Analysis of labor, supervision per day--
(Assuming an average of 3.333' feet per day throughout the month)

Labor (two good contract miners, @$20.00/day plus O.T.	$43.20
One trammer @ $15.71/day, which plus o.t. is-----	17.00
One hoistman (½ time, @ $17.00/day " " " "	9.22
One top man, caging cars and supplying @$14.71 " "	7.94
Total	$77.36
Plus payroll taxes	9.60
TOTAL LABOR COST	$86.96
Plus supervision (½ time @ $600.00 per mo/	9.88
Per foot cost, at aver advance of 3.333'/day	$29.08

* Note: Cost for timber itself, in cost of timbering (from previous page) is $3.86 per foot.

Irving G. Irving

Robert H. Nelson

COPY

EXPLORATION PROJECT CONTRACT
IRVING G. IRVING and ROBERT H, NELSON, PARTNERS
on
NORWICH and PLUTUS CLAIMS
Butte, Montana

In consideration of the waiver by the United States of America of the requirement of the Owner's consent to Lien, as set forth in paragraph 2(b) of the attached Exploration Project Contract, the undersigned jointly and severally hereby guarantee payment to the United States of America of any royalties, as specified in said Contract and any future amendment thereof, upon any and all ore which is mined within ten years of the date of said Contract from the land described in Article 2 thereof, regardless of whether the undersigned have any interest in the property covered by the said Contract, or any part in the mining operations at the time said ore is mined. If for any reason the net smelter returns or other net amounts, from operations that would be subject, under the siad Contract and any amendment thereof, to such payments to the United States of America, are not available as a means of measuring the amount of such payment, the agree and undertake jointly and severally to make such payment according to the best estimates of the amount that can be reasonably made, and in the event of dispute as to such estimate, the undersigned agree jointly and severally that the determination thereof by either the Administrator of Defense Minerals Exploration Administration, of his designee, shall be final and binding upon the undersigned.

Dated December 19, 1953

Irving G. Irving (Seal)
Irving G. Irving

Robert H. Nelson (Seal)
Robert H. Nelson

COPY

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 18 1954

January 15, 1954

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

Re: Docket No. DMEA-2874 (Manganese)
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-E604

Dear Mr. Selfridge:

Attached are the original and two signed copies of Amendment No. 1 to the referenced contract.

Distribution of this amendment is being made in the usual manner.

Sincerely yours,

A. E. Weissenborn

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

Attachment

cc: Finance Officer w/encl.
USBM (2)
Nickelson

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

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

January 11, 1954

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

Re: Docket No. DMEA-2874 (Manganese)
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-2604

Dear Mr. Irving:

Enclosed are the original and six copies of Amendment No. 1 to your Plutus contract. If the terms and conditions of this amendment meet with your approval, please sign all copies, retain that copy marked for the Operator and return the others to this office. In the event you should find the amendment not acceptable, please return all copies unsigned together with your suggestions for any changes you might propose.

You will note in the amendment that provision has not been made for the purchase of a larger capacity pump. Instead, the amendment allows a daily pumping allowance for a period of 150 days, such allowance to be used in the event a larger pump is purchased. The daily allowance apparently represents the maximum participation which DMEA officials believe should be shared by the Government.

Sincerely yours,

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

Enclosures

cc: USBM (2)
DMEA (2)
Nickelson

Rutledge
Martin

JAN - 7 1954

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 2874, Manganese
Irving G. Irving & Robert H. Nelson
Plutus mine
Silver Bow County, Montana
Contract No. Idm-E604

Dear Mr. Weissenborn:

We are enclosing the original and five copies of a proposed amendment, Amendment No. 1, to the referenced contract, signed by the Administrator for the Government, together with Fig. 2, Vertical Longitudinal Section A-A', Plutus Mine, Silver Bow Co., Montana.

If the terms and conditions of this proposed amendment are satisfactory to you and the Operator, all six copies should be signed and the usual distribution made.

Sincerely yours,

George C. Selfridge (JHB)
Chairman, Operating Committee

Enclosures

APPROVED:

J. H. Hedges (JHB)
Member, Bureau of Mines

D. M. Larrabee (JHB)
Member, Geological Survey

Copy to: Docket
Oper. Comm.
Code 400
Adm. Read. File
Louis Paviledges, USGS
Gilbert DeHuff, USBM
Field Team, Reg. 2

FARutledge/ls 1/6/54

R.C.B. 1-7-54

FILE COPY
SURNAME:

Rubin

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

January 5, 1954

Memorandum

To: The Administrator
Through: Mr. W. S. Martin

From: Chief Counsel

Subject: Irving G. Irving and Robert H. Nelson, Partners
Docket No. DMEA-2874 (Manganese), Contract Idm-E604,
Amendment No. 1

Attached in satisfactory legal form for execution is Amendment No. 1 to the above-mentioned contract, subject to the attachment of the map described therein.

J. L. Hofflund

J. L. Hofflund
Chief Counsel

Attachments

HCRubin:ep

Copy to: Docket
Mr. Martin
Mr. Hofflund
Mr. Rubin
Chron.

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

December 30, 1953

MEMORANDUM FOR DOCKET FILE:

Docket No. DMEA 2874 - Manganese
Irving and Nelson
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-E604

Today Mr. Thor H. Kiilsgaard telephoned from Spokane, Washington, to discuss with Mr. Martin the need by the subject Operator to buy a larger pump.

The Operator is now pumping from the 286 level at full capacity; he is cutting a station on the 280 level and leaving a 6-foot sump. The present pump owner wants this pump back and Operator does not want to buy it since the pump will not go to a greater depth. Operator says there is a manganese vein 100 feet farther down and he hopes to go down to mine it, so in acquiring a new pump he wants to get one adequate for this work also. The shaft is unobstructed for 100' below the new level

The following facts were given about the new pump the Operator proposes to buy:

Lancaster Submersible 506-34 (?) (~~613-34~~ 6134, per Mr. Martin's note)
45 horse power
Will ~~draw~~ throw 200 gallons per minute against 400-foot hydraulic head.
Will discharge through 3-inch column and build up friction head 17 feet per 100 feet of column, so Operator will be pumping against about a 350-foot head.

Cost:	Pump	$2,048	f.o.b.
	* 300 ft. cable . . .	420	
		$2,468	f.o.b.
	Freight - perhaps	50	
	Total cost of packaged unit	- - - about $2500.00	

* Since this is a submersible pump, special rubber cable needed.

Kiilsgaard said the Operator would prefer DMEA to participate in the purchase of pump. Kiilsgaard figured according to the Associated Equipment Distributors' guide that the rental of such a pump should be about $124.75 monthly.

Mr. Martin questioned whether the Operator had thought of stage pumping. Kiilsgaard replied, "Yes," that Irving is doing it now; his pump throws water only to the 110 level and that is why he proposes to have a pump with the 400-foot head.

Mr. Kiilsgaard suggested two possibilities: participation by DMEA in the purchase of the pump at a certain percentage of its cost since the pump is partly to be used for production rather than exploration--perhaps $1800 of the $2500 cost; or to write off a certain amount on each MF-104 voucher. Kiilsgaard says that with the money allotted by the contract, it will not be possible to do as much work as originally proposed due to the water problem and the new pump required.

Mr. Martin made it clear that DMEA does not want to buy the new pump or acquire an equity in any equipment, but would rather allow some amount for pumping charges. Mr. Martin said we must be very much concerned about DMEA's double Government interest with DMPA in this project, so we must keep our contract on a straight short-form basis and not become involved in the purchase of any equipment.

Letha Scott, Secretary

FILE COPY
SURNAME:

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

5284

T. L. Chapman
3538
Chapman
Martin
O'Rourke
Porter
Selfridge
Rutledge

1483923.970
December 14, 1953

A. E. Weissenborn, Executive Office, DMEA Field Team, Region 2, Spokane 4, Washington

Relet December 1, Docket No. DMEA 2874, Contract Idm-E604, Plutus Mine, Irving and Nelson, we will prepare amendment substituting work on the 300 foot level for work east on 200 foot level. Please advise Operator.

George C. Selfridge
(24B)
G. C. Selfridge
Chairman, Operating Committee

TCHAPMAN;foc

cc: CONFIRMATION - FT. Reg. 2
Docket
Code 400
Audits Divn., Bur. Mines
Oper. Comm.
Admr. Reading File
Gilbert DeHuff, USBM
Louis Pavlides, USGS.

12-14-53

Docket Copy

AMENDMENT NO. 1

It is agreed this 2nd day of December 195 3, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, and

Irving G. Irving and Robert H. Nelson, Partners, Butte, Montana

(Docket No. DMEA 2874 - manganese)

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract Idm-E 604 of September 21 195 3 between the parties hereto be modified and amended as described in Exhibit "F" attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be December 1, 195 3.

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

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

Executed in sextuplicate the day and year first above written.

IRVING G. IRVING & ROBERT H. NELSON
(Operator)

By
Irving G. Irving

By
Robert H. Nelson

THE UNITED STATES OF AMERICA

By
~~A. E. Weissenborn, Exec. Officer~~
~~DMEA Field Team, Region II~~
C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration

Exploration Project Contract No. Idm-2004
Irving G. Irving and Robert H. Nelson
Docket No. DMEA-2674

Amendment No. 1

Exhibit "F"

The original project consisted of drifting westerly approximately 270 feet and easterly approximately 200 feet along the Plutus vein from the drift faces on the 200 level off the Plutus shaft.

Recent surface bulldozer trenching and drifting on the Plutus vein on the 200 level indicates it will be to the best interest to the Government and Operator to make the following changes and modifications under "Description of the Work" in Exhibit "A".

Add:

1. Unwater and rehabilitate the Plutus shaft to a depth of from 25 to a maximum of 56 feet below the present 244 level. Work will consist of unwatering the shaft, retimbering where necessary, moving the present shaft dividers the proper distance to install skip guides and installing these guides.

2. At the level to which the shaft is unwatered and rehabilitated cut and timber a station-crosscut in a southeasterly direction to the Plutus vein approximately 11 feet wide, 9 feet high and 10 feet long, then reduce the size to 7 feet wide, 9 feet high and 5 feet long. Total excavation will approximate 1,300 cubic feet.

3. Drift easterly on the Plutus vein, on the new level, from the face of the station, for a distance of 183.6 feet.

4. Purchase a 35 h.p. submersible pump with cable, having an approximate capacity of 225 gallons per minute at 400 foot head, priced at $2,400.

Change:
200 feet of drift on 200 level east

To:
183.6 feet of drift on new level east

Change:
200 feet of raising

To:
2, feet of raising

Agreed Unit Costs

	Original Cost	Demand Cost
Timbering 470 feet @ $5.00/ft.	$ 2,350.00	$ 2,350.00
Assaying for silver and manganese 250 samples @ $2.00/each	500.00	500.00
Drifting 470 feet @ $34.00/ft.	15,980.00	15,980.00
Change:		
Raising 200 feet @ $35.00/ft	7,000.00	
To:		
Raising 29 feet @ $35.00/ft		1,015.00
Add:		
Unwatering and rehabilitating shaft, 56 feet @ $35.00/ft.		1,960.00
Timbered station-crosscut at new level, approx. 1,300 cu. ft. @ $1.25/cu. ft.		1,625.00
Total agreed unit costs	$25,830.00	$23,430.00
Purchases:		
1 - 35 h.p. submersible pump with cable, 225 g.p.m. at 400 ft. head		2,400.00
Total Costs	$25,830.00	$25,830.00
Government participation @ 75%		$19,372.50

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

DEC 29 1953

GENERAL ... DEFENSE MINERALS ADMINISTRATION

December 1, 1953

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

Re: Docket No. DMEA 2874 (manganese)
Irving & Nelson
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-E604

Dear Mr. Selfridge:

Mr. Joe Irving, operator of the referenced contract, called at this office on December 1, 1953, to discuss certain proposed changes in DMEA exploration currently being undertaken at the Plutus mine. These proposed changes have resulted from the findings of exploration completed to date. Mr. Irving believes that if these proposed changes are incorporated into project work, they will benefit the program and add to the geologic information to be compiled from work at the Plutus mine.

Mr. Irving bases his proposed changes in project work on the premise that there appears to be an eastward rake to the Plutus ore body currently being tested. This rake is shown on the attached Longitudinal Section A-A'. Supporting evidence for this raking theory is to be had by examining the attached "Sketch Map of Surface Cuts at the Plutus Mine", which shows the Plutus vein horsetailing to the east of the Plutus shaft. Additional confirming evidence is to be noted in the accompanying "Sketch Map of the 200 level - Plutus Mine" in which the Plutus vein is shown to be rapidly diminishing in magnitude and in the grade of ore as it is followed to the east from the Plutus shaft. In fact, to the east of the shaft on the 200 level, the vein has become so discouraging that Mr. Irving does not believe that it warrants further exploration in that direction. To the west, on the 200 level, the vein remains strong but the grade of ore has diminished. This is believed to be the result of strike-slip faulting, a condition which is believed to be localized, and it is hoped that the vein will prove more encouraging on to the west. Still further evidence supporting the raking theory is shown on the 244 level sketch map which shows the vein diminishing in grade to the west while remaining very strong and of good grade at the Plutus shaft. It might be noted that the short crosscut shown on the 244 level was driven by the operator, on company account, from the crosscut currently being driven to the Norwich veins. Norwich exploration is, of course, financed by GSA, although formerly by DMPA.

Assuming that Mr. Irving is correct in his interpretation of the raking oreshoot, as depicted in Longitudinal Section A-A', it would be of little value to continue advancement of the 200 level to the east as this level would most certainly be above the oreshoot and also heading into an area devoid of any substantial outcrops. The longitudinal section indicates that advancement of the 200 level to the west will pass beneath the raking ore body; however, it should be remembered that additional Plutus vein targets outcrop to the west of the existing face which warrant exploration by continued westward advancement of this level.

On the foregoing assumption, Mr. Irving has proposed that the Plutus shaft be rehabilitated to a distance at least 100 feet below the 200 level, or 56 feet from the 244 level, and that exploration of the Plutus vein be done by a drifting to the east from the shaft on this lower level. This proposed work is shown on the previously referenced longitudinal section. Mr. Irving states that the present water level in the Plutus shaft is about 21 feet below the 244 level. He pointed out that the shaft at this location is unobstructed by debris and that he has suspended a plumb bob to a depth of 140 feet below the existing water level without meeting any obstruction. This would imply that rehabilitation of the shaft would not be anywhere near as difficult as it was above the 200 level. Mr. Irving believed that shaft rehabilitation will consist chiefly of re-lagging the shaft, occasional reinforcement of shaft timber sets, installing guides, and the moving of shaft dividers a distance of 8 to 10 inches. He believed this work and the installation of pipe, etc., can be completed at a unit cost of $35 per foot. He stated the operator will make up the difference, if costs exceed this figure.

Mr. Irving requests that funds currently allotted to raising above the 200 level be made available for shaft rehabilitation. As previously stated, he believes the shaft can be rehabilitated at a unit cost of $35 per foot which is the same as the unit cost currently allotted to raising. He therefore asks that a maximum of 56 feet of shaft rehabilitation be made payable under contract terms, that allowance be made for cutting of the station on the proposed lower level, and that the remaining 183.6 feet of eastward drifting on the 200 level be transferred to the proposed lower level. Concerning the maximum 56 feet of shaft rehabilitation, Irving has a verbal report that a station and short crosscut to the Plutus vein exists on or immediately above the 300 level. Therefore, the 56 feet is recommended as it will allow rehabilitation to the 300 level. If the crosscut is encountered above the 300 level, there will be no reason, of course, for deeper rehabilitation.

The Field Team concurs with Mr. Irving's proposal and recommends that existing eastward drifting on the 200 level be transferred to the proposed lower level. Indications are that such drifting would not only more advantageously explore the ore body in the rhodochrosite area but would also tend to more adequately confirm Irving's postulated eastward rake of the ore. Mr. Irving reports that ACM geologists have told him that some manganese ore bodies in the Butte area have a tendency to rake to the east, therefore it is believed

the postulated eastward rake of the Plutus ore should either be confirmed or disproved as soon as possible as such a postulation will have a strong bearing on continued exploration.

Another request submitted by Mr. Irving concerns the existing pump currently in operation below the 244 level. This pump is capable of operating against the existing hydrostatic head; however, it may be inadequate for deeper level work even though it is not believed that the flow of incoming water will increase to any extent. The pump is being operated at a rental rate of $75 per month, rental payments to apply to the purchase price. As of January 1, 1954, the purchase price will amount to about $1,000. Mr. Irving has requested that DMEA participate in the purchase of this pump, the purchase funds to be extracted from funds allotted to raising above the 200 level. In view of the fact that the existing pump may not handle the flow of water on the proposed lower level, the Field Team recommends that an "allowable maximum" purchase price of $2,400 be transferred from raising, such funds to be used for purchase of a larger pump in the event the existing pump proves unsatisfactory. As DMEA exploration, whether it be on the 200 level or the proposed lower level, is dependent upon the pumping of water from the Plutus shaft, it is believed that Mr. Irving's request for participation in the purchase of a pump is not unreasonable.

An attached amendment covers the proposed project changes discussed in the foregoing paragraphs. As these changes materially affect the DMEA program as outlined in the contract, they are being presented to the Operating Committee for approval. It is recommended that these changes be approved as quickly as possible in order to avoid any possible suspension of currently active project work. A telegraphic reply to this letter would be appreciated by the Field Team.

By DMEA Field Team, Region II

A. E. Weissenborn

A. E. Weissenborn, Exec. Officer
Geological Survey

M. E. Volin

M. E. Volin, Member
Bureau of Mines

Enclosures

USBM(2)
Nickelson

Dma 2874
Irving v Nelson
600

November 18, 1953

MEMORANDUM

To: Administrator, DMEA

From: T. L. Chapman, Mining Engineer
Iron and Ferro-Alloys Division

Subject: Information on various properties visited between October 18, 1953, and November 7, 1953, in Lemhi County, Idaho, Granite and Silver Bow Counties, Montana, and Salt Lake City, Utah

Left Washington, D. C., by train on October 18, 1953, at 5:30 p.m., and arrived Spokane, Washington, on October 20, at 10:45 p.m.

On October 21, conferred with various DMEA Team members, of the U. S. Geological Survey and the U. S. Bureau of Mines, concerning various contracts in operation and pending on DMEA projects.

On October 22, left Spokane at 1:00 p.m., accompanied by Mr. Nicholson of the Geological Survey, in a Government owned car, and arrived at Missoula, Montana, at 7:00 p.m. On October 23 we were joined by Mr. Johnson of the Bureau of Mines and proceeded to the Calera Mine at Cobalt, Idaho. Here we met Mr. Douglas, Manager of Calera Mines, and after a short conference Mr. Douglas and the Mine Superintendent accompanied us around the mine to the various operations.

Again on October 28 we made a short trip to the mine and through the various surface operations. Then we conferred with Mr. Douglas on mining costs and he opened up their books for our inspection.

The inspection of the underground workings shows that, while as a whole the ground was not heavy, for safety timbering was required in 70 to 80 percent of the drifting and crosscutting. At some fault areas the ground is somewhat heavy and requires close timbering. The one small heading in operation on the 7100 level was passing through a fault zone and little drilling was being done and sets were placed close together. Sills were being used which I believe are inadvisable as they will probably hang up on the middle and cause track trouble.

In a 9' X 9' tunnel on the 6850 level a jumbo set-up was being used with two drifters (two machine men and a helper). They were breaking 5½ - 6-foot rounds with 28 holes. In all drifting the burn-cut was used exclusively.

In regular drifting and crosscutting off the main haulage level (6850 level) jackleg machines were being used. All drilling was done with tungsten carbide bits, either detachable or integral with the steel. Alloyed steel was being used and steel breakage coincided with the life of the bit, which averaged about 350 feet of hole.

Regular drifts for 5' x 7' in the clear of timbering, require from 22 to 24 holes according to the standards of the district. The large number of holes used is due to the ease of putting in holes with the present machines and tungsten carbide bits. The ground could be easily broken with about 15 holes. As all holes are fully loaded with powder, the result is that 30 to 50 percent more powder is used than should be necessary. The operator has been using electric blasting but is changing back to fuse and caps. With 22 to 24 holes, the cost of electric caps is about $1.00 per foot, or about $5.00 to the round, and with fuse and caps it is about $0.75 per round. It is claimed that with electric blasting there are fewer missed holes, which may be true. With fuse and cap blasting, a number of the misses are probably due to holes being cut off on account of the excessive number of holes.

One of the main bottlenecks in the operation is the labor problem. First class miners are difficult to obtain, but the writer believes with a good instructor or shift boss the men could be easily taught to handle the work in this area. The Union leaders discourage men from making too high a footage.

All drifting and crosscutting is carried on by contract, except where ground needs timbering or spiling, which is done on a daily wage basis. The average rate amounts to about $9.00 per foot. Men on this work usually make about $20.00 per day or $5.00 above the regular scale of $15.04 per day for miners. In addition to this are holiday pay, vacation pay, and other fringe benefits.

At the time of this visit the Unions were asking another pay raise and negotiations were being carried on. The Company was not inclined to give a raise as they were following the Coeur d'Alene scale.

Due to the troubles at the Garfield, Utah, refinery, the mine is now operating at about 20 percent of capacity. The following men were employed:

24 staff men
41 men underground
10 men in the shops (⅓ to mine)
26 men on surface (½ to mine). This appears high for mine.
12 men on transportation (hauling out concentrates and bringing in supplies)

Total 113 men

For the present operation the staff force is high. Also other key men are being retained on the payroll. As a result the costs on the present operation are high.

The cost for 358 feet of drifting on the 7100 level in the past 4 months is as follows:

	Cost	Cost per foot
Labor	$3,061.91	$8.55
Labor bonus	957.12	2.67
Explosives	984.09	2.75
Nipper and hoistman	968.97	2.71
Drill repairs	331.15	.93
Steel and bits	438.60	1.23
Air	607.80	1.70
Air and water pipe	195.58	.54
Other	82.65	.23
Sub-total	7,627.87	21.31
Traming	$ 558.56	$1.56
General (Mine)	5,246.36	14.65
Sub-total	5,804.92	16.21
Timbering		
Labor	$ 1,000.25	$ 2.79
Supplies	983.74	2.75
Framing and handling	549.30	1.53
Sub-total	2,533.29	7.07
Total	$ 15,966.08 . . .	$44.59

All timber used is peeled round for drift sets. The peeling costs about 4 cents per running foot. This peeling could be eliminated with no deleterous results. With a few scabs the framing could be eliminated and smaller timber could be used (8-inch timber unframed would be as strong as 10-inch framed). Framing is done with skill saws and hand tools.

The lack of footage is one of the main reasons for high costs. A 6- to 7-foot round could be easily obtained. At present mucking time is 1½ to 2 hours and the same for drilling. Hence the round can be completed in 4 hours or less. If longer steel were furnished, longer rounds could be drilled. The miner would make more money, but the ultimate costs would be decidely less.

The high general costs of $14.65 per foot are mainly due to the property being operated on a 20 percent of capacity basis. I believe these costs would be cut in half by a full time operation.

Supply costs are as follows:

Lumber	$60.00 M
Round timber, peeled. Average	.20 per running foot
Powder	18.45 cwt.
Fuse	1.01 per 100 feet
Caps 6X	1.70 per hundred
Electric caps. Average	.22 each
Rail	160.00 per ton (45# & 24# used in mine)
Rail spikes	13.00 cwt.
Rail bolts	18.00 cwt.
Pipe	
3/4"	.11 per foot
1"	.17 " "
1½"	.30 " "
2"	.38 " "
3"	.88 " "
4"	1.35 " "
2" unions	1.34 each
2" couplings	.40 each
2" tees	.86 each
2" plug cocks	5.91 each
2" gate valves	10.80 each
2" check valves	10.34 each
1" air hose	49.40 for 50-ft. length with connections
½" air hose	16.00 for 50-ft. length with couplings
Nails and spikes	12.00 cwt.
Drift picks, 4#	1.93 each
Pick handles	.80 each
Hammer, 4#	1.90 each
Hammer handles	.70 each
Mine axes	3.17 each
Mine saws	4.70 each

The handling of the labor situation is the vital point in the possible lowering of costs. I believe this can be done with the proper supervision.

Costs will be mainly relative to the footage obtained. An increase of 1-foot-per-day should be easily obtained. The miners would make a relatively high wage, but the decrease in overhead costs would be high.

Under the present operation the cost of a bald drift should not exceed $35.00 per foot. On a full operation basis the cost should be around $32.00 per foot.

Apparently one of the main difficulties, and a common one in present day operations, is that the high cost machines such as mucking machines, trammers, etc., are idle during too high a percentage of the time.

The equipment and set-up of this operation is first class in every way.

Northfield Mines, Inc.

On October 24, 1953, accompanied by Mr. Nicholson and Mr. Johnson, an inspection was made of the camp and workings of the Northfield Mines. There was no one at the property at the time of our visit.

The ground in this area was somewhat heavier than that of the Calera Mine, but with proper supervision and good workmen should present no real difficulties. Apparently one of the main difficulties was in making openings larger than necessary. Smaller drifts and crosscuts would serve the purpose just as well as the larger one and would suffice for an operation up to 1,000 tons per day.

Some work has been done on a turn-off for the proposed crosscut in the amended contract. This work while well done is oversize and, due to this, extra heavy timber is being used. After passing out of this shear zone, the going should be better.

Peeled timber is being used, while unpeeled timber would do just as well. Timber is contracted peeled, framed and delivered at the mine at $10.00 per set. The posts are 9 feet long and the caps are 8 feet; the timber is 12 to 14 inches in diameter; 7½ foot posts and 6½-foot caps, 8 to 10 inches in diameter and unpeeled, would serve just as well or better. The framing is unnecessary. This type of timber should be delivered for $6.00 to $7.00 per set. Pole lagging is being used as a general rule. Lumber costs $80.00 per thousand delivered at the mine.

Pressure appears to be mainly from the sides. With proper lagging the side pressures could be easily relieved and it appears that after the ground is open for awhile the pressures and swelling stop.

We believe with good supervision and good workmen the costs as submitted in the amended contract can be met.

On our return to Cobalt we met Mr. Milo Mann, who was in charge of the operation and has just returned from Eureka, Nevada. He advised that they were closing down for the winter and that all rental machinery was being removed. The closing down for the winter had been cleared with the Government.

Montana Coal and Iron Company
Black Pine Mine

On October 25, 1953, accompanied by Mr. Nicholson and Mr. Johnson, an inspection was made of the Black Pine Mine. The work was being carried out by the sub-contractor with a crew of two men in the upper level headings and one man was being used to prepare the lower level for operation.

Five to five and one-half feet were being broken per round, using column-mounted drifters. The drifts were carried about 5' X 7' in the clear and timbered where necessary. A mucking machine was used but all tramming was done by hand. Seven holes were used to break the ground in the drifts along the veins and up to 12 holes in crosscutting. The miners used a V cut and apparently were goood at breaking ground, taking advantage of all cracks and slips. The average for powder was about 5 pounds per foot.

While about 60 percent of the ground was timbered, it was mainly necessary for safety and except for some fault zones the ground was not heavy.

The work was being carried out in a miner-like fashion and it is doubtful if the ground breaking and footage could be improved very much.

A consulting geologist available to inspect the work about once a week could be used to advantage to check on the numerous faults that cut the veins.

It is quite probable that when the lower tunnel is in about 500 feet a Mancha Mule will be requested. In an operation of this type a horse or mule will be just as efficient and much cheaper.

Herb St. Clair is contracting the work and is part owner of the property.

The Bradley Mining Company
Ima Mine

On October 27, 1953, accompanied by Mr. Nicholson, the Ima Mine was inspected. Mr. Charles Hathhorn is Manager at the property and assisted us in every way in inspecting the workings and opened up his books for the cost accounting.

All mine work is being carried out in a good workmanlike manner. Drilling is being carried out with column mounted drifters and the average round broken is 5½ feet. The ground is hard and 22 to 24 holes are used per round with a 3 to 5 finger burn cut. Nine to ten pounds of powder per foot are used with fuse and 6X blasting caps.

Timbering is required for about 33 percent of the drifts and crosscuts. The ground except at some fault intersections is not heavy and most of the timbering is for safety from falling rock. About 10" unpeeled round timber is used and is framed in their mill with a standard framing set. The cost for framing is about 80 cents per set. The timber laid down at the mine costs 15 cents per running foot. Sawed lumber costs $60.00 per thousand board feet.

Tungsten carbide bits are used for drilling with standard carbon steel. The bits average about 300 feet of hole and the steel stands up to about the same footage. They get results from carbon steel about equal to the alloy steels used by other operators. It is claimed this is due to the fact that they have an extra good man on handling this type of steel. The average bit costs $12.50 and hollow carbon steel costs 18 cents per pound.

Twenty pound rail is used in regular drifts and 30 pound rail on the main haulage level. In much of the older work 12 and 16 pound rail was used. Rail costs $157.00 per ton in carload lots; track spikes $14.00 per cwt.; and track bolts $20.00 per cwt.

General costs

Powder	$19.00 cwt.
Fuse	1.12 per hundred feet
Caps 6X	1.87 per hundred
Electric caps, average	.22
Pipe	
½"	10.75 per hundred feet
3/4"	13.09 " " "
2"	42.72 " " "
3"	90.00 " " "
4"	137.00 " " "
3" iron cocks	19.50 each

All work is carried out on a day's-pay basis and a 6-day week. No contracts are let and no bonuses are paid. The daily wage is as follows:

Miners	$14.68 per shift
Helpers	13.76 " "
Muckers	12.93 " "
Motormen	14.68 " "
Shiftbosses	525.00 per month
Engineers	452.00 per month

The following costs for 301.5 feet of drifting are taken from the Operator's Monthly Report for September 1953, on Contract No. Idm-Eh27, Docket No. DMEA 2635:

	Cost	Cost per foot
Labor	$3,119.59	$10.35
Supervision	811.96	2.69
Explosives	1,080.95	3.58
Timber	20.70	0.07
Pipe	81.61	0.27
Track	251.52	0.83
Drill steel & bits	689.25	2.29
Other supplies	702.67	2.33
Depreciation	1,052.85	3.49
Payroll taxes,FICA	71.56	0.24
Liability Insurance	60.14	0.20
Workmens Compensation	253.41	0.84
Total operating cost	$8,196.20	$27.18

The charge of $3,507.50 for "New Buildings and Improvements" for 3,000 feet of drifting and crosscutting amounts to $1.17 per foot, or a total of $28.35 per foot for the operation. This operation indicates that under similar conditions a good operator can handle labor situations and other difficulties and keep the costs down to a reasonable figure.

No major suggestions can be made to improve the conditions at Ima. The cost of explosives and drill steel and bits are high and might be cut.

The cost allowance in the above contract is $32.0325 per foot for 3,000 feet of drifting and crosscutting.

Taylor-Knapp
<u>True Fissure and Durango Mines</u>

On October 28, 1953, at 4:00 p.m., accompanied by Mr. Quinlan of the U. S. Geological Survey, I arrived in Philipsburg, Granite County, Montana. Mr. Don Johnson, Manager of the Taylor-Knapp operations, was contacted and arrangements were made to visit the True Fissure workings on the morning of October 29. Mr. Zoldok of the U. S. Bureau of Mines joined us on the evening of the 28th.

On October 30, Mr. Johnson accompanied by Mr. Quinlan, Mr. Zoldok, and myself, went through the workings of the True Fissure Mine. Outside of being somewhat rough and sloppy on the bottoms, the mine was in fair condition. Only one heading was being driven at the time. A

Jackleg drill was being used and a 5-foot round was being put in with one piece of steel. The ground was easily drilled and a 22 hole round could be drilled in 2 hours or less. The ground breaks good and clean, a burn cut being used. Tungsten Carbide bits are used integral with alloy steel. The bits average 500 feet of hole or better.

The lack of footage is the main reason for high costs. Using a longer piece of steel, a longer round could be readily broken and mucked out. Miners are paid $9.50 per foot for drilling and mucking out a round. If timbering is necessary, the men work on day's pay. From 10 to 20 percent of the openings need timber. In DMEA work performed in the past there was only one short area of heavy ground encountered. This necessitated retimbering and the swelling has stopped.

The DMEA work in the past has been carried out inefficiently. The main reason is due to the labor situation. The Philipsburg District has become pretty much a leasing area and the resident miners do not do well on day's pay. As leasers they do well enough by working short hours and as a whole it is difficult to get them to put in a full shift at day's pay or on contract. With the closing down and curtailing of the lead-zinc districts, it is possible there may be more miners available for this area. In the past the labor cost has been about $23.00 per foot. With better footage which is possible this should not exceed $18.00 per foot.

The other reason for high costs is inefficient use of high cost machinery, such as trammers and mucking machines. The ground as a whole is easy breaking, but easy drilling has caused the use of an excessive number of holes and hence a high cost for drill steel, bits and explosives.

As a whole our allowance for timbering has been low at $5.00 per foot and with efficient work will run around $7.00 per foot.

With good supervision there is no reason that the cost of a bald drift should exceed the $32.20 per foot as presented in the contract, now in the hands of the applicant. If objections are made to the timbering costs, an allowance to $7.00 per foot should be made with a small increase in the feet of timbering allowed.

The standard wage for miners if $14.71 per shift or $15.74 on a 6-day week basis. In addition are the fringe benefits of holiday pay and vacation pay, and taxes.

The average cost of timber is $47.50 per thousand board feet for sawed or round unpeeled.

The cost of tungsten carbide bits integral with alloy steel is as follows:

1-7/16" bit, 6' steel	$23.70
1-15/32" bit, 4' steel	22.05
1-1/2" bit, 2-1/2' steel	20.55

Detachable bits (tungsten carbide)

1-3/4"	15.60
1-1/2"	13.85
1-3/8"	12.10

Rail	$160.00 per ton
1" pipe	.2237 per foot
2" pipe	.47 per foot
Vent tube: 8"	69.35 per hundred feet
12"	90.25 per hundred feet
Ingersoll Jackleg machine	575.00

American Machine and Metals, Inc.
Trout Mining Division

On October 30, 1953, Mr. Quinlan, Mr. Zoldok, and I, accompanied by Mr. Rey McCloud, Manager of the Trout Mining Division, visited the operating properties of this company at Philipsburg.

The operations are carried out entirely on a leasing basis and for this reason it is difficult to arrive at costs of the various operations.

The work is carried out in usual leasing style. The drifts are rather dirty and sloppy and rather small when vent pipe, etc., is installed.

Two drifts were being driven by leasers at the time of the visit. These drifts on different levels were in the same type of rock, a garnetized limestone. The ground is hard and does not require any timbering. Stoping machines were being used for drifting with detachable carbide bits. Fifteen holes were drilled per round with V cuts and an average break of 3 feet per round. On one level a mucking machine was used and on the other level the work was done by hand mucking, with the time of mucking being nearly the same in each heading. The average for the carbide bits was only 98 feet per bit. The bits broke at the bit shoulder and the carbide inserts held up well. This is probably due to the use of the stoping machines which, due to their unsupported weight, throw heavy side pressures on the steel and bits. There is little doubt that with a Jackleg or mounted drifter a 5-foot round could be drilled with a good efficiency from the bits.

About 30 percent of the ground is timbered. Sawed lumber costs $55.00 per thousand board feet, and round timber unpeeled costs $36.00 per thousand board feet.

Timber is framed, which is unnecessary when drifts are not in ore but necessary when in ore so that square setting can be carried above the drift sets in the stopes. The mine has a regular framing setup.

The Mullin Mine was visited, which is the property covered by the company in its application for DMEA assistance. No equipment or buildings are on the property and it will have to be entirely equipped for the operation.

The shaft collar is in bad condition and as far as could be seen the rehabilitation work would be somewhat difficult. It appears that the rehabilitation cost of the applicant of $68.88, less depreciation costs of head frame, power line and buildings, is justified.

It will be necessary to erect a head frame, a building for hoist, compressor and shop (about 16' X 24'), and 2,000 feet of power line with transformers. This is not included in contract as written.

Mr. McCloud still maintains that it takes two men one day to frame a set of timber for a 2-compartment shaft. This work should be easily done by two men in 4 hours or one man in 8 hours.

Making a disallowance for depreciation on installations, it is probable that the costs will run close to those presented by Mr. McNabb ($112.48), or those of Mr. Zoldok ($114.44).

Making a disallowance for depreciation, it is probable that the drifting costs should be about the same as that presented to Taylor-Knapp of $32.00 for a bald drift. Allowance for timbering should be increased from $5.00 per foot to $7.00 per foot.

The answer to the problems at the operations of the Trout Mining Division of the American Machine and Metals Company depends on how well the management and supervisory staff can handle labor.

Irving and Nelson
Plutus Mine

On October 31, 1953, accompanied by Mr. Zoldok, we drove to Butte from Philipsburg and met Mr. McNabb of the U. S. Bureau of Mines. Mr. McNabb accompanied me to the Plutus Mine where we met Mr. Nelson who supervises the operation. The surface setup at the mine is good, and no money has been wasted.

The underground workings are clean and being carried out in a workmanlike manner. The drifts and crosscuts are oversize, being 8' high and 9' wide in the clear. All the openings to date have necessitated timbering. The ground is rather soft and sluffs badly, though with the exception of fault zones it is not heavy. A considerable saving could be made by driving smaller openings.

They were just starting DMEA work and expected to drive two headings, one east and one west. This work will not be too fast as they save ore while drifting, which at times necessitates shooting out the waste and then stripping the ore. In this way the operators will probably pay their share of the operation.

Jacklegs are used in all the drifting and crosscutting. Usually more holes are drilled than are necessary. The crosscut to the Norwich Mine [USA Contract GS-10P(D)-3] is a good example of difference in miners. Working two shifts, one miner puts in 20 six-foot holes and breaks about 5 feet. The other miner puts in 17 holes and breaks over 6 feet. This is good proof that as a general rule more holes are used than are necessary. As a burn cut is used, one hole is not shot. With a 5' X 7' drift it would not require more than 12 holes to break the ground. In drifts the ground probably could be broken with 8 or 9 holes.

In order to obtain the better miners in the area, $1.00 per day is paid above the Butte scale, making the wage $17.80 per day on a 6-day week.

The labor costs for crosscut, with miners on contract for breaking the ground and day's pay for timbering, are as follows per shift: (All ground is timbered and the average is 3½ feet per shift.)

	Per Shift	
2 miners	$43.24	
Trammer, trackman, etc.	17.80	
½ hoistman and topman	16.77	
Total		$77.81
Taxes		9.72
Supervision		9.75
Total labor cost for 3½ feet crosscut		$97.28
Cost per foot for labor and supervision		$27.79

With two headings under the DMEA contract and two headings (one on vein and crosscut on GSA contract), the overhead costs will be cut from one-half to three-fourths.

Costs for supplies for a 6-foot round are as follows:

Powder	$8.85		
Fuse and caps	2.08	Explosives per foot	$1.82
Steel and bits	5.76	Cost per foot	.96
Power (Hoist, compresser)	7.50	" " "	1.25
Pipe, second-hand 2"	2.50	" " "	.42
Track, 30#	4.00	" " "	.67
Ties	.60	" " "	.10
Hose	1.28	" " "	.21
Repairs Shovel, etc.	5.00	" " "	.83
Timber	23.55	" " "	3.93
Service cost timber	2.35	" " "	.39
Miscellaneous supplies	6.50	" " "	1.08
Total supplies	$69.97	" " "	$11.66

Total cost labor and supplies for single heading operating through shaft. $39.45

Posts and caps are bought framed; $1.85 each, 12" round, unpeeled.
Girts cost $1.00 each.
Sawed lumber $60.00 per thousand board feet.

Mr. Nelson handles the operation for the partnership and Mr. Irving the business end. Mr. Nelson is a good operator on the job. Mr. Irving is good at handling the business end of the operation.

Except for reducing size of openings, there is little that could be done to improve operations.

- - - -

Entrained from Butte, Montana, the evening of November 2 and arrived in Salt Lake at 9:00 a.m. November 3. During November 3 and 4 I conferred with members of the DMEA Team of the U. S. Geological Survey and the U. S. Bureau of Mines and Mr. Ed Snyder of the Combined Metals.

A difficult thing to explain was why such companies as the U. S. Smelting with a good sized operation had higher costs than a number of the small operators.

After a lengthy interview with Mr. Ed Snyder of the Combined Metals the fact seemed to be that a large part of the trouble depends on management and supervision. The tendency is to follow along with the labor and little effort is made to correct this tendency.

The inability to handle men seems to be the main drawback; that it can be done is proved by the management at Ima. It appears that the management and supervisory crews like to follow the tendency of the laborer and take it somewhat easy.

Many thanks are due to the U. S. Geological Survey and the U. S. Bureau of Mines members of the DMEA Teams and to the management of the various mines visited for their complete cooperation and assistance in arriving at costs and methods of operation.

Entrained at Salt Lake at 6:20 a.m. November 5, and arrived in Washington on November 7 at 8:40 a.m.

As the operation of the projects is in the hands of the operator, it is difficult to say how the operations may be improved. One possible answer is for the Government to set unit costs at which they will enter into contracts and then it will be up to the operator to try to meet these costs.

Thos. L. Chapman
Mining Engineer

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 23 1953

November 18, 1953

Mr. Harold E. Swim
Regional Comptroller
Office of the Regional Comptroller
Federal Office Building
909 First Avenue
Seattle 4, Washington

Re: Docket No. DMEA 2874 (manganese)
Irving G. Irving and Robert H. Nelson
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-2604

Dear Mr. Swim:

This will acknowledge receipt of two checks, Nos. 14,253,969 and 14,253,971, both in the amount of $12.75. It is our understanding that these checks represent royalty repayment to DMEA for ore produced from the Plutus mine at Butte, Montana, which is currently being explored under DMEA Contract Idm-2604.

To keep our files current on production from properties under DMEA contract, we require that a copy of the settlement sheet for each shipment of ore be attached to royalty checks forwarded to this office. Most of these settlement sheets as well as checks are mailed to us directly from the smelter; however, some are mailed from the mine operator. We would therefore appreciate your attaching to any future checks payable to us from ore produced at the Plutus mine a copy of the settlement sheet.

We are not familiar with settlement sheets issued by General Services Administration, but we assume such sheets show the tonnage, grade, and the manner in which payments to the Operator and to the Government are computed.

Your attention to the foregoing request will be appreciated.

Sincerely yours,

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

cc: DMEA (2)
USBM(2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
xxxxxxxxxxxxxxxxxx
No. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 23 1953

November 18, 1953

Mr. Irving G. Irving
Irving and Nelson
64 Hirsour Building
Butte, Montana

Re: Locket No. DMEA-2874 (manganese)
Plutus Mine
Silver Bow County, Montana
Contract Dm-2604

Dear Mr. Irving:

We have recently received two checks from General Services Administration in Seattle, Washington, both in the amount of $12.75, for ore shipped from the Plutus mine. However, we did not receive a copy of the settlement sheets for these shipments and therefore have no way of knowing the tonnage, grade, or manner in which these repayments were calculated. As we must have such information to keep our files current on properties making DMEA royalty repayments, we have written GSA asking that we be given copies of any future settlement sheets from ore produced at the Plutus mine.

For the present time, however, we would appreciate your sending us a copy of the settlement sheets as pertaining to the aforementioned checks. We do not like to bother you for this information but we must have it. We hope that in the future such information will come direct from GSA.

Thanking you in advance, I remain,

Yours truly,

Thor H. Kinlsgaard
For: R. L. Weissenborn
Executive Officer, DMEA
Field Team, Region II

cc: DMEA (2)
USBM (2)
Nickelson

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 9 1953

GENERAL SERVICES ADMINISTRATION

Office of Regional Comptroller
Federal Office Building
909 First Avenue
Seattle 4, Washington

October 30, 1953

In Reply Refer To: 10CPR

2874

U. S. Department of Interior
Defense Mineral Exploration Administration
South 157 Howard Street
Spokane 4, Washington

Attention: Mr. A. E. Weissenborn, Executive Officer
DMEA, Field Team, Region II

Gentlemen:

Your letter of October 23, 1953, enclosing copy of Contract Idm-E-04, is received.

In addition to your letter we are now also in receipt of letter dated October 26, 1953 from Irving & Nelson, and together they serve to satisfy quite satisfactorily the conditions set forth in our letter of October 15, 1953 and will enable this office to process royalty deductions for you from Plutus ore payments to Irving & Nelson.

Commencing with payment for Lot No. 12 from the Plutus Mine we will prepare our disbursement schedules in such manner that you will be mailed checks by the Treasury Disbursing Office, drawn payable to the Treasurer of the United States, in the amount of the royalties as computed by this office.

Very truly yours,

HAROLD E. SWIM
Regional Comptroller

Robert H. Nelson

Irving G. Irving

NORWICH MINE
Hirbour Building
Butte, Montana

October 26, 1953

Mr. A. E. Weissenborn, Exec. Officer,
DMEA Field Team, Region 11,
S. 157 Howard Street,
Spokane 4, Washington

Subject: Docket No. DMEA 2874 (manganese)
Irving G. Irving & Robt. H. Nelson
Plutus Mine, Silver Bow Co., Mont.
Contract No. Idm-E604

Dear Al:

Enclosed is a copy of my letter to Mr. H. E. Swin, of the GSA, authorizing him to make deductions, for the DMEA, from all shipments of Plutus mine ore, in connection with the captioned contract. I trust this will cover the situation, and if not, please advise.

Sincerely yours,

/s/ Joe

I. G. Irving

C
O
P
Y

Robert H. Nelson

Irving G. Irving

NORWICH MINE
Hirbour Building
Butte, Montana

October 26, 1953

Mr. Harold E. Swim,
Regional Comptroller,
General Services Administration,
Federal Office Building
Seattle 4, Washington

Re: GSA Contract GS-10P(D)-3 (Manganese)
Irving G. Irving & Robt. H. Nelson
Butte, Montana, and

DMEA Docket No. 2874 (manganese)
Contract Idm-E604, Plutus Mine
Irving G. Irving & R. H. Nelson

Dear Mr. Swim:

Please refer to a letter from your office, signed by Mr. R. V. Oliver and dated October 16, 1953, and addressed to the Defense Minerals Exploration Administration, for the attention of Mr. A. E. Weissenborn, Executive Officer. And also, to a letter, on the subject matter, dated October 23, 1953, from Mr. Weissenborn, addressed to you.

In the letter first referred to, the matter of making deductions from certain Plutus ore shipped by Irving and Nelson for repayment of an exploration loan, from the DMEA, is discussed. Certain conditions were to be met. Among these the necessity of getting an authorization from Irving and Nelson was mentioned, and also it was pointed out that Irving and Nelson would have to invoice you separately for the shipment from which the deductions were to be made, or otherwise designate them. You also required a copy of Contract IDM-E604. The latter, I believe, has been sent you by Mr. Weissenborn, as is indicated in his letter of October 23, above referred to.

The matter of designation of the shipments was discussed by us in our recent phone conversation. We will mark all Plutus shipments as such on the regular Acceptance Invoice we receive from the Domestic Manganese And Development Co, at your Butte depot, and also further mark them with the letters -"DMEA". Let it be also mentioned that it has been agreed that all Plutus ore shipments (as distinct from those coming from the Norwich Mine, and so marked) will be subject to the deduction required by the DMEA. As for authorization, please refer to the paragraph to follow:

Your office is hereby authorized, in connection with our contract (No. Idm-E604) with the Defense Minerals Exploration Administration, to make the deductions required by the terms of the previously mentioned contract, until the terms and conditions of the contract, in this connection, have been satisfied. The amount of the deduction to be made is specified in the above-mentioned contract and are to apply on all shipments of ore from the Plutus Claim, starting with shipment No. Lot 12.

Very truly yours,

/s/ Irving G. Irving
Irving G. Irving

Robert H. Nelson

C O P Y

C O P Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

October 25, 1955

Mr. Harold E. Swim
Regional Comptroller
Office of the Regional Comptroller
Federal Office Building
909 First Avenue
Seattle 4, Washington

Re: Docket No. DMEA 2874 (manganese)
Irving G. Irving and
Robert N. Nelson, partners
Plutus mine, Silver Bow Co., Mont.
Contract IGm-2604

Dear Mr. Swim:

In reply to your letter of October 16, we would like to request you to make the deductions from Irving and Nelson for ore payments shipped from the Plutus mine. In accordance with the conditions you have outlined, we are transmitting herewith a copy of Contract IGm-2604. We are also asking Irving and Nelson, by copy of this letter, to authorize you in writing to make such deductions. In fact this matter has been discussed with Mr. Irving over the telephone. In accordance with a request that we arrange for Irving and Nelson to invoice you separately for ore from which deductions for our account are to be made, Irving and Nelson have advised us that all ore from the Plutus mine will be subject to royalty. They further advise us that invoices of all such ore shipments would be marked "DMEA." We are further informed that Lots 1 to 11 from the Plutus property were shipped prior to the date the contract went into effect (September 21, 1955). Lot 12 and all lots thereafter marked "Plutus-DMEA" will be subject to royalty. Mr. Irving advises that he has discussed this matter with you and you have stated that such identification will be sufficient. If it proves that such identification is not sufficient, we would appreciate your advising Irving and Nelson in what manner the ore shipments should be identified, with a copy of this notification to us.

In regard to your comments concerning the Taylor-Knapp contract, I did not, in any way, intend to imply that the GSA was not willing to cooperate in the matter of deductions and in checking the correspondence, I find that my statement is not quite correct. You did advise us on March 5, 1952 that "in view of the uncertainty which exists here as to authorities and procedure involved, your request is being referred to our regional counsel for their consideration and decision." You are quite correct, however, that on August 22, 1952, you wrote us again stating that

the deductions for royalty could be made. However, in the case of the Taylor-Knapp contracts, there were other complications, not in any way involving the GSA, which made it preferable for us to obtain payments direct from Taylor-Knapp.

If any further action on our part is needed, please advise.

Sincerely yours,

A. E. Weissenborn
Executive Officer, IMEA
Field Team, Region XI

Enclosure
as above

cc: Irving and Nelson
Sh Mirror Bldg.
Butte, Montana

USBM (2)
IMEA (2)
Nicholson

GENERAL SERVICES ADMINISTRATION

Office of Regional Comptroller
Federal Office Building
909 First Avenue
Seattle 4, Washington

October 16, 1953

In Reply Refer To: 10C

U. S. Department of the Interior
Defense Minerals Exploration Admin.
South 157 Howard Street
Spokane 4, Washington

Attention: Mr. A. E. Weissenborn, Executive Officer
DMEA, Field Team, Region II

Gentlemen:

Your letter of October 6, 1953 is received.

Subject to the following conditions we will be glad to make deductions for you from ore payments due Irving and Nelson:

1. That you provide us with a copy of Contract No. Idm-E604;
2. That Irving and Nelson authorize us in writing to make such deductions;
3. That you arrange for Irving and Nelson to invoice us separately for ore from which deductions for your account are to be made and that such invoices are clearly identified;
4. That we assume no responsibility in connection with this matter over and above making deductions for payments for ore identified as applicable to the DMEA contract and remitting the amounts so deducted to you.

Please let us know whether these conditions are acceptable to you and if so, provide us with the documents mentioned under Items 1 and 2 above. Authorization from Irving and Nelson can, of course, be sent to us directly by them if you so prefer.

In the second paragraph of your letter of October 6, in speaking of the Taylor-Knapp contract you indicate that "GSA..... has not cared to assume the responsibility of making the royalty deduction and preparing the necessary check in payment thereof." We are always glad to cooperate in any way we can with another Government agency and offered our cooperation in the Taylor-Knapp case. If you will refer to Mr. Swim's letter to you dated

August 22, 1952, you will find that we offered to make deductions for royalties from payments to Taylor-Knapp and outlined conditions somewhat similar to the above under which such deductions could be made. In Mr. Kiilsgaard's reply of September 2, 1952, he indicated that arrangements had been made for the Taylor-Knapp Company to make payments direct to your office.

Pending reply to this letter and receipt of the documents discussed above, it will be impossible for us to make any deductions from Irving and Nelson payments. If, in the meantime, deliveries of "exploration ore" are to be made by this firm, it might be advisable for you to arrange for direct payment as you have done in the Taylor-Knapp case.

Very truly yours,

HAROLD E. SMITH
Regional Comptroller

Robert N. Oliver

R. N. OLIVER, Acting

MDL

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

October 6, 1953

Mr. Irving G. Irving
Irving and Nelson
84 Hirbour Building
Butte, Montana

Re: Docket No. DMEA-2874 (manganese)
Plutus Mine
Silver Bow County, Montana
Contract Idm-E604

Dear Mr. Irving:

This will acknowledge receipt of five signed copies of the referenced contract, which are being distributed in the usual manner.

With regard to your statement that ore produced from exploration work will be designated as "Plutus Lot 12", we wish to inform you that we are advising General Services Administration, whom we assume you will sell to, to deduct the Government royalty from Plutus ore as specified. In the event GSA does not deduct the royalty repayment, we shall advise you, in which case it may be necessary for you as the Operator to make payment to DMEA on ore produced.

We wish you the best of luck in your exploration operation.

Sincerely yours,

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

cc: USBM (2)
DMEA (2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~[illegible]~~
So. 157 Howard Street
Spokane 4, Washington

cee 10-12

October 6, 1953

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

Re: Docket No. DMEA-2874 (Manganese)
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana
Contract No. Idm-E604

Dear Mr. Selfridge:

Enclosed are the original and two copies of the referenced contract, which have been signed by the Operator. A signed copy of the contract has been retained by the Operator, one for the files of this office, and one for the files of the Certifying Officer.

Also enclosed are four copies of a letter from Mr. Irving G. Irving that is referenced to a Field Team request to Mr. Irving to present a clear description of DMPA work that he was conducting as versus the proposed DMEA project work. Perusal of this letter will show that DMPA and DMEA work is being done on separate levels and that DMEA work will be driven from an already existing crosscut to the Plutus vein. A copy of Mr. Irving's letter is being forwarded to the local GSA office in Seattle for their information.

The Operator has informed us that their lease on the Plutus property has been extended to June 30, 1959, and that a copy of this extension has been forwarded to the Washington DMEA office.

Sincerely yours,

Thor H. Kiilsgaard

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

Enclosures
cc: USBM (2)
Nickelson

The two projects are to be conducted on two different levels(44 feet apart) and work on one does not contribute to the other, excepting that the DMEA project, which was applied for later, required a rehabilitated shaft, as it involves merely extensions of drift faces and later raising.

Two stations did not have to be cut, as the 200-level station and the short drift off it was already there. An explanation as to why the lower level is only 44 feet below the upper one is contained in the paragraphs to follow.

Originally the DMEA project envisioned going down to the Plutus 400 level and crosscutting over to the Norwich vein at this elevation. It quickly became obvious that the reopening of the totally caved Plutus shaft was going to be a more expensive job than estimated and a revision was obtained that allowed the DMEA work to be done on a level, designated on old maps as the Plutus 225 level. The program then became one of reopening(if caved) this 225 level and crosscutting north to the Norwich veins.

In January of 1953, backed by most reliable information that the drift on the Plutus vein on the 225 level, in conjunction with surface showings, constituted a good exploration project, an application was made for a DMEA loan to drift out the Plutus vein, as distinct from the entirely different work of crosscutting over to the Norwich veins.

The projects were obviously separate but at that time contemplated the use of the same level. Now, as you know, they are to be carried out on different levels.

The reason that the DMEA project is not going to be carried out on the so-called Plutus 225 level is that the "225" level actually turned out to be the 200 level, and crosscutting to the Norwich veins, at this elevation, would not produce enough back to make sense from a mining viewpoint.

The reason the DMEA project <u>is</u> to be conducted on this 200 level is because that is where the drift faces, constituting a good prospect, are located.

The reason why the new station was cut on the 244 level, rather than deeper, is two-fold:

a. Mainly because the expensive work of rehabilitating the caved Plutus shaft was so expensive that funds were not available to go deeper and still drive the crosscut, which was necessary to finish the job, and

b. Partly because some of the Norwich blocks to be made available by the long crosscut were above the old Norwich 170 sill and a level deeper than the new 244 level would be too deep to permit efficient mining of the upper reaches of some of the ore reserve blocks. The ground is heavy and, as it is now, some of the raises will have to go up at least 150' above the 244 level.

In closing, it is hoped that the explanation submitted adequately describes the situation and serves to point out clearly just how entirely separate these two projects are, and how they have entirely different objectives. In addition, as pointed out above they are to be conducted on two separate levels and this did not require the cutting of two stations, as one already existed.

Very truly yours,

T. G. Irving

Copy already sent to:

T. H. Kiilsgaard

Docket

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

September 28, 1953

Mr. Irving G. Irving
Irving and Nelson
84 Hirbour Building
Butte, Montana

Re: Docket No. DMEA-2874 (Manganese)
Plutus Lode Mining Claim
Silver Bow County, Montana

Dear Mr. Irving:

Enclosed are the original and five copies of a DMEA contract to further explore your Plutus property. If the terms and conditions of this contract meet with your approval, please sign all copies, retain that copy marked for the Operator and return the others to this office.

The letter from the Operating Committee, DMEA, forwarding this contract to the field for signature, contains several items to which we wish to draw your attention. For one thing, we wish to refer you to the Guarenty agreement, to be signed by you and Mr. Nelson, which is to serve in lieu of a Landlord's Consent to Lien agreement.

We also wish to draw your attention to the last paragraph of Annex II which authorizes Defense Materials Procurement Agency or General Services Administration to deduct the Government's percentage royalty from any money that might come into their hands.

Another item concerns your acquisition of either a new lease for a term ending not sooner than December 31, 1958, or an agreement from your landlords that the present lease may be extended until December 31, 1958. As we now understand it, you have already met this requirement and are forwarding a copy of the extending instrument to Washington D. C. This point is important as we are instructed not to forward the contract to you for signature until DMEA has the instrument in hand. For purposes of expediency, however, we are forwarding the contract to you for signature with the assumption that the instrument you have submitted will be acceptable.

Did Legal Approve?

Copy retained 400

We also wish to draw your attention to the following quotations which have been lifted directly from a letter to the Field Team:

> "It has also been noted that the DMEA exploration will be conducted approximately 40 feet above the development included in the DMPA project. The Field Team's attention is called to this matter as it should make sure that the DMPA project is not driven on the same level as the DMEA project, thus taking advantage of the DMEA workings to shorten the footage to be driven for the DMPA project."

We would appreciate a letter from you explaining the above-quoted item so that we may transmit the explanation to Washington. We feel that this would be more adequate than if we attempted to explain it ourselves, even though we feel that we could make an adequate explanation at this time.

Sincerely yours,

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

Enclosure

cc: USBM (2)
DMEA (2)
Nickelson

FILE COPY
SURNAME:

140

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

SEP 21 1953

Mr. A. E. Weissenborn
Executive Officer, Region II
DMEA Field Team
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-2874 (Manganese)
Irving G. Irving and
Robert H. Nelson, Partners
Plutus Lode Mining Claim
Silver Bow County, Montana

Dear Mr. Weissenborn:

Attached hereto is a memorandum for DMEA files by the Chief Counsel which will be useful for future reference in ascertaining the status of the subject contract and the reasons for the present actions concerning it.

Also attached hereto are the original and five copies of the contract. Attached to the contract for execution by the Operators is a "Guaranty" to be signed by them in lieu of procuring the landlord's consent to lien.

You will observe that the last paragraph of Annex II authorizes Defense Materials Procurement Agency or GSA to deduct the Government's percentage royalty from any moneys that may come into their hands.

As indicated in the memorandum for the files of the Chief Counsel, it will be necessary for the Operators to procure from their landlords either a new lease for a term ending not sooner than December 31, 1958, or a written agreement from their landlords that the present lease may be extended for a period ending not sooner than December 31, 1958. With such an instrument in hand, the exploration contract may be entered into.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB)

Enclosures

Approved:

J. H. Hedges (JHB)
Member, Bureau of Mines

A. R. Kinkel, Jr. (JHB)
Member, Geological Survey

R.C.S. 9-25-53

JLHofflund:ep 9-15-53

Copy to: Mr. Gilbert DeHuff, B/M, [illegible] 3523
Mrs. Martha S. Carr, USGS, RM B-242-B, GSA
Mr. Chambers
Mr. Martin (2)
Mr. Hofflund
Mails & Files
Adm. Reading File
Oper. Comm.
Chron.
Pending

400

FILE COPY
SURNAME:

Rutledge
Martin
Selfridge

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

SEP 21 1953

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 2874 - Manganese
Irving G. Irving & Robert H. Nelson
Plutus mine
Silver Bow County, Montana

Dear Mr. Weissenborn:

Reference is made to the subject docket and the proposed exploration contract.

A proposed contract has been prepared deleting the items for the rehabilitation of the 200-foot level shaft station and the 30-foot drift on the 200-foot level in accordance with the following:

Irving's letter of May 12, 1953, to Mr. Weissenborn
Irving's letter of May 13, 1953, to Mr. Mittendorf
Memorandum to Field Team, dated July 29, 1953, by John S. McNabb, Bureau of Mines.

It has been assumed, because no later mention was made for the necessity of this rehabilitation, that the shaft station and existing drift are in good shape and require little repair.

If this is not the case, we will appreciate receiving for our consideration your recommendations and estimate of the necessary costs for the rehabilitation in the form of a proposal for an amendment to the proposed contract.

It has also been noted that the DMEA exploration will be conducted approximately 40 feet above the development included in the DMPA project. The Field Team's attention is called to this matter as it should make sure that the DMPA project is not driven on the same level as the DMEA project, thus taking advantage of the DMEA workings to shorten the footage to be driven for the DMPA project.

Sincerely yours,

George C. Selfridge (GNB)

Chairman, Operating Committee

FARutledge/ls
9/17/53

Approved:

J. H. Hedges

Member, Bureau of Mines (GNB)

A. R. Kinkel, Jr.

Member, Geological Survey (GNB)

Copy to: DOCKET
ADM. READ. FILE
FT. REG. II
CODE 400
OPER. COMM.
MARTHA CARR, USGS
GILBERT DE HUFF, USBM

R. C. G. 9-21-53

ROBERT H. NELSON

Docket

IRVING G. IRVING

NORWICH MINE

HIRBOUR BUILDING

BUTTE, MONTANA

DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
SEP 21 1953

W3M

September 17, 1953

Mr. C. O. Mittendorf, Administrator,
Defense Minerals Exploration Administration,
Washington 25, D. C.

Subject: Docket No. DMEA-2874 (manganese)
Irving G. Irving & Robt. H. Nelson
Norwich-Plutus Project
(Plutus Mine)
Silver Bow Co., Montana

Dear Mr. Mittendorf:

The attached copy of a letter to Mr. Edmund F. Mansure is more or less self explanatory, and we send it to you because of your direct interest in the case.

Very truly yours,

I. G. Irving

I. G. Irving

No reply necess

ROBERT H. NELSON

IRVING G. IRVING

Copy

NORWICH MINE

HIRBOUR BUILDING

BUTTE, MONTANA

September 15, 1953

Hon. Edmund F. Mansure, Administrator
General Services Administration
Washington 25, D. C.

Subject: Docket No. DMEA-2874 (Manganese)
Irving G. Irving & Robert H. Nelson, Partners
Plutus Lode Mining Claim
Silver Bow Co., Montana

Dear Sir:

As you are aware, G.S.A. has advanced us $89,900 so that rapid production of 30,000 tons of manganese ore reserve from the Norwich vein can be mined and delivered to the Butte stockpile. In order to assure repayment of the advance made by G.S.A. we have mortgaged to the Government all of our rights, title and interest, and have assigned to the Government our leases on both the Norwich claim and the adjoining Plutus claim. We have also agreed to repay your advance, at the rate of $4.00 a ton of crude ore produced, from all ores produced from either the Plutus or Norwich claims.

Proceeds from the advance, in accordance with the agreed program, have been expended in rehabilitation and extension of existing workings on the Plutus claim. Incidental to the reopening of the Plutus workings the Plutus vein structure itself has been revealed; and there is presently a showing of manganese ore in the Plutus vein structure obviously warranting further development.

Now, and for some time to come, we are unable to fully finance the prospecting necessary to determine the economic importance of the Plutus vein, but we would be able, with the help of D.M.E.A., to do this work.

Our application for a D.M.E.A. loan, in the total amount of $25,830.00 provides financial assistance to us so that the Plutus vein itself can be developed. D.M.E.A. looks with favor on our application, and when the matter is fully understood by your staff we feel they too will agree to the desirability of this additional work.

The basic purpose of the G.S.A. advance was to make possible the mining of an indicated ore reserve of 30,000 tons of Norwich ore. Any ore which might be developed and subsequently won from the Plutus vein is beyond, over and above this Norwich reserve.

The basic purpose of the D.M.E.A. loan is to develop the Plutus vein, and D.M.E.A. will expect repayment of its loan only out of proceeds from ore discovered, developed and mined by its own program.

In order that D.M.E.A. may be repaid in this manner, on August 26, 1953, Mr. C. O. Mittendorf, Director, D.M.E.A. wrote you asking that your staff agree to subordinating G.S.A. interest in the Plutus Vein, only to the extent that is necessary to repay D.M.E.A.'s proposed financial contribution and such repayment to come only from ore discovered, developed and actually mined as a result of the proposed D.M.E.A. exploration work.

To us, this request seems reasonable, particularly in view of the fact that D.M.E.A. does not ask for repayments out of any ore presently exposed on the Plutus claim, but only out of ore reserve actually created by their financed work.

For example, at this time without lateral development only an insignificant ore reserve can be calculated on the Plutus Vein. However, the structure, if developed and opened up by the aid of D.M.E.A. funds, could well reveal and make available for mining (and contribute toward G.S.A. loan repayment) 20,000 tons of minable commercial ore of good grade, above the Plutus 200 level.

Should this development work develop favorably, as is indicated as possible above, then your mortgage on the Plutus property will represent a real and proven asset, and this would be further assurance that our contractual commitments to G.S.A. will be met on schedule and that the advance will be repaid ahead of schedule.

If the vein does not disclose minable ore, the D.M.E.A. loan is written off by that agency.

Newly discovered and minable ore on the Plutus Vein is the sole source of loan repayment to the D.M.E.A. Repayment is made by allocating 5.0% of the proceeds from sale of such ores to the D.M.E.A.

D.M.E.A. is not asking for subordination of your position in the Norwich Mine or the Norwich ore reserves, nor is it asking for subordination of your position on any ore reserve which may now be calculated on the Plutus vein, but is asking solely for subordination of 5% of the value of ore on the Plutus vein which might result from discoveries made by the proposed Plutus development program.

We are sure Mr. Mittendorf will be pleased to explain their policies to your staff.

We firmly believe that cooperation by G.S.A. with the D.M.E.A. in their request to you will result in significant new discoveries of manganese ore on the Plutus claim; that such discoveries will enhance the value of the security you now hold in connection with G.S.A.'s advance to us; that such development will further assure repayment of the advance and compliance with our delivery schedule; and will make possible the mining of much more manganese ore from the Norwich-Plutus project than has previously been counted on.

Very truly yours,

I. G. Irving

I. G. Irving

Copies sent to:
Irving Gumbel, G.S.A.
C. O. Mittendorf, D.M.E.A.
Orrin C. Bradeen, G.S.A.
William Ihlanfeldt, G.S.A.
Dan Dillis, G.S.A.
James O'Dwyer, G. S.A.

Copy of [illegible] by Waugh DMPA

Report on Request for Advance return to 400

From

Irving G. Irving

Norwich Mine

A. Name & Location of Applicant
Irving G. Irving
84 Hirbour Bldg.
Butte, Montana

B. Location of Operation
Norwich Mine
Silver Bow County
Montana

C. Assistance Requested

The applicant requests an additional advance of $16,687.50 to drive a 475' crosscut from the Plutus shaft to the Norwich ore body.

D. Brief History of the Case

The applicant applied on April 26, 1951 to the DMA for a production loan in the amount of $65,000.00 for the purpose of re-equipping, rehabilitating and further developing the Norwich Manganese Mine. The loan was declared essential to the RFC by DMPA. On March 7, 1952 the RFC denied the loan because Mr. Irving's former partner was employed by the Helena Regional Office of that Corporation, at the time the application was made. The applicant then applied on May 5, 1952 for a Purchase Contract involving 30,000 tons of ore at 20% manganese and an advance of $63,000.00 for rehabilitation of the Plutus shaft and sill and raise work. A Contract was entered into between the applicant and the Government for the purchase of 30,000 tons of manganese ore and an advance of $75,000. On February 9, 1953, Mr. Irving applied to the DMEA for $33,069.00 to rehabilitate the 225' level of the Plutus shaft and to drift 500 ft. east and west on the Plutus vein. In rehabilitating the Plutus shaft the applicant encountered unforeseen difficulties and therefore depleted his cash after sinking only 130 feet. This necessitated his making a request on May 8, 1953 for additional funds of $17,000.00 to continue the work for which the original request was made. Mr. Irving was advanced $14,900.00 on June 29, 1953. During this time the applicant revised his DMEA Contract to continue rehabilitation of the Plutus shaft, rehavilitation and drifting on the Plutus vein, crosscut 405 feet to the Norwich vein and additional 100 feet drifting on Norwich vein. That amendment was denied by the DMEA. Irving's original request is still being processed by DMEA.

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

The applicant has rehabilitated the Plutus shaft to 245 feet and has again run out of funds. In order to crosscut to the Norwich vein he has requested additional funds in the amount of $16,687.50.

E. Geology

The Butte ore deposits are in 3 sets of fissure veins. The Anaconda or east-west veins are the oldest. They appear to be simple tension factures. The Blue veins strike southwest and dips southwest. They are the earliest fault fissures. Movement on the Blue veins is principally horizontal. The southwest segment has moved southeast with respect to the northwest segment. The Steward fault fissures strike northeast and dip south; they are normal faults. Post mineral movement is evident on the Blue and Steward systems. Later faults include the Middle, Rams and Continental systems.

The Butte ore deposits are enclosed in quartz monzonite of the Boulder batholith that has been assigned to the late cretaceous period. Locally, the quartz monzonite grades into segregations of aplite; particularly in the west Butte area. Premineral quartz porphyry dikes are included into the quartz monzonite in the central part of the mineralized area. Postmineral rhyolite dikes, plugs, and flows occur principally in the west Butte area.

The minerals in the Butte ore deposits were deposited in a typically zonal pattern. Copper minerals predominate in the central zone, zinc minerals in the intermediate zone and manganese and other minerals in the Peripheral zone. Rhodochrosite and rhodonite were the last minerals to be introduced. The character of the mineralization grades from massive sulfides in the central zone to sileceous veins in the peripheral zone. The Norwich mine is in the peripheral zone in the west Butte area.

According to available information, the Norwich ore bodies are in at least 2 veins, the footwall vein and hanging wall vein; production coming from the footwall or main vein. This vein ranges in width from 3 to 5 feet. The production part of the vein strikes N 80° E and dips 60° S. Numerous minor cross faults offset the vein to the right a maximum of 3 or 4 feet. The dip of the veins flattens in the lowest level. On the east end the vein terminates at a post ore rhyolite contact.

F. Ore Reserves

The vein matter of the Norwich mine consists of quartz, rhodochrosite, minor amounts of rhodonite and traces of sulfides. It occupies operings in the quartz veins which were made by movements along the vein

fissures generally after the main quartz-sulfide emplacement. Quartz nearly always is present in the ore. The rhodochrosite appears as lenses in the quartz and as a cementing mineral in brecciated quartz. In the Norwich vein, rhodochrosite is oxidized to about 30 feet below the outcrops.

The rhodochrosite ore of the Norwich vein has been of consistently good grade. Ore in the shoots that have been mined averaged 23.8% manganese with some rich spots which contained to 35% manganese. Silver of commercial value is also associated with the rhodochrosite. Because of the spotty nature of the ore, the grade of ore mineral is not necessarily indicative of the grade that might be expected of ore that may be developed in the future.

A Bureau of Mines ore reserves estimate of 1949 based entirely on evidence of the outcrops and available geology maps of the mine allows 12,000 tons of indicated ore and 58,000 tons of inferred ore with no grade. These reserves were not verified by direct observation or by sampling and measurements.

In 1950 the Bureau of Mines drilled six holes for a total of 2,046 feet. Hole No. 2 was the only one to intersect ore - 10'8 feet of 16.7% manganese. The following are results that may be concluded from this drilling:

1. Ore bodies in the hanging wall vein are not continuous between exposures.

2. The mineralized zone in Hole No. 2 may be connected with the vein in the hanging wall crosscut from the Norwich mine. did

3. Since holes 3, 5 and 6 failed to intersect ore, the exposure in the Plutus crosscut must remain isolated and thus the Norwich vein cannot be extended to he 400 foot level in the Plutus crosscut.

4. Holes 2 and 3 indicate that the footwall vein either merges with the hanging wall. vein or stringers out between the lowest level of the Norwich mine and the holes.

5. Holes 3 and 5 tend to limit the extension of the ore to the east.

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

6. Since the footwall vein is indicated to merge with the hanging wall vein or to terminate above hole 2, the quantity of ore remaining below the 170 foot level is small probably a few hundred tons.

Using some RFC samples taken on the 170 foot crosscut averaging 5.5 foot in width and 22% manganese and using the intersection in hole 2, the Bureau of Mines has calculated ore reserves of 15,500 tons at 18-20% manganese classifying it as indicated ore. From maps submitted by the applicant it appears that approximately a little less than 2/3 of that block has been mined leaving some 6,200 tons of indicated ore.

"On the basis of the consistently high grade and continuity of the mineralization in the upper levels and on the ore encountered in the drill holes", the Geological Survey has calculated 11,000 tons of indicated ore and 15,000 tons inferred ore both at 25% manganese.

The applicant in submitting his application for a Purchase Contract estimated his reserves to be 34,550 tons of probable ore averaging 22.5% manganese and 16,500 tons of prospective ore averaging 21.0% manganese for a total of 51,050 tons of 22% manganese.

It should be noted here that no ore reserve estimates regardless of source has shown any measured ore.

SURVEY OF ORE RESERVES

	Measured	Indicated	% Grade Mn	Inferred	% Grade Mn	Total	% GradeMn
Bureau of Mines (1949)	0	12,000	-	58,000	-	70,000	-
Bureau of Mines (1950)	0	15,000	18-20	-	-	15,000	18-20
Geological Survey (1952)	0	11,000	25	15,000	25	26,000	25
Applicant (1952)	0	34,550	22.5	16,500	21	51,050	22
Examiner	0	10,000	20.0	15,000	20	25,000	20

From a study of the ore reserves it is felt that 15,000 tons of ore at 20% manganese should be the maximum allowed in calculating expected monetary returns.

G. Past Production

	L.D.T.	Grade Mn %
1942-1944	7,117	23.87
Oct. 22 Dec. 31, 1952	351.93	23.20
Jan. 1953	312.	21.50
March 1953	24.95	14.30
April 1953	113.7232	22.00
	75.7098	14.90
	7,995.3130	23.6

The above is carbonate ore only. Small amounts of oxide ore were mined the last few months.

H. Costs.

Mr. Waite, who was Acting Chief of the Ferro-Alloys Branch at that time visited the property in May 1953 and has estimated the costs to be: probably May 16

Haulage	$1.03 per ton		
Royalty (12.5%)	3.30 " "		(stops when $50,000 is paid)

Labor works on a split check agreement

Difference $26.36 - $4.33 = 22.03 to split with labor

From the company's	$11.01 per ton	
Supplies cost	$ 4.50 " "	
Gov't takes	4.00 " "	
Leaving the Contractor	2.51 " "	

The above is based on 21.% Mn CO_3 plus 4.5 oz. silver, the gross value of the ores being $26.36 per ton.

No beneficiation of the ore is required since it is sold to the Government as such. Therefore, no milling costs are presented.

Summary of Financial Transaction

First advance	$75,000
Second advance	14,400
Cash advanced thus far	$89,900
Salvage value of equipment on hand	5,000
Loss to Gov't if no further assistance is granted.	84,900
Return to Gov't from ore sales ($4/ton-15,000 L.D.T.)	60,000
	24,900
Amount that could be invested in the project to equal the regional loss of $89,900	65,000

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

I. Adequacy of Funds Requested

In outlining his proposal the applicant has requested funds to crosscut from the Plutus shaft to the Norwich vein. He is assuming, with no positive evidence, that the position of the vein will be where he has projected it. Thus, in projecting his crosscut Mr. Irving has not taken into consideration the possibility of the vein not being where he anticipates it to be. A crosscut of approximately 600 feet is more realistic in view of the above. Therefore,

600' at $38/ft.	-	$22,800
Cash available	-	1,800
		$21,000

J. Capability of Applicant

From information available, it is believed that the applicant is competent and will carry out the proposed project in an efficient manner.

K. Recommendation

Inasmuch as the Government stands to lose $89,900 if no further assistance is given this applicant, it is recommended that Mr. Irving be advanced $21,000 for the purpose of crosscutting to the Norwich vein from the Plutus shaft.

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

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

September 14, 1953

Memorandum

To: DMEA Files

From: Chief Counsel

Subject: Irving G. Irving and Robert H. Nelson, Partners
Docket No. DMEA-2873 (Manganese)

The Operator's application and the proposed Exploration Project Contract relate to one mining claim, the "Plutus." The Operator had previously entered into a contract with the Defense Materials Procurement Agency (now GSA), dated November 13, 1952, as amended by Amendment No. 1, dated March 2, 1953 (Contract No. GS-10P(D)-3), which involves both the Plutus claim and a second claim known as the "Norwich." The contract with GSA is for the delivery to the Government of between 30,000 and 60,000 tons of manganese ore from both claims, and GSA makes certain advances for financing this production. As security for its advances, GSA (according to the contract and the letter from the Administrator of GSA to the Administrator of DMEA dated August 31, 1953) takes an assignment of two leases covering the two claims, and also a chattel mortgage on all mining equipment. The letter states that GSA's advances now amount to $89,900, which may be increased to $106,000, and that production from the Norwich claim is not apt to be sufficient to liquidate these advances.

Part of GSA's advances of money is to be used for rehabilitation of the Plutus shaft as a means of removing ore from the Norwich claim. The proposed exploration work, although unrelated to the production operations, is to be made from the Plutus shaft and to that extent depends upon the production operations. Of course, any discovery resulting from the exploration will be beneficial to GSA's prospects of getting its advances repaid.

GSA probably has failed to realize that subordination of its interests would not be in any manner detrimental to it, inasmuch as DMEA is not entitled to any royalty or repayment except from production. The subordination would be beneficial to DMEA, merely because it would give some assurance that of such money as is repaid to the Government some part of it would come to the Government through DMEA

as a channel. As far as the Government is concerned, it is not important through which channel (DMEA or GSA) money is repaid. Therefore, failure of GSA to subordinate is hardly a sufficient reason for refusing to enter into the proposed exploration contract. It would be different if GSA were a private party holding a mortgage.

The real obstacles to entering into the proposed exploration contract are the fact that the property is already heavily loaded with debt, and that the Operator's leasehold interest is for less than three years. The Operator's lease on the Plutus claim expressly recites that Irving G. Irving (one of the partner Operators) owns a 1/4 interest and that Anaconda Copper Mining Company owns 1/4 and The National Bank of Commerce of Seattle owns 1/2. GSA's contract makes no point of the fact that Irving owns 1/4 and leases 3/4, all in his own name, and that the Operator partnership has no interest in the property except such as might arise from the fact that both partners have signed the agreement with GSA.

The Operator represents that it is unable to obtain a subordination agreement from the lessors of the 3/4 interest. Inasmuch as the lease expires June 30, 1956, and there is no right of renewal, and as the exploration work is estimated at 8 months, this would allow probably less than 2 years for production operations from which DMEA might be repaid. This is deemed to be too short even for this manganese operation, and it has been determined administratively to require the Operator to procure from the lessors a right of possession running at least to December 31, 1958. The subordination agreement covering the 3/4 leasehold interest will be waived and the Operator's written undertaking accepted in lieu thereof.

J. L. Hofflund
J. L. Hofflund
Chief Counsel

O.K. A.E.Kane

ANACONDA COPPER MINING COMPANY

Butte, Montana

F. A. LINFORTH
Assistant to the Vice-President

September 3, 1953

2874

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

Dear Mr. Irving:

In accordance with your request, the Anaconda Copper Mining Company, owner of one-quarter (1/4) interest, The National Bank of Commerce of Seattle, Trustee, owner of one-half (1/2) interest, and Irving G. Irving and Robert H. Nelson, joint owners of the other one-quarter (1/4) interest, all Colessors, hereby extend for three (3) years the lease granted to you on the Plutus Lode Claim, Survey No. 3018, in Silver Bow County, Montana, above a horizontal plane six hundred (600) feet vertically below the collar of the Plutus Shaft.

WHEREAS, the original lease dated July 22, 1952, was to expire on the 30th day of June, 1956, it is hereby extended so as to expire on the 30th day of June, 1959.

All other terms and conditions of the original lease dated June 22nd, 1952, are to remain in full force and effect in this extension.

Yours truly,

ANACONDA COPPER MINING [redacted]

By F. A. Linforth
Assistant to the Vi[redacted]

ATTEST:

Asst. Cashier.

THE NATIONAL BANK OF COMMERCE OF SEATTLE,

By C. N. Olsenang
Vice President.

Irving G. Irving
COLESSORS.

The foregoing extension is hereby accepted by the Lessee in accordance with the conditions and provisions contained herein.

Dated September 22, 1953.

Irving G. Irving
LESSEE.

Docket

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 2 - 1953

GENERAL SERVICES ADMINISTRATION

Washington 25, D. C.

RECEIVED
SEP 10 1953
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

AUG 31 1953

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

Re: Docket No. DMEA-2874

Dear Mr. Mittendorf:

This is in reply to your letter of August 26 informing us of your inclination to enter into an exploration contract with Irving G. Irving and Robert H. Nelson, affecting the Plutus Lode Mining Claim, Silver Bow County, Montana, provided this Administration subordinates its mortgage covering production from the Plutus Claim to your claim for a percentage royalty on such production as may result from the exploration.

This Administration's mortgage was given to secure advances amounting to $89,900 which possibly may be increased to approximately $106,000, and such mortgage covers the equipment acquired with Government advances and the interests of the parties in the Plutus Claim and the Norwich Claim. The proposed exploration described in your letter is wholly apart from the operations designed to liquidate the advance made by this Administration.

Based upon Geological Survey reports, there is no more than enough ore in the Norwich Claim to liquidate the advances made to date by this Administration, and certainly not enough to assure liquidation of the additional sum which we have been asked to advance in order to complete the work commenced with the original advances. Accordingly, we regret that we cannot subordinate the mortgage covering the Plutus Mine and the claim of the Administration for repayment based on Plutus production.

The five copies of draft of proposed exploration contract transmitted with your letter are returned.

Sincerely yours,

E F Mansure

EDMUND F. MANSURE
Administrator

Enclosures

140

FILE COPY
SURNAME:

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

AUG 26 1953

Mr. Irving G. Irving
Irving and Nelson
84 Hirbour Building
Butte, Montana

Re: Docket No. DMEA-2874 (Manganese)
Irving G. Irving and
Robert H. Nelson, Partners
Plutus Lode Mining Claim
Silver Bow County, Montana

Dear Mr. Irving:

Attached hereto is a copy of a letter of this date to the Administrator of General Services, with a copy of the proposed exploration project contract. Although we cannot enter into this contract without prior approval of General Services Administration, it is submitted to you herewith for your present examination and approval. If the Administrator of General Services executes the necessary approval and subordination agreement, the contract will be executed by this agency and forwarded to you for your signature.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosures: 2

JLHofflund:ep 8-21-53

Copy to: Mails & Files
Admr. R. File
Oper. Comm.
DMEA Field Team Reg II (2)
Mr. Martin (2)
Mr. Hofflund
Mr. Kane
Chron
Pending

FILE COPY
SURNAME:
140 B

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

AUG 26 1953

Hollund
Stone
LC
Rutledge
Charles

Hon. Edmund F. Mansure
Administrator
General Services Administration
Washington 25, D. C.

Re: Docket No. DMEA-2874
(Manganese)
Irving G. Irving and
Robert H. Nelson, Partners
Plutus Lode Mining Claim
Silver Bow County, Mont.

Dear Mr. Mansure:

Enclosed herewith are five copies of a draft of a proposed exploration project contract to be entered into with Irving G. Irving and Robert H. Nelson, partners, relating to the Plutus lode mining claim in the county of Silver Bow, Montana. These partners, we are advised, have a contract with the General Services Administration (GS-10P(D)-3), under which they have received an advance from you on production both from the Plutus claim and from the adjoining Norwich claim. It is our understanding that the interests of the partners in both claims and on the production therefrom are subject to a mortgage to you to secure the repayment of your advances on production.

The partners represent that they own an undivided one-fourth interest in the Plutus claim and are lessees as to the remaining undivided three-fourths interest. The lease expires on June 30, 1956, leaving an unexpired term of something less than three years, far short of the ten years ordinarily required by this agency. Nevertheless, in view of the probable character of the production and the probability that it can be realized upon within the remaining short term; and in view of the reasonable prospect of making a valuable discovery, development, and ultimate production of manganese, this agency is inclined to enter into the proposed exploration contract. However, it is plain that whatever prospect there may be for reimbursement of the Government for its contribution under the exploration project contract, would be very scant if your mortgage on the production from the Plutus claim were to remain prior to the claim for a percentage

R.C.G.
8-26-53

royalty under the exploration contract. It is therefore proposed that your mortgage on any production from the Plutus claim be subordinated to the claim of the Government for a percentage royalty on production from that claim under the exploration project contract.

Without copies of your contract with these operators and of your mortgage or other claim against the production, it is difficult for this agency to draw a satisfactory subordination agreement, assuming that you will be willing to execute one. In this connection, reference is made to your contract with the United States Tin Corporation under No. GS-OOP-(D)-520, and to our exploration project contract with that corporation under our docket No. DMEA-2228. In that case, we submitted our proposed exploration project contract to you, and you executed an approval and subordination agreement to enable us to enter into it. I think that your approval and subordination in this case could be much more simple, as the matter here is not nearly so complex; but it seems necessary to ask you to draft it, unless you would prefer to furnish us with copies of the necessary documents.

You may be aware that these operators are in financial straits, and if the proposed exploration contract is to be of any use to them, it probably is necessary that it be executed very shortly.

If you are willing and able to draft and execute the necessary approval and subordination agreement, please do so, and return four executed copies attached to four of the copies transmitted herewith, retaining one of the copies for your files.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

Enclosures 5

JLHofflund:ep 8-24-53

Copy to: Mails & Files
Admr. R. File
Oper. Comm.
DMEA Field Team, Reg.II (2)
Mr. Irving G. Irving
Mr. Martin (2)
Mr. Chambers
Mr. Hofflund
Mr. Kane
Chron.
Pending

FILE COPY
SURNAME:

140

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

NSin RR August 21, 1953

akkane

Memorandum

To: The Administrator
Through: Mr. W. S. Martin

From: Chief Counsel

Subject: Irving G. Irving and Robert H. Nelson, Partners Docket No. DMEA-2874 (Manganese), Plutus lode mining claim, Silver Bow County, Montana

Attached hereto is a redraft of the subject contract, which was submitted to you with my memorandum dated August 14, signed by Albert E. Kane for myself.

After a review of the lengthy docket, I found it necessary to redraft the contract and to prepare for your signature a submission of it to the Administrator of General Services for his approval before it can be entered into.

One of the operators, Irving G. Irving, owns a one-fourth interest in the property which is the subject of the contract, and a lease on the remaining undivided three-fourths. In view of the fact that these interests are specifically described in the proposed exploration contract, I deem it unnecessary to require Irving G. Irving to transfer his interest in the property to the partnership of Irving and Nelson.

The lease expires June 30, 1956, the remaining term being something less than three years. Ordinarily, this short term would not be acceptable to DMEA, particularly in the absence of an owner's consent to lien, which these operators are unable to obtain. However, it is my understanding that, in view of the character of these mineral deposits (manganese) and the probability that production can be completed within the short term of the lease, DMEA is willing to accept this short term even without an owner's consent to lien with respect to the undivided three-fourths interest. However, for whatever it is worth, the operator should be required to execute a guaranty of payment of the percentage royalty on any production from the land within a period of

ten years. Such guaranty will be attached to the contract for execution by the operator. (There is such a guaranty now in the docket file, but it is insufficient in its provisions in that it relates to an old-form contract.)

Various letters in the docket indicate that the project as a whole involves both the Plutus and the Norwich claims (See letter of Feb. 18, 1953, DeHuff to Selfridge; the operator's answer to Question 4 on Form MF-100; letter of May 19, 1953, the operator to the Administrator; and letter of May 23, 1953, the operator to Crittenden), and in fact the operator at one point proposed that the exploration project be amended to include both claims. Under these circumstances, ordinarily, DMEA would require that both claims be included in the description of the land so that the Government's royalty on production would relate to the entire project. Annex II is attached to the exploration contract to explain and justify limiting the exploration project to the one claim.

There appears in the docket file a memorandum dated May 26 from the Chief of the Iron and Ferroalloys Division to the Chief Counsel and the Chief of Contract Administration and Audit Division, pointing to the necessity for prompt action looking toward entering into the contract on account of the financial straits of the operators, and suggesting that it would be well to investigate the legal and auditing aspects of the matter in advance. Pursuant to this suggestion, a draft of a letter was prepared from DMEA to DMPA with respect to the latter's approval of the proposed exploration contract and subordination of its mortgage claims. This letter was not used, but in place thereof, the Administrator wrote to the operator under date of June 4, indicating that the operator's application would not be acted upon "until the 225-foot level of the Plutus mine could be reopened and the Plutus vein exposed and sampled." In view of the slow rate of progress that was then being made on the Plutus shaft, and the impossibility of making any presentation to DMPA without a proposed contract attached, nothing further was done on the matter by this office until the recent submission to it of a contract for drafting.

The foregoing is set forth in detail because the docket file is voluminous and it is difficult to understand the requirements of the case without reading everything in the file.

J. L. Hofflund

J. L. Hofflund
Chief Counsel

Attachments

Copy to: Mails & Files
Adm. R. File
Mr. Martin (2)
Mr. Chambers
Mr. Hofflund
Mr. Kane
Chron.

JLHofflund:ep

HHH 8-24-53

FILE COPY
SURNAME:

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

Chief Counsel, DMEA
Iron and Ferro-Alloys Division, DMEA

August 10, 1953

Short Form Contract - Docket No. DMEA 2874 - Manganese
Irving and Nelson, Lessees
Plutus Mine
Silver Bow County, Montana

A rough draft of the contract, a section map of the proposed work, and the subject docket are transmitted herewith for your use in preparing the contract in final form.

W. S. Martin, Acting Chief
Iron and Ferro-Alloys Division

Attachment

TLChapman/ls

cc: Docket
Code 400

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 2874

COMMODITY Manganese

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

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Irving G. Irving, Partner - 43 Hirbour Building, Butte, Montana
Robert H. Nelson, Partner - 512 Clark Street, Helena, Montana

hereinafter called the "Operator," as follows:

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

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Montana, County of Silver Bow, described as follows:[3] Plutus Lode Mining Claim, Survey No. 3018, Patented. Located in Sections 10 and 15, T. 3 N., R. 8 W., and above a horizontal plane 600 feet vertically below the collar of the Plutus shaft.

the Operator represents and undertakes:[4]

(*a*) ~~That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:~~
~~The Anaconda Mining Company, ¼ interest, and The National Bank of Commerce of Seattle, Washington, Trustee, refuse to sign an Owner's Consent to Lien.~~
~~A Guaranty has been signed by Irving G. Irving and Robert H. Nelson, Lessees.~~

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for[5] Manganese

in or upon the described land; and shall bring the project to completion within a period of 8 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 75 percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $ 19,372.50, which is 75 percent of $ 25,830.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

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

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

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

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

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

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

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

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

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

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

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

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

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

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____

By _____

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

_____ [CORPORATE SEAL]

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

EXPLORATION PROJECT CONTRACT
IRVING AND NELSON
PLUTUS MINE
DOCKET NO. DMEA 2374 - MANGANESE

EXHIBIT "A"

Description of the Work

The project consists of drifting westerly approximately 270 feet and easterly approximately 200 feet along the Plutus vein from the present faces (as shown on attached map) on the 200 foot level of the Plutus shaft.

Dependent on the results of the above drifting, 200 feet of raising is specified at locations to be selected by the Operator with the approval of the Field Team.

Where warranted, samples shall be taken at 5-foot intervals for a total of not to exceed 250 samples, to be assayed for silver and manganese.

Estimated Cost of the Project
Agreed Unit Costs

470 feet of drifting at $34.00 per foot	$15,980.00
470 feet of timbering at $5.00 per foot	2,350.00
200 feet of raising at $35.00 per foot	7,000.00
250 samples to be assayed for silver and manganese at $2.00 each	500.00
Total cost of project	$25,830.00

The above unit costs shall cover all costs whatsoever incidental to the completion of the work.

Total agreed unit costs	$25,830.00
Government participation - 75%	19,372.50

IRVING AND NELSON

By _____
Irving G. Irving, for lessees

THE UNITED STATES OF AMERICA

By _____
Administrator, Defense Minerals
Exploration Administration

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Chief Counsel, DMEA

DATE: August 10, 1953

FROM : Iron and Ferro-Alloys Division, DMEA

SUBJECT: Short Form Contract - Docket No. DMEA 2874 - Manganese
Irving and Nelson, Lessees
Plutus Mine
Silver Bow County, Montana

A rough draft of the contract, a section map of the proposed work, and the subject docket are transmitted herewith for your use in preparing the contract in final form.

W S Martin
W. S. Martin, Acting Chief
Iron and Ferro-Alloys Division

GLC

Attachment

Docket

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

August 7, 1953

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

Re: Docket No. DMEA-2874 (Manganese)
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Selfridge:

This is a supplement to the Field Team's letter of July 31, 1953, with which was forwarded Mr. John McNabb's memorandum to the Field Team of July 29. Since the date of the memorandum and letter, Mr. Irving has been in to discuss the proposed Plutus project with me, and the following additional information may be pertinent in reviewing the docket:

Early last spring, I spent a short time with Irving going over the area. The vein as exposed on the surface in a number of test pits and in a few shallow workings has a well mineralized gossan. On the basis of this, the proposal would seem a quite worthwhile exploration possibility, and this belief has apparently been confirmed by McNabb's inspection and sampling of the 200 level. Postmineral faults have displaced the vein, but the habits of the faults in the Butte district are well known and finding the faulted segments should present no great exploration or operating problem. I understand (and it may be that I am not in full possession of all the facts) that Irving and Nelson's proposal has been rejected up until now not so much on technical grounds as Irving and Nelson already have an existing DMPA contract, which involves work through the Plutus shaft and which to some degree overlaps the proposed DMEA exploration of the Plutus vein. My understanding is that DMEA has up to now been unable to enter into a contract on the very reasonable grounds that the work provided for in the DMEA and DMPA contracts is in part a duplication and that DMPA funds cannot be used to finance a DMEA exploration. The first objection would appear to have been removed for the Plutus vein has now been exposed on the 225-foot level (this actually turned out to be the 200-foot level).

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Mr. Irving informs me that the crosscut to the Norwich vein, which is the objective of the DMPA contract, will now be done on the 240-foot level; thus, DMPA funds have uncovered the vein on the 200-foot level and DMPA crosscutting would be on the 240-foot level. DMEA exploration would consist of drifting on the Plutus vein entirely apart from and without any overlap of the DMPA project.

Thus, although carried on from the same shaft, the objectives of the two projects are quite dissimilar. The DMEA project is intended to explore the Plutus vein; the DMPA project is intended to crosscut to ~~through~~ ore already known on the Norwich vein. Therefore, unless it were a matter of policy that a DMEA project could not be carried on by a company which already had a DMPA advance of funds, there would appear to be no particular reason why a DMEA contract could not be negotiated at this time.

The above comments are forwarded for whatever assistance they may be in helping you arrive at a decision in the matter.

Sincerely yours,

A. E. Weissenborn

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

cc: USBM(2)
Quinlan

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 2874

COMMODITY Manganese

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

AMENDED

EXPLORATION PROJECT CONTRACT[1]

(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Irving G. Irving, 84 Hirbour Building, Butte, Montana, and Robert H. Nelson, 512 Clark Street, Helena, Montana - Partners and as set forth in Annexes I, II, and III, attached hereto and made a part hereof. hereinafter called the "Operator," as follows:

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

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Montana, County of Silver Bow, described as follows:[3] Plutus Mining Claim, Survey No. 3018, patented, located in Sections 10 and 15, T. 3 N., R. 8 W., above a horizontal plane 600 feet vertically below the collar of the Plutus shaft, and Norwich Quartz Lode Mining Claim, U. S. Survey No. 2724, Lot 590, T. 3 N., R. 8 W.

the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: as to a 1/4 interest in the Plutus claim

Mortgage to General Services Administration under its Contract GS 10P(D)-3 as to the Norwich claim and to a 3/4 interest in the Plutus claim 6/

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within _____ days from the date of this contract shall commence work on a project of exploration for[5] Manganese in or upon the described land; and shall bring the project to completion within a period of 16 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 75 percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $35,535.00 which is 75 percent of $47,380.00 the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

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

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

16—66329-1

6/ See Guaranty attached.

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

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

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

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

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

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

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

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

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

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

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

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* .....

.....

.....

.....

.....

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

.....
(Operator)

By .....

By .....

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

..... [CORPORATE SEAL]

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

EXPLORATION PROJECT CONTRACT
IRVING G. IRVING and ROBERT H. NELSON
Exploration Project Contract No. Idm-E604
DOCKET NO. DMEA 2874

ANNEX II

The Operator is a party to a contract with the Government, acting through Defense Materials Procurement Agency, Contract No. GS-10P(D)-3, under the provisions of which the Government has made certain advances to the Operator to finance certain mining and productions operations on the Plutus claim, which is the subject of this Amended Exploration Project Contract, and also on the adjoining Norwich claim, which is now being included by this Amended Exploration Project Contract.

The work provided for in this Amended Exploration Project Contract depends upon and could be performed only by virtue of certain of the mining operations which are being financed by the Government under said Defense Materials Procurement Agency contract, but the exploration work is not directly beneficial or in any way necessary to said mining and production operations.

Inasmuch as the authority of Defense Minerals Exploration Administration is limited to contribution to the cost of exploration and related development, this statement is made in explanation of why the Exploration Project Contract was restricted to the Plutus claim and did not include the Norwich claim. The contract between the Defense Materials Procurement Agency and the Operator was for the development and production of the Norwich Footwall vein. The exploration added under this Amended Exploration Project Contract will be limited to the Norwich Hanging Wall vein which was not known to exist at this depth when the Contract was executed.

However, as a consideration for the inclusion of the Norwich claim and the exploration of the Norwich Hanging Wall vein, all production from the referenced Norwich claim will be subject to the Government's percentage royalty.

The Defense Materials Procurement Agency, the General Services Administration, or any other department or agency of the Government which may receive ore from the property

described in Article 2 of the Amended Contract form, or which may be or become in any manner obligated to pay money to the Operator, is authorized and directed to deduct from any such money or accounts payable to the Operator, and pay to or for the account of Defense Minerals Exploration Administration, any sums that may be due to the Government on account of royalties under the amended exploration contract to which annex is attached.

~~AMENDED~~
EXPLORATION PROJECT CONTRACT
IRVING G. IRVING and ROBERT H. NELSON, PARTNERS
DOCKET NO. DMEA-2874

6. Exhibit "A" is deleted and a new Exhibit "A" is substituted, reading as follows:

~~EXHIBIT "A"~~

Description ~~of the~~ Work

The objective of this project is the exploration for manganese on the Plutus and Norwich patented mining claims.

The work consists of three stages and is substantially shown on the attached map entitled "Norwich-Plutus Mine, Silver Bow County, Montana----Nelson and Irving, Butte, Montana---- Composite Plan-Map 1."

All drifts, crosscuts, and raises shall be timbered as necessary and shall be not less than 5 feet by 7 feet in the clear.

Representative samples, not to exceed 500, shall be taken of all mineralized ground encountered. Each sample shall be divided into at least two parts, one of which ~~is to go~~ shall be furnished to the DMEA Field Team ~~and the other to the Operator~~. The samples ~~are to~~ shall be analyzed for silver and manganese.

Stage I

The location, direction and extent of all work as proposed to the Operator for approval by the Government.

~~The work under this stage consists of that work which has been completed, and is as follows:~~

1. Drift easterly on the 200-foot level of the Plutus shaft 16.4 feet along the Plutus vein from a face 3 feet east of USBM tag No. 256.

2. Drift westerly on the 200-foot level of the Plutus shaft 44.4 feet along the Plutus vein from a face 21 feet west of USBM tag No. 255.

3. Unwater and rehabilitate the Plutus shaft 36.5 feet below the 244-foot level to establish a new level at the 275-foot level and provide for a sump. Rehabilitation includes all necessary retimbering, rearrangement of dividers, and installation of skip guides.

4. ~~At~~ On the 275 feet level in the Plutus shaft cut and timber a station-crosscut 15 feet southeasterly from the Plutus shaft to the Plutus vein. Total excavation for the station-crosscut shall not exceed 1,002 cubic feet.

Stage II

~~The work under this stage consists of the work in the original contract, as amended, that remains to be completed.~~ Exhibit 4 Item No. 1 that described

1. Drift easterly on the 275-foot level of the Plutus shaft along the Plutus vein not more than 183.6 feet from the end of the station-crosscut.

2. Drift 210.6 feet westerly along the Plutus vein not more than from the end of the west crosscut on the 244-foot level of the Plutus shaft.

3. Crosscut 15 feet to the south from the face of the west crosscut on the 244-foot level of the Plutus shaft.

4. Dependent upon the results of the ~~above~~ drifting and/or crosscutting under Stage~~s~~ I and the first 3 items under Stage II, the Operator, with the prior written approval of the

Government, shall ~~may~~ perform not no more than ~~to exceed~~ 110 feet of raising.

5. The Operator, from the time work is started on the 275-foot level, shall keep that level pumped dry until all work on that level is completed. Should it become necessary for the Operator to replace the pump presently operating, with equipment of greater pumping capacity, a pump capable of pumping 200 gallons per minute against a 400-foot hydraulic head shall be installed.

Stage III

1. Drift 375 feet not more than easterly on the Norwich Hanging Wall vein from the 244-foot level crosscut to intersect the rhyolite contact.

2. Crosscut not more than 75 feet southerly from a point in the East drift on ~~the Norwich Hanging Wall vein on~~ the 244-foot level approximately 250 feet from the 244-foot level crosscut, to the mineralization indicated by Bureau of Mines' diamond drill Hole No. 5.

3. Dependent upon the results of the ~~above~~ drifting and/or crosscutting under items 1 and 2 under this stage, the Operator, with the prior written approval of the Government, shall ~~may~~ perform not to exceed 100 feet of raising.

Agreed Unit Costs 1/

Drifting and/or crosscutting 920 feet @ $34.00/ft.	$31,280.00
Timbering 920 feet of drifts and/or crosscuts @ $5.00/ft.	4,600.00
Raising 210 feet @ $35.00/ft.	7,350.00
Unwatering and rehabilitating shaft, 36.5 feet @ $35.00/ft.	1,277.50
Cutting and timbering station-crosscut, 1,002 cubic feet @ $1.24/cu. ft. (rounded to)	1,242.50
Pumping 150 days @ $4.20/day ~~2/~~	630.00
Analyzing 500 samples for manganese and silver @ $2.00/sample	1,000.00
ESTIMATED TOTAL AGREED UNIT COSTS	$47,380.00
GOVERNMENT PARTICIPATION @ 75%	$35,535.00

1/ The unit costs include all costs whatsoever incidental to the completion of the work.

~~2/ This cost is allowable only in the event that~~ the ~~Operator replaces the presently operating pump with a pumping is performed of greater capacity, as described in item 5, Stage II.~~ ~~replacement pump described in item 5, Stage II~~ For each day the replacement pump ~~is greater~~ described under item 5, Stage II is used.

EXPLORATION PROJECT CONTRACT
IRVING G. IRVING and ROBERT H. NELSON
Exploration Project Contract No. Idm-E604
DOCKET NO. DMEA 2874

ANNEX II

The Operator is a party to a contract with the Government, acting through Defense Materials Procurement Agency, Contract No. GS-10P(D)-3, under the provisions of which the Government has made certain advances to the Operator to finance certain mining and productions operations on the Plutus claim, which is the subject of this Amended Exploration Project Contract, and also on the adjoining Norwich claim, which is now being included by this Amended Exploration Project Contract.

The work provided for in this Amended Exploration Project Contract depends upon and could be performed only by virtue of certain of the mining operations which are being financed by the Government under said Defense Materials Procurement Agency contract, but the exploration work is not directly beneficial or in any way necessary to said mining and production operations.

Inasmuch as the authority of Defense Minerals Exploration Administration is limited to contribution to the cost of exploration and related development, this statement is made in explanation of why the Exploration Project Contract was restricted to the Plutus claim and did not include the Norwich claim. The contract between the Defense Materials Procurement Agency and the Operator was for the development and production of the Norwich Footwall vein. The exploration added under this Amended Exploration Project Contract will be limited to the Norwich Hanging Wall vein which was not known to exist at this depth when the Contract was executed.

However, as a consideration for the inclusion of the Norwich claim and the exploration of the Norwich Hanging Wall vein, all production from the referenced Norwich claim will be subject to the Government's percentage royalty.

The Defense Materials Procurement Agency, the General Services Administration, or any other department or agency of the Government which may receive ore from the property

described in Article 2 of the Amended Contract form, or which may be or become in any manner obligated to pay money to the Operator, is authorized and directed to deduct from any such money or accounts payable to the Operator, and pay to or for the account of Defense Minerals Exploration Administration, any sums that may be due to the Government on account of royalties under the amended exploration contract to which annex is attached.

AMENDED
EXPLORATION PROJECT CONTRACT
IRVING G. IRVING and ROBERT M. NELSON, PARTNERS
DOCKET NO. DMEA-2874

EXHIBIT "A"

Description of the Work

The objective of this project is the exploration for manganese on the Plutus and Norwich patented mining claims.

The work consists of three stages and is substantially shown on the attached map entitled "Norwich-Plutus Mine, Silver Bow County, Montana----Nelson and Irving, Butte, Montana---- Composite Plan-Map 1."

All drifts, crosscuts, and raises shall be timbered as necessary and shall be not less than 5 feet by 7 feet in the clear.

Representative samples, not to exceed 500, shall be taken of all mineralized ground encountered. Each sample shall be divided into at least two parts, one of which is to go to the Field Team and the other to the Operator. The samples are to be analyzed for silver and manganese.

Stage I

The work under this stage consists of that work which has been completed, and is as follows:

1. Drift easterly on the 200-foot level of the Plutus shaft 16.4 feet along the Plutus vein from a face 3 feet east of USBM tag No. 256.

2. Drift westerly on the 200-foot level of the Plutus shaft 44.4 feet along the Plutus vein from a face 21 feet west of USBM tag No. 255.

3. Unwater and rehabilitate the Plutus shaft 36.5 feet below the 244-foot level to establish a new level at the 275-foot level and provide for a sump. Rehabilitation includes all necessary retimbering, rearrangement of dividers, and installation of skip guides.

4. At 275 feet in the Plutus shaft, cut and timber a station-crosscut 15 feet southeasterly to the Plutus vein. Total excavation for the station-crosscut shall not exceed 1,002 cubic feet.

Stage II

The work under this stage consists of the work in the original contract, as amended, that remains to be completed.

1. Drift easterly on the 275-foot level of the Plutus shaft along the Plutus vein 183.6 feet from the end of the station-crosscut.

2. Drift 210.6 feet westerly along the Plutus vein from the end of the west crosscut on the 244-foot level.

3. Crosscut 15 feet to the south from the face of the west crosscut on the 244-foot level of the Plutus shaft.

4. Dependent upon the results of the above drifting and/or crosscutting under Stages I and II, the Operator, with the prior written approval of the

Government, may perform not to exceed 110 feet of raising.

5. The Operator, from the time work is started on the 275-foot level, shall keep that level pumped dry until all work on that level is completed. Should it become necessary for the Operator to replace the pump presently operating, with equipment of greater pumping capacity, a pump capable of pumping 200 gallons per minute against a 400-foot hydraulic head shall be installed.

Stage III

1. Drift 375 feet easterly on the Norwich Hanging Wall vein from the 244-foot level crosscut to the rhyolite contact.
2. Crosscut 75 feet southerly from the East drift on the Norwich Hanging Wall vein on the 244-foot level, approximately 250 feet from the crosscut, to the mineralization indicated by Bureau of Mines' diamond drill Hole No. 5.
3. Dependent upon the results of the above drifting and/or crosscutting, the Operator with the prior written approval of the Government, may perform not to exceed 100 feet of raising.

Agreed Unit Costs 1/

Drifting and or crosscutting 920 feet @ $34.00/ft.	$31,280.00
Timbering 920 feet of drifts and/or crosscuts @ $5.00/ft.	4,600.00
Raising 210 feet @ $35.00/ft.	7,350.00
Unwatering and rehabilitating shaft, 36.5 feet @ $35.00/ft.	1,277.50
Cutting and timbering station-crosscut, 1,002 cubic feet @ $1.24/cu. ft. (rounded to)	1,242.50
Pumping 150 days @ $4.20/day 2/	630.00
Analyzing 500 samples for manganese and silver @ $2.00/sample	1,000.00
ESTIMATED TOTAL AGREED UNIT COSTS	$47,380.00
GOVERNMENT PARTICIPATION @ 75%	$35,535.00

1/ The unit costs include all costs whatsoever incidental to the completion of the work.

2/ This cost is allowable only in the event that the Operator replaces the presently operating pump with a pump of greater capacity, as described in item 5, Stage II.

Docket

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG - 3 1953

1201 N. Division St.
Spokane 2, Washington
July 31, 1953

AIR MAIL

WBM

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

Subject: Docket No. DMEA 2874 (manganese)
Irving and Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Selfridge:

Attached are 4 copies of a memorandum report from John S. McNabb, U. S. Bureau of Mines, describing a recent inspection of this property made in compliance with your teletype of July 16, 1953.

McNabb states that the structure is strong; his samples substantiate the applicants' earlier claims as to expected grade. The Field Team concurs with the examining engineer's recommendation that the application be approved.

By Field Team, Region II

M. E. Volin, Acting Exec. Officer
U. S. Bureau of Mines

Thor Kiilsgaard, Acting Member
U. S. Geological Survey

Enclosure

Reviewed by
DMEA OPERATING COMMITTEE
8-7-53
(date)

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG - 3 1953

1201 N. Division St.
Spokane 2, Washington
July 29, 1953

9/17/53

MEMORANDUM

To: DMEA Field Team, Region II

From: John S. McNabb, Mining Engineer, Bureau of Mines

Subject: Sampling of Plutus mine, 200 foot level
Docket No. DMEA 2874 (manganese
Irving and Nelson
Silver Bow County, Montana

The Plutus mine, Docket No. DMEA 2874, was inspected in the company of Mr. Robert Nelson, partner, on July 18, 1953.

The Plutus shaft has been rehabilitated to the 200 foot level. At that point the old station and workings that had been anticipated at the 225 foot level were encountered. The Plutus vein is exposed on the 200 foot level. The vein was sampled and the attached sample-assay map prepared.

At a later date Messrs. Nelson and Irving were consulted regarding their application for DMEA assistance to explore the Plutus vein. The program as outlined in Docket No. DMEA 2874 provided for the following work:

1. Repair 40 feet of station on the Plutus 225 foot level.

2. Repair 30 feet of drift - the drift west off the station.

3. Advance the face of the drift west a distance of 270 feet along the Plutus vein.

4. Drift easterly along the Plutus vein a distance of 200 feet.

5. Do 200 feet of raising at points to be determined later.

Items 1 and 2 represent a duplication of work to be done under DMPA contract No. GS-10P(D)-3 and should be deleted from the DMEA application. It is the applicants' request that items 3, 4, and 5 of the subject proposal be reviewed as stated, the only change being that the work would be performed on the 200 foot level rather than the non-existent 225 foot level.

Reviewed by
DMEA OPERATING COMMITTEE
8-7-53
(date)

The Plutus vein is very strong and well mineralized where it is exposed on the 200 foot level. It is unlikely that the width and manganese values will persist along the entire strike length of the vein. However, the occurrence of similar ore shoots along the vein can be anticipated.

The applicants' exploration proposal is sound; they are men of wide experience and of recognized ability in the mining industry, and the strong Plutus vein presents an excellent vehicle for a successful exploratory program. It is therefore recommended that the work as outlined in Docket No. DMEA 2674 be approved in the form of a DMEA contract.

Orig. & 3 cys - Wash. ✓
USGS (2)
DMEA
M/D
JBK/ks

John S. McNabb

FILE COPY
SURNAME:

Rutledge
Martin
Selfridge

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

Defense Minerals Exploration Administration
F. A. Rutledge
5285 3538

14X3923.970 - Working Fund - DMEA
July 16, 1953

A. E. Weissenborn, Executive Officer, DMEA Region II, Spokane, Washington

Irving has advised us 225 level Plutus mine now accessible and sampled. Our reply follows: "Reurtel July 15, Docket DMEA 2874, Plutus mine. Please submit referenced sampling analyses to A. E. Weissenborn, Executive Officer, DMEA Region II, who has been instructed to make examination if results warrant." If sample analyses favorable, please make new field examination and recommendations.

George C. Selfridge
G. C. Selfridge, Chairman (2/6)
Operating Committee

FARutledge/ls
7/16/53

Copy to: DOCKET
FIELD TEAM, REG. II (confirmation)
CODE No. 400
OPER. COMMITTEE
ADM. READ. FILE
AUDITS DIV., BUR. MINES
MARTHA CARR, USGS
EDGAR GEALY, USBM

R.C.S.
7-16-53

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

W. P. MARSHALL, PRESIDENT

FX-1201

SYMBOLS
DL=Day Letter
NL=Night Letter
LT=Int'l Letter Telegram
VLT=Int'l Victory Ltr.

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 16 1953

=CTA017 PRA764

1953 JUL 16 AM 12 54

PR=BUA330 NL PD=BUTTE MONT 15:

=C O MITTENDORF ADMINISTRATOR=

INTERIOR DEPT

:DEFENSE MINERALS EXPLORATION ADMINISTRATION WASH DC=

:RE PLUTUS DMEA APPLICATION 2874 AND YOUR LETTER OF MAY 9 1953 PLEASE BE ADVISED PLUTUS TWO TWENTY FIVE LEVEL NOW OPEN FOR EXAMINATION AND SAMPLING BY YOUR FIELD TEAM FOR YOUR INFORMATION OUR SAMPLING MORE THAN SUBSTANTIATES ORIGINAL DATA SUBMITTED PLEASE EXPEDITE CONSIDERATION OF OUR ORIGINAL

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

Docket

DOMESTIC SERVICE	
Check the class of service desired; otherwise this message will be sent as a full rate telegram	
FULL RATE TELEGRAM	
DAY LETTER	
NIGHT LETTER	

$ S E

WESTERN UNION

W. P. MARSHALL, PRESIDENT

1206 10-51

INTERNATIONAL SERVICE	
Check the class of service desired; otherwise the message will be sent at the full rate	
FULL RATE	
LETTER TELEGRAM	
SHIP RADIOGRAM	

NO. WDS.-CL. OF SVC.	PD. OR COLL.	CASH NO.	CHARGE TO THE ACCOUNT OF	TIME FILED
			DEPARTMENT OF THE INTERIOR Defense Minerals Administration	

Send the following message, subject to the terms on back hereof, which are hereby agreed to

RECEIVED JUL 21 1953

TELEGRAM

July 16, 1953

WSM

I. G. IRVING
84 HIRBOUR BUILDING
BUTTE, MONTANA

TELEPHONE: 2-3445

REURTEL JULY 15 CONCERNING DOCKET 2874. JOHN MCNABB RETURNING TO BUTTE TOMORROW EVENING. HE WILL CONTACT YOU REGARDING INSPECTION OF THE PLUTUS.

GOVERNMENT RATES
CHARGE TO: U. S. Geological Survey
So. 157 Howard St.
Spokane, Wash
OFFICIAL BUSINESS
cc: USM (2)
Chron.
Quinlan
IMEA

JAMES QUINLAN
ACTING MEMBER
IMEA FIELD TEAM
REGION II

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

[illegible] or [illegible], the sender of a [illegible] in the principal office [illegible] and, [illegible] in addition, Unless otherwise [illegible] and for [illegible], an [illegible] Telegraph Company as follows:

[illegible] shall not be liable for mistakes or delays in the [illegible] mission or delivery, or for non-[illegible], of any message received [illegible] hundred dollars; nor for mistakes or delays in the transmission or delivery, or for nondelivery, of any message received [illegible] five thousand dollars, unless specially valued; nor in any case for delays arising from unavoidable interruption in the work [illegible] of business.

[illegible] Telegraph Company shall not be liable for [illegible] or delays in the transmission or delivery, or for the non-delivery, of any message, [illegible] of the receiver or otherwise, beyond the [illegible] in any event the sum of five [illegible] that the message is valued, unless a greater value is stated in writing by the sender thereof at the time the message is tendered for transmission, and [illegible] the message is valued as aforesaid, an additional charge equal to one-tenth of one per cent of the amount by which such valuation shall exceed five thousand dollars.

3. The Telegraph Company is hereby made the agent of the sender, without liability, to forward this message over the lines of any other company when necessary to reach its [illegible]

4. Unless otherwise indicated in connection with the listing of individual places in the filed tariffs of the [illegible] incoming cable or radio message covers its delivery within the following limits: In cities or towns of 5,000 or more inhabitants where the Telegraph Company has an [illegible] by the filed tariffs of the Telegraph Company, is not operated through the agency of a railroad company, within two miles of any car barn or branch office of the [illegible] company; in cities or towns of 5,000 or more inhabitants where, as shown by the filed tariffs of the Telegraph Company, the telegraph service is performed through the agency [illegible] company, within one mile of the telegraph office; in cities or towns of less than 5,000 inhabitants in which an office of the Telegraph Company is located, within one-half mile [illegible]. Beyond the limits above specified the Telegraph Company does not undertake to make delivery but will endeavor to arrange for delivery as the agent of the sender. [illegible] notice that the sender authorizes the collection of any additional charge from the addressee and agrees to pay such additional charge if it is not collected from the addressee. [illegible] will be no additional charge for deliveries made by telephone within the corporate limits of any city or town in which an office of the Telegraph Company is located.

5. No responsibility attaches to the Telegraph Company concerning messages until the same are accepted at one of its transmitting offices; and if a message is sent to such office [illegible] Telegraph Company's messengers, he acts for that purpose as the agent of the sender.

6. The Telegraph Company will not be liable for damages or statutory penalties where the claim is not presented in writing to the Telegraph Company, (a) within ninety days [illegible] filed with the Telegraph Company for transmission in the case of a message between points within the United States (except in the case of an interstate message in [illegible] between a point in the United States on the one hand and a point in Alaska, Canada, Mexico, or St. Pierre-Miquelon Islands on the other hand, or between a point in the United [illegible] or in the air, (b) within 95 days after the cause of action, if any, shall have accrued in the case of an interstate message in Texas, and (c) within 180 days after [illegible] filed with the Telegraph Company for transmission in the case of a message between a point in the United States and a foreign or [illegible] other than the point [illegible] paragraph; provided, however, that this condition shall not apply to claims for damages or overcharges within the purview of Section 415 of the Communications [illegible]

7. [illegible] that in any action by the Telegraph Company to recover the toll for any message or [illegible] for prompt and correct transmission and delivery thereof shall be [illegible] by competent evidence.

8. [illegible] governing the transmission of messages according to their classes, as enumerated below, shall apply to messages in each of such [illegible] in addition to [illegible]

9. No employee of the Telegraph Company is authorized to vary the foregoing.

5-49

CLASSES OF SERVICE

DOMESTIC SERVICES

FULL RATE TELEGRAM

A [illegible] service.

DAY LETTER (DL)

[illegible] at a rate of lower than the full rate

[illegible] (NL)

[illegible] A. M. for delivery not earlier than the following morning at rates [illegible] lower than the full rate telegram or day letter rates.

INTERNATIONAL SERVICES

FULL RATE (FR)

The standard fast service at full rates. May be written in any language that can be expressed in Roman letters, or in secret language. A minimum charge for 5 words applies.

LETTER TELEGRAM (LT)

Overnight plain language [illegible] Minimum charge for 22 words applies.

SHIP RADIOGRAM

A service to and from ships at sea. Plain or secret language [illegible] Minimum charge for 5 words applies.

STANDARD FORM No. 14
APPROVED BY THE PRESIDENT
MARCH 10, 1926

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

FROM

BUREAU

CHG. APPROPRIATION

U. S. GOVERNMENT PRINTING OFFICE 10—1723

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 2 1 1953 1953 JUL 15 PM 9 19

COPY

TELEGRAM:

PRB693
PR. BUA331 NL PD = BUTTE MONT 15 -
A. E. WERNCUNBURN EXEC OFFICER
DEFENSE MINERALS EXPLORATION ADMINISTRATION
SOUTH 157 HOWARD ST SPOKANE WASH

RE PLUTUS DMEA APPLICATION 2874 PLEASE BE ADVISED PLUTUS 225 LEVEL NOW OPEN FOR IMMEDIATE SAMPLING AND INSPECTION. OUR SAMPLING MORE THAN SUBSTANTIATES ORIGINAL DATA SUBMITTED ON WIDTH AND GRADE PLEASE ARRANGE TO HAVE FIELD TEAM EXAMINE EXPOSURE TO EXPEDITE IMMEDIATELY HANDLING OF OUR ORIGINAL APPLICATION IN ACCORDANCE WITH MITTE DORFS LETTER TO ME OF MAY 9 1953

I G IRVING

cc: UNEM (2)
DMEA (2)
Quinlan

Copy retained 400

FILE COPY
SURNAME:

Rutledge
Martin
Selfridge

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

U. S. Dept. of the Interior

Defense Minerals Exploration
Administration
14X3923.970 - Working
Fund - DMEA

STRAIGHT WIRE

July 16, 1953

Irving G. Irving
84 Hirbour Building
Butte, Montana

Reurtel July 15 Docket DMEA 2874, Plutus mine. Please submit referenced sampling analyses to A. E. Weissenborn, Executive Officer, DMEA Region II, who has been instructed to make examination if results warrant.

C. O. Mittendorf

C. O. Mittendorf
Administrator, DMEA

Copy to: Field Team, Reg. 2
Docket DMEA 2874
Adm. Read. File
Confirmation
Audits Divn., Bur. of Mines
Code 400
Martha Carr, USGS
Edgar Gealy, USBM
Oper. Committee

FARutledge/ls
7/16 53

R.C.S.
7-16-53

C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration, Dept. of Interior
14X3923, Working Fund,
Interior, DMEA

FILE COPY
SURNAME:

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

dmea-2874

JUNE 4, 1953

MR. IRVING G. IRVING
HIRBOUR BUILDING
BUTTE, MONTANA

REFERENCE YOUR LETTERS MAY 13 TO 30 INCLUSIVE RE PRESENT FINANCIAL PROBLEMS UNDER GSA CONTRACT. REGRET TO ADVISE THAT DMEA UNABLE TO RELIEVE YOUR DIFFICULTIES AND LETTER FOLLOWS REJECTING YOUR AMENDED PROPOSALS. WISH TO POINT OUT THAT ONE OF BASIC CONCEPTS LEADING TO ESTABLISHMENT EXPLORATION PROGRAM AND AGREED IN WRITING BETWEEN SECRETARY INTERIOR AND DPA PROHIBITED EXPLORATION GRANTS TO BE SUPPLEMENTED BY OTHER GOVERNMENT FUNDS FOR PURPOSE OF SUPPLYING APPLICANT WITH HIS SHARE OF PROJECT COSTS.

C. O. Mittendorf (fw)

C. O. MITTENDORF, ADMINISTRATOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

S.H.
6-4-53

COMittendorf/fw

cc: Admr Reading File
Mails & Files
Field Team, Reg. II
Mr. Melcher, Rm. 3511
Mr. Crittenden, 4229 GSA Bldg.
Mr. Martin
Mr. Mittendorf

FILE COPY
SURNAME:

400

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

Martin
Rutledge
DeBruff
Carr
Hedges
Kornfeld
Selfridge

Air Mail

JUN 4 1953

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

Re: Docket No. DMEA 2874 - Manganese
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Irving:

Reference is made to the following correspondence:

(1) Your letter of May 12, 1953, to Mr. A. E. Weissenborn, DMEA Executive Officer, Region II.

(2), (3), and (4) Your letters of May 13, 19, and 23 to this Administration.

(5) Your letter of May 23, 1953, to Mr. Max D. Crittenden, Jr., U. S. Geological Survey.

We note from the foregoing correspondence that you desire to have your Norwich mine and Plutus mine operations considered jointly, and that you are requesting assistance from DMEA in order to complete that portion of your DMPA program (under your GSA contract) which calls for rehabilitation of the Plutus shaft from the present depth of 150 feet to the 225-foot level, or the 240-foot level if you find that the 225-foot level is tighly caved like the Plutus shaft. We have delayed in answering your letters while we awaited the report of Mr. H. A. Waite of DMPA, whose inspection trip to the Plutus shaft has now been completed.

You will appreciate that none of the information contained in the above correspondence and reports adds significantly to the geological data available to us on March 9, 1953, when we advised you that your application would be held in abeyance until the 225-foot level of the Plutus mine could be reopened and the Plutus vein exposed and sampled.

We note your statement that your part of the matching funds would be the balance of funds already available to you and earmarked for the project,but we are committed to the arrangement that financial assistance by means of exploration grants can not be supplemented by

other Government funds under the Defense Production Act for the purpose of supplying an applicant with funds for his participation in exploration projects. Consequently, we are unable to comply with your request for assistance.

We understand the difficult situation which confronts you and we regret that we are not in a position to help you under these circumstances.

Sincerely yours,

C. O. Mittendorf

Administrator

Copy to: Mr. H. A. Waite, DMPA, GSA Bldg.

D.N.
6-4-53

Docket
Field Team, Region 2
Code 400
Operating Committee
Adm. Reading File
N. B. Melcher, USBM
M. D. Crittenden, USGS

WSMartin/ls
6/4/53

400 file

WSM
Rutledge
Hoffman

Mr. Russell Forbes, Acting Administrator
Defense Materials Procurement Agency
General Services Administration Building
Washington 25, D. C.

Re: Docket No. D.M.P.A. - 2465, Manganese
Docket No. D.M.P.A. - 2874, Manganese
Irving G. Irving and Robert H. Nelson
Plutus and Norwich mines
Silver Bow County, Montana

My dear Mr. Forbes:

In February 1953 the Defense Minerals Exploration Administration received from Messrs. Irving G. Irving and Robert H. Nelson an application for assistance in an exploration project at the subject property. We then agreed to consider the proposed project as soon as the operators reached the 225-foot level of the Plutus mine in the course of their D.M.P.A. project.

We now find that because of unanticipated difficulties encountered in rehabilitating the Plutus shaft, the operators will not be able to reach the 225 level with the funds available to them at present. We, therefore, contemplate offering to the operators a contract covering the exploration phases of their operations on and below the 225-foot level of the Plutus mine and the corresponding horizon of the Norwich mine.

We understand from conversations between our respective divisions concerned with manganese that you concur with us in the desirability of the proposed project. Our Chief Counsel informs us, however, that before we can enter into such a contract, we must obtain from you an agreement to subordinate your lien to the D.M.E.A. lien which is required in order to secure the payment of our percentage royalty should a discovery or development from which production may be made result from the proposed exploration work.

Sincerely yours,

Administrator

WSMartin/ls
5/28/53

Copy to: Docket
Adm. Read. File

cc: Code 400
Code 140

Are enclosed copies of the letters dated May 13, 19, and 23 from Messrs. Irving and Nelson to the Administrator, Defense Minerals Exploration Administration, and the various enclosures mentioned in these letters.

ROBERT H. NELSON

Docket

IRVING G. IRVING

NORWICH MINE

HIRBOUR BUILDING

BUTTE, MONTANA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 2 1953

May 30, 1953

WSM

Mr. C. O. Mittendorf, Administrator,
Defense Minerals Exploration Administration,
Washington 25, D. C.

Subject: Norwich-Plutus Mine, Manganese
DMPA 2465; DMEA 2874
I. G. Irving & Robt. H. Nelson,
Butte, Montana.

Dear Mitt:

The enclosed copy of my letter to Tom Lyon will bring you up to date on our situation.

I hope something can be done soon on this matter as the situation is pretty disturbing.

Sincerely yours,

Joe

I. G. Irving

JUN 2 1953

May 30, 1953

Mr. Tom Lyon,
Acting Deputy Administrator,
Defense Materials Procurement Agency,
Washington 25, D. C.

Subject: Norwich-Plutus Mine--Manganese
DMPA-2465; DMEA-2874
I. G. Irving & Robt. H. Nelson
Silver Bow County, Montana

Dear Tom:

Thank you for your letter of May 27th, in which you say that you have as yet nothing definite to report but that Mr. Waite has been working with the DMEA in an attempt to obtain a DMEA loan for our Plutus-Norwich project.

I imagine that this was written before Mr. Waite phoned me as the general tone of his conversation, as I interpreted it, was that there was some hope and it left me with the impression that the crucially needed aid would be forthcoming. I certainly hope so because our situation is indeed critical and will become practically hopeless in a short time if help is not obtained.

On May 28th, we received the final disbursement ($10,995.00) of our GSA advance. This was deposited and after making out the bi-weekly payroll, due that day, we were left with a bank balance of $14,251.88. This represents, in entirety, our resources left to finish the job.

I have just gone over our obligations, including accrued Withholding tax and payroll tax obligations (the former we pay monthly and the latter quarterly, due June 30th) and find that they total--trade accounts included-- approximately $2,620.00. Our trade accounts have been kept current, but the above amount includes the cost of fifteen sets of framed shaft timber, together with lagging, that we just bought through the A.C.M. Company, and for which we will be billed the first of the month.

In addition to the above there is about $375.00 in accrued payroll. Our total obligations, then, as of the first of June, approximate $3,000.00.

COPY

When these current obligations are deducted from our present bank balance, it will be seen that we have about $11,250.00 left with which to go ahead.

Our shaft is now fully timbered down to a point 155 feet below the collar. As of April 30th, it was timbered down to a point 123 feet below the collar, and the advance made during the month was 32 feet, or 1.28 feet per working day.

The ground is now firming up to some extent, and if this condition continues, jacket sets and spiling may not be necessary from here on down and our shaft men believe that if they face only the mucking and timbering of a hole of normal shaft size, they will be able to make more rapid progress--perhaps 2.5 feet per day, or more.

We have at least eighty feet more of shaft to rehabilitate(allowing for at least a ten-foot sump) and, at most, let us say one hundred feet of shaft repair, if the 225 level proves to be in such shape that it would be advisable to drop 20 feet below it and cut a new station.

On the basis of a progress of 2.5 feet a day, this rehabilitation will take from five to seven weeks, depending on the distance.

Our outgo for the month of June is estimated at $7,000.00. This includes estimated material and power, supervision and a crew of eight men on shaft rehabilitation (four on a shift) plus a mechanic and an electrician who will be on the payroll for part of the month, finishing up installations around the engine room and miscellaneous tail-end work. In July, with the electrician and mechanic gone, the outgo is estimated at $6,500.00.

With only $11,250.00 at hand, it is obvious that we have enough money to keep going until only shortly after the middle of July. At this point we should be on the 225 station, or about to cut a new station just below it.

If additional aid is not forthcoming, we will be truly in a sad state and the outcome of our project clear. We expect to find some ore on the Plutus vein, at the 225 station, but will need some working capital to get started mining on it. Our main Norwich ore reserve is, as you know, 400 to 500 feet northwest of the Plutus 225 station. Unless we have money to get over to this reserve repayment of our government advance will be impossible. The consequences of this are pretty bad.

It requires no stretch of the imagination to see that we face a tough crisis and a virtually impossible situation, and frankly, we are both worried sick about it.

I have confidence, however, that aid will come. We keep going because we have to. With a crew on hand and water to hold in a delicate shaft situation that will not permit the risk of allowing the water to rise, we have no choice but to go on as long as we can. Our moral and spirit is buoyed up with the sincere belief, mentioned above, that aid will come in time.

COPY

This time element, however, is also something that worries us no end because, if the aid is in the form of a DMEA loan and contract with us required to put up one-quarter of the money we will have to have the commitment and contract while we still have some of our funds left in order to be able to match funds.

For example, if we need, let us say, about eight thousand dollars with which to match the government's money, we will be reduced to that amount in about two week's time. And since we will still be in the shaft, the balance of the shaft repair would have to be in the DMEA contract, unless there is some other way of handling the aid given.

Another thing that concerns us is the fact that the government's share of such a contract expense is usually not actually received until six or seven weeks have elapsed from the time the work started. Our present cash reserves just allow continued operation for about that period, beginning June first.

All in all, it is a frightening situation and I can only hope that a solution may be quickly found.

Sincerely yours,

I. G. Irving

cc Messrs. Waite and Wittendorf

COPY

FILE COPY
SURNAME:

Martin

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

May 26, 1953

MEMORANDUM

To: John D. Hoffland, Chief Counsel
Jay L. Chambers, Chief, Contract & Audit Division

From: Iron and Ferro-Alloys Division

Subject: Docket No. DMMA 2874
Irving and Nelson
Plutus and Norwich mines
Silver Bow County, Montana

Reference is made to letters of May 13, 19, and 23 to the Administrator from Irving and Nelson of Butte, Montana, and to the various enclosures mentioned in the above letters.

As you will note from the foregoing correspondence, the subject operations at the Plutus and Norwich mines, being so closely interdependent, must be considered jointly. Mr. H. A. Waite, DMPA, who has just returned from an inspection trip to the properties, confirms the evidence submitted already that the operators will soon be without funds to continue the DMPA project.

We are investigating with the commodity specialists of the Bureau of Mines and Geological Survey the technical aspects of the alternative applications contained in the above correspondence. Any contract that DMMA prepares to cover an exploration project will have to be made promptly, before the operators expend all their funds, as a very short shut-down would clearly place the project beyond any possibility of reopening by Irving and Nelson.

In the meantime it will be appreciated if you can arrange for investigation of the legal and auditing aspects of a contract with operators already deeply indebted to DMPA. If there are no objections to such an arrangement from your respective points of view, we will submit a draft of a contract as soon as we can determine from the commodity specialists whether the project warrants participation by DMMA.

WSMartin/ls 5/26/53

W. S. Martin, Acting Chief
Iron and Ferro-Alloys Division

Copy to: Mr. Chambers
Docket
Adm. Read. File
Code 400

ROBERT H. NELSON

IRVING G. IRVING

NORWICH MINE
HIRBOUR BUILDING
BUTTE, MONTANA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
MAY 25 1953

May 23, 1953

Mr. C. O. Mittendorf, Administrator,
Defense Minerals Exploration Administration,
Washington 25, D. C.

Subject: Norwich-Plutus Mine, Manganese
DMPA 2465---DMEA -2874
I. G. Irving & Robt. H. Nelson

Dear Mitt:

I have just sent to Mr. Crittenden, of the U.S.G.S., a set of maps pertaining to the Norwich and Plutus Mines, and showing our new plan for development. The enclosed copy of my letter to Mr. Crittenden contains some further discussion of the matter which may be of interest to you.

As you know from recent previous correspondence, owing to difficulties encountered in the caved Plutus shaft, we are going to be short of money and are rapidly heading toward a crisis.

We have men on the payroll and water to hold, in a shaft that is now fully timbered down to the one-hundred and fifty foot point.

If additional aid is not forthcoming, our whole program will obviously collapse, and Bob Nelson and Joe Irving along with it. Our development program and the ore reserves we are heading for are certainly of some importance to the whole manganese purchase program. We have signed personal notes for the $75,000.00 advance we got from the GSA and the whole thing is quite serious from every point of view. Our project is a meritorious one and will pay out, if properly financed. Any help you can arrange for us will be greatly appreciated.

Very sincerely yours,

Joe

I. G. Irving

May 23, 1953

Mr. Max D. Crittenden, Jr.
United States Geological Survey
Washington 25, D.C.

Subject: Norwich-Plutus Mines, Manganese
Silver Bow Co., Montana
DMPA - 2465 and DMEA - 2874

Dear Mr. Crittenden:

On his recent visit to Butte, Mr. Harold Waite, of the D.M.P.A. suggested that we bring your set of Norwich maps up to date by posting such new geologic data as we may have picked up during the last year.

Much new information -- having a very important bearing on the Norwich ore reserves and ore projections -- was gained by the recent work done at the Norwich mine, on the surface by trenching and on the New Norwich 110 level by underground work and diamond drilling. One of the most important discoveries was the existence of what is called the Big Flat Fault. This, by the way, will go a long way toward explaining some of the negative results of the Bureau of Mines drill holes numbered 1, 3 and 6. Cross sections will illustrate this point. It also explains the true relationship of the so-called Hangingwall Vein to the Footwall Vein. The former apparently being an offset, fault segment of the latter. If the movement, which is evident on this fault be carried over to the Plutus shaft area interesting things are seen there also. See maps.

We have also revealed additional information on the Plutus claim. This has come about by a very careful remapping of the Plutus surface exposures and the new exposures made available by reopening old cuts and shallow workings.

In view of the interrelationship of the two claims from an ore reserve, development and geologic point of view, we have decided to present you with a new set of maps rather than to attempt to post all of this information on the sets handed us by Mr. Waite.

COPY

I. G. Irving
Norwich-Plutus Mines

May 23, 1953

This new set contains a combination of factual material (drawn from all sources, including your notes, the Bureau of Mines' notes, other government data seen, and the earlier and most reliable mapping of one of Butte's foremost company geologists) and projections based on a study of this factual material.

The set contains a surface geology sheet, one for the upper Norwich workings and the Plutus 125 level, a map showing vein projections on the proposed Plutus 225 level and one also showing mapping and projections on the Plutus 400 level. Also included, are two long sections (revised in light of new information gained) showing probable and possible ore on the Norwich veins. On file with the D.M.E.A. (Docket #2874) is a long section showing Plutus indicated ore, both probable and possible.

A glance at these maps will show the nature of our proposed development on the Plutus 225 level -- a new program that involves drifting westerly on the Plutus Vein for about 150 feet before turning north and crosscutting to the Norwich Reserves.

This new program appears to us to have considerable merit and should make available 23,475 tons of probable ore on the Norwich Veins in addition to revealing certainly some appreciable tonnage on the Plutus Vein -- probably at least 7500 tons using very heavy waste discount factors. See Norwich Long Sections enclosed and Plutus section in D.M.E.A. files.

In addition to making ready for mining the 23,475 tons (15,800 on F.W. Vein plus 7675 on the so-called H.W. Vein) on the Norwich Veins it will also develop, below the 225 level, block G encompassing Bureau of Mines Drill hole No. 2, which we believe has an indicated 18,750 tons. Also, ore below the 225 level should be developed on the Plutus Vein. All of this additional ore on both veins may be mined later by dropping down the Plutus shaft another hundred feet.

The ore possibilities of the mines down to the 400 level of the Plutus are obvious but not subject to accurate measure. Certainly, the big vein in the Plutus 400 crosscut, which was mapped reliably as half quartz and half manganese carbonate by a geologist known to all of us, cannot be dismissed lightly. (The information on Plutus 225 level showing a face of excellent ore came from the same source.) Ore possibilities above the Plutus 400 level most likely exceed 150,000 tons; not measured ore, to be sure, but prospective ore based on reasonable geologic deductions and the history of the camp.

COPY

I. G. Irving
Norwich-Plutus Mines

May 23, 1953

We trust that this information will be of interest to you and we are ready to supply more detailed information or any additional data you may request.

Sincerely yours,

I. G. Irving

COPY

ROBERT H. NELSON

IRVING G. IRVING

Docket

NORWICH MINE

HIRBOUR BUILDING

BUTTE, MONTANA

May 19, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 21 1953

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
Washington 25, D. C.

Re Docket No. D.M.E.A.-2874--Manganese
Irving G. Irving and Robert H. Nelson
Plutus Mine, Silver Bow Co., Montana

Dear Mr. Mittendorf:

to Region II
See May 13 to COM.

Our letter of May 12, 1953 requested that the captioned application be amended and considered as a request for a loan of $27,369.10, to be expended for development of the Plutus vein from about the 225 level of the Plutus shaft. or 240' maybe

On Nov. 22, 1952, G.S.A. made an advance of $75,000 to us so that we could expedite production of manganese ore from the Norwich claim. Increase in production from our assured reserve was to be brought about through the acquisition and installation of necessary machinery, rehabilitation of the Plutus shaft, and thereafter crosscutting to the Norwich ore reserve at a point substantially below the lowermost workings of the Norwich mine.

In spite of experts' predictions to the contrary the rehabilitation of the Plutus shaft has been a slow and costly affair. From a point 75 feet below the collar of the shaft to 146 ft. (the present point of complete rehabilitation) working two shifts a day we have averaged 1.5 foot of progress daily. The shaft work has cost and is costing $155 a foot.

The granite country rock is altered to the extent that it is like sand and we have been forced to spile the last 50 feet of shaft as well as jacket set. Although the original timber has long been under water (and presumably protected) we find it rotted and useless. An expected "crowsnest" has not developed. Therefore we cannot expect conditions in the shaft to improve between the present bottom and our immediate objective 90 feet deeper.

This unfortunate condition could not have been anticipated by us or any of the several experts who have constantly assisted and advised us in all phases of our operation. But there she is.

Irving G. Irving and Robert H. Nelson May 19, 1953

As of today we have approximately $16,000 in cash or undrawn GSA credit, an amount insufficient to complete the Norwich crosscut, bring the known ore into production, and further develop the Norwich vein beyond the limits of our known ore reserve.

In order that the Plutus-Norwich project (and properly it should be considered as one unified operation) can be brought into early and full production and its manganese utilized in the stockpile program further financial assistance is necessary.

Completion of the project may be accomplished through the expenditure of $42,000 beyond this point. The work would consist of:

90 feet of Plutus shaft repair from 145 ft. to 235 ft.	@$155 a foot	$13,950.
30 ft. of crosscut and 25 ft. of drift repair	@ $40 a foot	2,200.
130 ft. drift west on Plutus vein in ore	@ $40 a foot	5,200.
Establishing switch and turn from drift to crosscut North		450.
405 ft. of crosscut from Plutus vein to Norwich vein	@ $40 a foot	16,200.
100 ft. drifting on the Norwich vein beyond ore reserve limits	@ $40 a foot	4,000.
	Total	$42,000.

All of our own resources went into the mine before the GSA advance was made available. All of our mining machinery, equipment and tools are mortgaged to the Government. All of our leases are assigned to the Government. From all of the production from either the Plutus vein or the Norwich vein a definite percentage of gross proceeds is allocated to Advance repayment. It is obvious why we are unable to raise additional funds from private sources.

Dollarwise we are presently current on our Government repayment schedule, and expect to remain so for the next three months at which time we expect production from the Plutus to keep us current for several months -- or until we have reached the Norwich reserve.

By about June 1st our cash will be down to about $11,000.

Therefore, you are requested to consider this letter an Alternative amended application under the captioned docket number for a D.M.E.A. loan of $42,000, the proceeds of which will be expended in shaft rehabilitation of the Plutus shaft, rehabilitation and drifting on the Plutus vein for a total distance of 160 feet, crosscutting for a total distance of about 405 feet to the Norwich vein, and thereafter drifting on the Norwich vein for a distance of 100 feet beyond the lines of the present ore reserve blocks on that level.

Our part of the matching funds will be supplied by the balance of funds already available to us and earmarked for the project.

Our study of the financial aspects of such a loan convinces us clearly that, based on the grade and quantity of ore expected from the work outlined, we can and will agree to meet your usual repayment terms on all production from the work made possible through making the proposed loan. In addition we will execute a guaranty for the Norwich similar to that already executed for the Plutus, the original of which is in your files.

Sincerely yours,

Irving G. Irving

Irving G. Irving

Robert H. Nelson

Robert H. Nelson

Robert H. Nelson

Irving G. Irving

NELSON AND IRVING

GEOLOGICAL INVESTIGATIONS
Supervision of
DEVELOPMENT - EXPLORATION

MINING CONSULTANTS
HIRBOUR BLDG. BUTTE, MONTANA
TELEPHONE 2-3445

MINE VALUATION
Counsel in
MINE MANAGEMENT

May 13, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 15 1953

Mr. C. O. Mittendorf, Administrator,
Defense Minerals Exploration Aministration,
Washington 25, D. C.

Subject: Docket No. DMEA-2874--Manganese
Irving G. Irving & Robt. H. Nelson,
Plutus Mine, Silver Bow Co., Montana

Dear Mr. Mittendorf:

For your information, enclosed is a copy of a letter to Mr. Weissenborn requesting that our application be amended to eliminate possible objections which might be raised concerning the expenditure of funds requested in our original application. It was pointed out in your letter of March 9th that part of the requested program represented a duplication of work, now undertaken by our GSA advance.

We believe that our amended application eliminates the objection.

We understand Congress is taking a dim view of the splendid work made possible through your organization. If there is anything we can do officially, or unofficially, to permit continuation of the work of the Defense Minerals Exploration Administration please call on us for any support we may be able to give.

Sincerely yours,

I. G. Irving

I. G. Irving

May 12, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 15 1953

Mr. A. E. Weissenborn, Executive Officer,
DMEA Field Team, Region 11,
United States Department of Interior,
Defense Minerals Exploration Administration,
So. 157 Howard Street, Spokane 4, Washington.

Subject: Docket No. DMEA 2874- Manganese
Irving G. Irving & Robt. H. Nelson
Plutus Mine, Silver Bow Co., Montana.

Dear Mr. Weissenborn:

In March and April of this year, the Administrator of the D.M.E.A. suggested that consideration of the captioned application be held in abeyance until the 225 foot level of the Plutus Mine could be reopened and the Plutus Vein actually exposed and sampled on that level.

We have always felt that the Plutus Vein, a strongly mineralized and persistent structure, traceable on the surface for more than seven-hundred and fifty feet, warranted extensive development. Likewise, we felt that the most appropiate place to begin this development would be from the 225-foot level of the Plutus shaft, now being rehabilitated to make possible the mining of the Norwich ore reserve.

At the time of filing the subject application, our intentions were to develop the Norwich Vein from the 400-foot level. Operating considerations subsequently made it advisable to defer the 400 level project and instead, develop the assured Norwich ore from the 225 level.

Thus there arose an overlap of projects involving an estimated expenditure of about $3,600.00.

On April 7th we wrote the Administrator that the Plutus shaft had been found to be badly caved but we hoped for relief when the 125-foot level of the Plutus had been passed. We are now down 140 feet in the shaft and the shaft still is completely caved. In light of this condition we now feel that the entire 225-foot level might also be caved as tightly as was the 125 level.

COPY

Should such be the case, we will establish a new level from the shaft at a point possibly 240 feet below the collar, cut the station, and thereafter crosscut to the Norwich Veins.

That crosscut will cut the Plutus Vein at some short distance, and the work done to expose that vein, ofcourse, will be for Norwich account.

Our original application requested $3,600.00 for the rehabilitation of the crosscut and short drift on the Plutus Vein.

Insofar as time is so essential to us, and production of manganese so important to you and the entire Manganese Program, please consider this letter a formal request to amend the subject application by deleting the request for $3,600.00 for level rehabilitation.

Please consider our application for a D.M.E.A. loan of $27,369.10 to be expended for actual exploration of the Plutus Vein, commencing at a point where actually exposed from our 225 to 250 foot horizon. This sum represents the cost on a unit basis of $39.73 a foot for the 670 feet of work involved plus $750.00 for assaying.

We also suggest that the commitment be made by your Agency at this time, and that final OK and approval of the actual work be dependent upon agreement by your field team that the exploration is warranted, not only from the shallow workings (details of which were furnished the Administrator in our letter of March 10th and copy of which is enclosed for you) but also from the ore and structure which will be revealed by our 225 to 250 work.

Yours very truly,

Irving G. Irving

Robert H. Nelson

cc: Administrator

COPY

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

Docket

April 24, 1953

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

Re: Docket No. DMEA-2874 (Manganese)
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana

WSM

Dear Mr. Selfridge:

This will acknowledge receipt of your letter of April 16, 1953, giving cover to a copy of Mr. Irving's letter to Mr. Mittendorf.

We will contact Mr. Irving and will arrange to have a representative of the Field Team present to specify the location and manner of the sampling when the 225 level is reached.

By Field Team, Region II

A. E. Weissenborn

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

M. E. Volin

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

cc: USBM(2)
Nickelson

Copy ret...

FILE COPY
SURNAME:

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

400

Rutledge
Martin
Selfridge
Feightner

AIR MAIL

APR 16 1953

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 2874 - Manganese
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Weissenborn:

The enclosed copies of Mr. Irving's letter dated April 7, 1953, are being referred to your office for comment.

While we see no valid reason for not taking a sample in the location and manner suggested by Mr. Irving, we feel that the Field Team should be the one to specify the location and manner of the sampling when the 225-foot level is accessible. Until this area is reached, no definite commitment can be made.

Sincerely yours,

George C. Selfridge (GHB)
Chairman, Operating Committee

APPROVED:

J. H. Hedges (JHB)
Member, Bureau of Mines

A. R. Kinkel, Jr. (JHB)
Member, Geological Survey

FARutledge:foc
4-14-53

J. C. 4/16/53

Copy to: Docket
Field Team, Reg. 2
Code 400
Adm. Reading File
N. B. Melcher, USBM
M. D. Crittenden, USGS
Open Com.

Enclosure

FILE COPY
SURNAME:

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

400
Rutledge
Martin
Hodges
Mitchell
Selfridge
Fellmuth

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

APR 16 1953

Re: Docket No. DMEA 2874 - Manganese
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Irving:

This will acknowledge your letter of April 7, 1953, which is being referred to the Field Team for their comments.

From a review of the data available to us in Washington, we see no reason why a sample could not be obtained as you suggested, but we believe that a more representative sample could be taken after the drift becomes available for sampling over a length of 30 feet. The composite geological and assay map accompanying your application indicates too, that the location you suggest would give a lower manganese content than one further from the shaft.

Sincerely yours,

C. O. Mittendorf (fw) J. C. 4/16/53
Administrator

FARutledge:foc
4-14-53

Copy to: Docket
Field Team, Reg. 2
Code 400
Adm. Reading File
N. B. Melcher, USBM
M.D. Crittenden, USGS

Robert H. Nelson

Docket.

Irving G. Irving

NELSON AND IRVING

GEOLOGICAL INVESTIGATIONS
Supervision of
DEVELOPMENT - EXPLORATION

MINING CONSULTANTS
HIRBOUR BLDG. BUTTE, MONTANA
TELEPHONE 2-3445

MINE VALUATION
Counsel in
MINE MANAGEMENT

April 7, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 13 1953

WSM

Mr. C. O. Mittendorf, Administrator,
Defense Minerals Exploration Administration,
Washington 25, D. C.

Re: Docket No. DMEA 2874-Manganese
Irving G. Irving & Robt. Nelson,
Plutus Mine
Silver Bow County, Montana.

Dear Mr. Mittendorf:

Your letter of March ninth has been received. I note that the subject application is being held in abeyance until the 225 level of the Plutus is reopened and the Plutus vein exposed and sampled, provided that assay results are available within a reasonable period of time.

We ran into a large and difficult cave in the Plutus shaft, just above the 125 level and encountered all of the difficulties that go with such a condition--a matter that I am sure, with your experience, you will understand.

The situation, however, has been dealt with and I am happy to say that the shaft is now completely timbered, with the large cave caught up (this required about ten sets of square set timber, filling up the huge hole on the north side of the shaft) and a beautiful job has been done. In addition to this all surface installations have been completed. The latter includes an 800 cubic foot compressor, hoist and other equipment set on good concrete foundations and all other surface work. The cave and the hundreds of tons of muck that had to be first held, while shaft timber was hung through the mess, has put us off schedule about five or six weeks.

The water is now just a few feet below us and pump column and pumps are now being installed. We should find the shaft in much better condition below the 125 level, just 18 feet below our present point.

I understand your feeling that the Plutus vein, on the 225 level, ought to be exposed and sampled before final approval of the project. Let me state again, however, that the mapping and sampling of this vein, as in the case of the geologic data submitted for the Plutus 400 level, was done by the same geologist of Butte background and unquestioned reputation. His notes were made available to us by the company.

If you will consult the maps, you will note that the Plutus vein--on the 225 level--is just 28 feet north of the shaft. Here it has been drifted upon for only thirty feet to the west.

If we find that the drift is caved, would it be proper and satisfactory, for the purposes of our application and proving the vein's value, to take a round or two out of the vein in the back of the crosscut from the shaft, and thus expose it for inspection and sampling, rather than to repair thirty feet of drift. The latter might be costly and since the drift face is only thirty feet to the west, the alternative I suggest might suffice.

If this were acceptable, and the vein exposed was strong and commercial, could our DMEA loan then be based on further progress from this point on? In this way, the repair of the drift could be made part of the project, as originally contemplated.

I would appreciate hearing from you in this matter. With good luck we should be down on the 225 level in about a month's time, but if the shaft is in bad shape below the 125 level, its rehabilitation might take longer. I hope not.

Sincerely yours,

I. G. Irving

I. G. Irving

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

March 12, 1953

WSM

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 26 1953

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

Re: Docket No. DMEA-2874 (Manganese)
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Selfridge:

This will acknowledge your letter of March 9, 1953. Our report was made on February 6, and at the time of our field examination on January 31, we did not know that approval had been given to a change in the DMPA program on February 5 nor that such a change had been requested. We agree with your decision to hold the application in abeyance until the 225 level is reopened under the DMPA contract, and the Plutus vein is exposed and sampled. We shall also request our field men to keep in touch with Irving & Nelson and to report on the results of the work.

Sincerely yours,

A. E. Weissenborn

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

cc: USBM(2)
Nickelson

Copy retained 400

Copy retained 400

Robert H. Nelson

Docket

Irving G. Irving

NELSON AND IRVING

GEOLOGICAL INVESTIGATIONS
Supervision of
DEVELOPMENT - EXPLORATION

MINING CONSULTANTS
HIRBOUR BLDG. BUTTE, MONTANA
TELEPHONE 2-3445

MINE VALUATION
Counsel in
MINE MANAGEMENT

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 12 1953

March 10, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 13 1953

Mr. C. O. Mittendorf, Administrator,
Defense Minerals Exploration Administration,
Washington 25, D. C.

Subject: Docket No. DMEA-2874- Manganese,
Irving G. Irving & Robt. H. Nelson,
Plutus Mine, Silver Bow Co., Montana.

Dear Mitt:

The early disappearance of the snow, here in Butte, has permitted a more detailed surface mapping of the Plutus Vein outcrop, together with its exposures in the various shallow workings. This we have done and submit herewith a sketch of this work for your files.

We send this on to you, at this time, because not only does it agree substantially with the earlier mapping, which we reported was done by a well known and very reputable Butte geologist, but also because it brings out strikingly the persistence and strength of the Plutus vein as exposed on the surface. We thought you ought to have this supplemental information in your records.

I have dotted in the 125 and 225 levels, and have shown vein projections on the elevation of the 125 level. It seems probable that most of the old 125 level work, as well as the adit above, was not on the main structure. In the latter case, it is certain, as shown by the vein on the 30-ft level off the Tonner shaft, that much of the adit was off the vein.

The government's manganese purchase program has been in effect, in Butte, for over a year. It is reported that total shipments to the depot, to date, have been small. The plant, as you know, has not yet received enough ore to start up. It would seem that all sources of manganese ore, capable of substantial production, should be tapped.

Because it is obvious that relatively quick production could be achieved in the Plutus Mine, with the probability of total production being considerable, I have high hopes that approval of our exploration application will be forthcoming in the very near future.

Note
Copy received
& acc sent to
F. T.

When I speak of Plutus production, coming quickly, I refer specifically to the 225 level drift west which is in ore now and which when advanced westerly will come under a vein that on the surface ahead is shown to be (and it can be seen) a strong structure containing a manganese content in the oxidized zone that should be commercial ore of good grade in the carbonate zone, some sixty or seventy feet below.

Sincerely yours,

Joe -

I. G. Irving

400

FILE COPY
SURNAME:

Rutledge
Montague
Gilliland
Nelson
Selfridge

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

MAR 9 1953

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 2874 - Manganese
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Weissenborn:

Reference is made to the subject docket and the Field Team's report of February 6, 1953, recommending that a DMEA contract be granted for exploration of the Plutus vein on the 225-foot level of the Plutus shaft.

The applicant now has a purchase contract, GS-10P(D)-3, on the Norwich Mine for which access will be through the Plutus shaft. Originally this DMPA work was specified for the 400-foot level, but Irving requested a change to the 225-foot level by letter of January 31, 1953. Formal approval of this request was given to Mr. Orrin C. Bradeen, Regional Director, General Services Administration, Seattle, Washington, by John G. Ford, Contract Negotiations Division, DMPA, on February 5, 1953. The change in the development program was requested to expedite production in order that the production loan could be paid back within the 2-year purchase contract period.

Because the above DMPA development program will duplicate part of the work requested under the referenced application for exploration assistance and in view of the highly speculative probability of finding ore, the subject application will be held in abeyance until the 225-foot level is reopened and the Plutus vein is exposed and sampled.

It will be appreciated if you will keep us advised of the progress of the referenced development program and arrange to have the requested data on the Plutus vein obtained and sent to us when the 225-foot intercept is made.

Sincerely yours,

George C. Selfridge

(JHB)

Chairman, Operating Committee

Enclosures

Approved:

JH.
3/9/53

J. H. Hedges

(JHB)

Member, Bureau of Mines

R. M. Lemmon

(JHB)

Member, Geological Survey

cc: Docket
Field Team, Region 2
Code 400
Admn. Read. File
Operating Committee
N. B. Melcher, USBM
M. D. Crittenden, USGS

FARutledge/hhb
3/3/53

400

FILE COPY
SURNAME:

Rutledge
Martin
Kedzie
Langmor
Selfridge

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

MAR 9 1953

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

Re: Docket No. DMEA 2874 - Manganese
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Irving:

Reference is made to your application for exploration assistance on the subject property. In reviewing this docket, it was noted that part of the requested exploration program is a duplication of work now in progress under DMPA contract No. GS-10P (D)-3, wherein the development program has been changed from the 400-foot level of the Plutus Mine to the 225-foot level.

Because of the above duplication, the subject application will be held in abeyance until the 225-foot level can be reopened and the Plutus vein exposed and sampled, provided that assay results are available within a reasonable period of time.

Please be assured that the subject application will receive prompt consideration as soon as the requested sample information is submitted.

Sincerely yours,

C. O. Mittendorf (for) J.H. 3/9/53

Administrator

cc: Docket
Field Team, Region 2
Code 400
Admn. Read. File
M. D. Crittenden, USGS
N. B. Melcher, USBM

FARutledge/hhb
3/9/53

FILE COPY
SURNAME:

Rutledge
Crittenden
Weldon
Lemmon

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

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

Re: Docket No. DMPA 2874 - Manganese
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Irving:

Reference is made to your application for exploration assistance on the subject property. In reviewing this docket, it was noted that part of the requested exploration program is a duplication of work now in progress under DMPA contract No. GS-10P (D)-3, wherein the development program has been changed from the 400-foot level of the Plutus Mine to the 225-foot level.

Because of the above duplication ~~and in consideration of the highly speculative probability of finding ore~~, the subject application will be held in abeyance until the 225-foot level can be reopened and the Plutus vein exposed and sampled, provided that assay results are available within a reasonable period of time.

Please be assured that the subject application will receive prompt consideration as soon as the requested sample information is submitted.

Sincerely yours,

Administrator

Revised per OC's request

cc: Docket
Field Team, Region 2
Code 400
Admn. Read. File
N. B. Melcher, USBM
M. D. Crittenden, USGS

FARutledge/hhb
3/3/53

400

FILE COPY
SURNAME:

Rutledge
Martin
Thayer
Hedges
Bottinger

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

FEB 20 1953

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

Re: Docket No. DMEA 2874 - Manganese
Irving G. Irving & Robert K. Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Irving:

Your application for assistance in exploring manganese occurrences at the Plutus Mine and your letter of February 16, 1953, have been received. After a review by the Iron and Ferro-Alloy Division of the Defense Minerals Exploration Administration, the subject application has been referred to Mr. A. E. Weissenborn, Executive Officer, Region II, South 157 Howard Street, Spokane 4, Washington, for a field examination.

The Regional Office will contact you at an early date in regard to an examination of your property. Any assistance that you can render the members of the field team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

FARutledge/ls
2/20/53

cc: DOCKET
FIELD TEAM, REG. II
CODE 400
ADMN. READ. FILE
OPER. COMMITTEE
M. D. CRITTENDEN, USGS
N. B. MELCHER, USBM

P.H.
2/20/53

400

FILE COPY
SURNAME:

Rutledge
Martin
Selfridge

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

FEB 20 1953

Mr. A. N. Weissenborn
Executive Officer, DMEA Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 2874 - Manganese
Irving G. Irving & Robert H. Nelson
Plutus Mine
Silver Bow County, Montana

Dear Mr. Weissenborn:

On February 3, 1953, your office forwarded to Washington three copies of the subject application and noted that one copy had been retained in order that a field examination might be made. Therefore, we will hold this application in abeyance until your field team report is received.

Copies of memoranda of February 13 and 18, prepared by M. D. Crittenden, Jr., Geological Survey, and Gilbert L. DeNuff, Jr., Bureau of Mines, respectively, are enclosed for your information.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

Enclosures

FARutledge/ls
2/20/53

Approved:

J. H. Hedges
Member, Bureau of Mines

T. P. Thayer
Member, Geological Survey

CC: DOCKET
FIELD TEAM, REG. II
CODE 400
ADMN. READ. FILE
OPER. COMMITTEE
M. D. CRITTENDEN, USGS
N. B. MELCHER, USBM

2/20/53

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

Docket Copy

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration

February 18, 1953

dmea 2874

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

Dear Mr. Selfridge:

Reference is made to the application submitted by Irving G. Irving and Robert H. Nelson for a DMEA contract on the Plutus mine, a manganese property in Silver Bow County, Montana.

The Plutus mine has been examined by Mr. John S. McNabb, U. S. Bureau of Mines; copies of his report and copies of Exhibit "A" for a proposed contract are enclosed herewith. Mr. McNabb reports the Plutus mine as largely inaccessible and that his examination was therefore confined largely to examination of surface pits and croppings along the strike of the vein.

Close examination of the geologic map submitted by Mr. Irving suggests that the Plutus vein should have been intersected by the Plutus adit and also by the 125 level off the Plutus shaft. The absence of a strongly mineralized structure in the area explored by these working places is believed to be the result of 1) splitting of the vein into a series of horse-tailed structures, none of which were strongly mineralized, or 2) offset of the vein by a series of northerly-trending faults. Of the two explanations, the consensus of opinion of those familiar with the property is that the vein has been offset by faulting. Mr. Irving reports there is good evidence to suggest that the vein is but a few feet south of the Plutus adit. There is also good reason to believe the vein was explored for a short distance on the 125 level; however, the inaccessibility of this level makes it impossible to prove this point. The fact that the vein was drifted on at the 200 level where it is known to be strong, and the fact that an 11-foot vein is reported by a reliable Anaconda Copper Mining official to cross the shaft below the 200 level lends credence to the postulation that the vein does not horse-tail but instead is a strong structure in those areas to be explored.

ON-SITE EXAM.

Inasmuch as the Plutus mine is in that part of the Butte district known to contain strong manganese-bearing veins and as manganese veins are known to extend below the level to be explored by the proposed project, it is believed that Mr. Irving's proposal is geologically sound. The Field Team therefore recommends the granting of a DMEA contract to explore the Plutus property and suggests that the enclosed copies of Exhibit "A" be made part of the contract.

By DMEA Field Team, Region II

M. E. Volin, Acting Exec. Officer
(U. S. Bureau of Mines)

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

Enclosures

Distribution:
DMEA (Orig. & 3)
USBM (2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF MINES
917-A W. Silver Street
Butte, Montana
Feb. 6, 1953

Amen 2874

MEMORANDUM

To: The DMEA Field Team, Region II

From: John S. McNabb, Mining Engineer, U. S. Bureau of Mines

Subject: Field Examination and Cost Estimate relative to exploration project proposed by Robert H. Nelson and Irving G. Irving, Plutus Mine, Butte, Montana.

An examination of the Plutus mine was made in the company of Irving G. Irving and Robert H. Nelson on January 31, 1953. The purpose of the examination was to field check items pertinent to the exploration proposal submitted by Nelson and Irving.

At the time of my visit to the property the rehabilitation of the Plutus Shaft had reached a depth of 85 feet. The condition of the station and drift on the 225 foot level is unknown. However, the local ground is heavy and it can be assumed that station and drift rehabilitation will be extensive.

The inaccessible condition of the mine necessarily confined my examination to surface pits and croppings along the strike of the Plutus Vein. The vein is exposedalong the western 2/3 of the Plutus Claim for a distance of about 700 feet. Numerous pits and outcroppings as well as two shallow exploration shafts on the vein leave no doubt as the the strength and persistence of the manganiferous structure. The vein and local geology were accurately described by Irving and Nelson in their exploration proposal and on the map which accompanied the proposal.

The map submitted by Irving and Nelson appears accurate in all respects. Most of the information on the map was taken from an original prepared by the Anaconda Copper Mining Co. The map accompanying the exploration proposal was checked against the Anaconda original and found to be essentially the same. Assay data posted on the map is for the most part taken from Anaconda and RFC findings. There is no reason why the sampling and assaying should not be entirely reliable.

I have prepared a cost estimate covering the work proposed at the Plutus mine. Nelson and Irving are aware of any changes and modifications included in my cost estimate and concur with my presentation. At the applicants' request, equipment to be purchased in the amount of $1450.00 has been deleted. Nelson and Irving will purchase all equipment necessary to the exploration program.

COST ESTIMATE

Rehabilitation

40 feet of station @ $60.00 per foot	*	$2,400.00
30 feet of drift @ $40.00 per foot	*	1,200.00
TOTAL REHABILITATION:	*	$3,600.00

* Maximum Allowable

Sampling and Assaying

Approximately 375 samples @ $2.00 ea. $750.00

Drifting and Raising - Unit cost for breaking and mucking - average 4 feet of advance per shift - 9' x 7' cross-section.

Labor and Supervision for 1 shift

2 miners @ $17.00 ea.	$34.00
1 trammer	15.00
½ Hoist-man @ $15.00	7.50
½ Top-man @ $13.90	6.95
	$63.45/shift
+ 12.5% FICA & other insurance	7.93
	$71.38
½ Supervisor @ $600.00/ month - $300./25	12.00
+ 8.5% Industrial Acc. Insurance	1.02
Total Labor & Supervision:	$84.40/ 4 foot rnd.

Supplies per 4 foot round - 1 shift

Powder - 40#/ round	$8.85
Caps - 16 @ .021 ea.	.33
Fuse - 128 feet @ .0137/ foot	1.75
Bits	2.80
Steel	1.00
Rails, fishplates, bolts, etc.	4.00
Ties	.55
Power (electricity)	7.50
Repairs (compressor, mucker, drills, etc.)	5.00
Pipe (2" airline & 1" waterline)	2.50
Miscellaneous supplies	2.00
Total Supplies:	$36.28/ 4 foot rnd.

Operator's Equipment

Furnished	Cost	Allowance for depreciation
1 50 hp electric mine hoist - 1/3 time	$1500./3	$10.00

Operator's Equipment

Furnished	Cost	Allowance for depreciation
2 mine cars @$100.00 ea.	$200.00	$2.00
1 air hoist 5 hp	500.00	5.00
1 jack-leg drill	585.00	14.00
1 vent fan	150.00	3.00
700' 12" vent tubing @$1.50/ft.	1050.00	20.00
1 Eimco 12b mucker	1550.00	25.00
1 800 cfm compressor - 1/3 time	5500./3	25.00
1 air receiver - 1/3 time	150./3	1.00
200 feet air hose	57.00	5.00
1 mine pump 175 gpm 1/3 time	2500./3	15.00
	Total:	$125.00/ month

$125.00 for 25 shifts = $5.00 per shift.

Timbering - Unit cost of installing timber. All drifting and rasing to be done at the Plutus mine will require timbering. It is assumbed that standing 3 sets, or 15 lineal feet of timber is equivalent in time required to breaking and mucking 1 four foot round.

	For 15 feet of timber - 1shift
Labor and Supervision	$84.40
Operator's Equipment	5.00
Timber	23.00
Power	7.50
	$122.15

$122.15/15 = $8.14 per lineal foot of timber

Recapitulation - Cost of breaking, mucking, and timbering for 1 foot advance.

Labor and Supervision	$84.40
Operating Equipment	5.00
Supplies	36.28
	$125.68/ 4' adv.

$125.68/4 = $31.42 per foot of adv.

	$31.42
+ $8.14 per lineal foot of timber	8.14
	$39.56/ foot of timbered drift or raise

Total Cost of Project

1. Rehabilitate 40' of station @ $60.00/ ft.	$2,400.00
2. Rehabilitate 30' of drift @ $40.00/ft.	1,200.00
3. 375 assays @ $2.00 ea.	750.00
4. Timbered drifts - 470' @ $39.56/ fot.	18,593.20
5. Timbered raises - 200' @ $39.56/ ft.	7,912.00
TOTAL:	$30,855.20

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration

Amea 2874

IRVING AND NELSON
Exploration Project Contract

Plutus Mine

EXHIBIT "A"

Description of the Work

1. Rehabilitate 40 feet of station on the Plutus 225 level.

2. Rehabilitate 30 feet of existing drift west on the 225 level and extend this drift 270 feet to a total of 300 feet from the shaft.

3. Drift easterly 200 feet on the Plutus vein from the 225 station.

4. Drive a total of 200 feet of raise from the above drifts, the raises to be started from points mutually agreeable to the Operator and the Government.

Estimated Costs of the Work

*Indicates allowable maximum

Unit costs

470 feet of timbered drift at $40/ft., to include all costs except assaying	$18,800.
200 feet of timbered raise at $40/ft., to include all costs except assaying	8,000.
	$26,800.

The Government will contribute to the cost of drifting and raising on the basis of these agreed estimated unit costs in lieu of actual costs. The rest of the described work and that item of the cost of drifting and raising excluded therefrom will be contributed to by the Government on the basis of those actual costs specified in Article 6 (a) of the contract form which are scheduled below.

(5) Rehabilitation and repairs

Rehabilitate 40 feet of station on 225 level, - to include all costs	$2,400.00
Rehabilitate 30 feet of drift on 225 level, - to include all costs	1,200.00
Total	$3,600.00*

(7) Miscellaneous

Assays	750.00*
Total cost of project	$31,150.00
Government participation (75%)	23,362.50

Docket

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 18 1953

February 18, 1953

Memorandum

To: Mr. George Selfridge, Chief, Iron and Ferroalloy Branch, DMEA

From: Gilbert L. DeHuff, Jr., Commodity Specialist

Subject: DMEA No. 2874, Manganese, Plutus Mine (Mont.) - Nelson & Irving.

Application is made for aid to rehabilitate 40 feet of shaft station and 30 feet of drift, to drift approximately 470 feet, and to raise 200 feet at applicants' leased mining claim, the Plutus, located two miles west of Butte, Montana. Total cost of the project is estimated by the applicants to be $33,069.

Applicants are now rehabilitating the Plutus shaft under GSA Contract No. GS-10P(D)-3 for the purpose of entering the adjoining Norwich claim to produce manganese carbonate ore. They now wish to explore from the same shaft a parallel vein on the Plutus claim containing manganese carbonate ore with possibly some oxide ore as well. They estimate that, using "waste factors" varying from 50% to 75%, "a total tonnage of ore to be revealed of 27,350 tons is thought probable", and they assign it an average grade of 21% Mn. From the evidence presented tonnage and grade may be spoken of as "possible," but hardly as "probable."

According to Bureau of Mines Report of Investigations No. 4784, approximately 8,000 tons of manganese carbonate ore averaging over 23% Mn and 1,800 tons of oxide ore were reported to have been produced from the Norwich mine in 1943-45. I. G. Irving, one of the applicants, has reported to the Bureau of Mines, shipments from the Norwich mine for the year 1952 to have been 352 long dry tons of carbonate ore averaging 23.2% Mn, 2.9% Fe, 0.015% P. Applicants' state that a few truckloads of manganese oxide ore were shipped from the Plutus during World War I, and from 111 to 150 tons from a 50-foot shaft during World War II.

There are some analyses for samples of oxide ore at or near surface, but only one for carbonate ore underground. Applicants contend that poor results of previous underground work in the section they propose to develop were due to most of that work being "off structure." From the plan which they submit, this may or may not have

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been the case, the plan showing step faulting in this locality.

Unless matters pertaining to property ownership suggest otherwise, it is believed that, since applicants are apparently experienced operators at present engaged in a government-sponsored program at this location and their claim for prospective ore does have possibilities, this application should be referred to a field team for consideration.

Bur. of Mines file copy also rec'd in Code 400. fee & was initialed by Mr. DeHuff. File surnamed copy was returned to Bur. of Mines. L.S. 2-18-53.

Docket

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

February 13, 1953

Memorandum

To: W. S. Martin

From: M. D. Crittenden, Jr.

Subject: DMEA-2874, Manganese
Irving G. Irving
Robert H. Nelson
Plutus Mine
Butte, Montana

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 18 1953

The applicants are lessees (and part owners) of the Plutus claim, in the northwestern part of the Butte district, Montana, and are now reopening it under an advance against a GSA purchase contract to mine and hoist ore from the adjoining Norwich mine.

Under the present application, they propose to spend a total of $33,069.00 to explore a vein exposed on the surface (elevation 5710) and on the 225 level (elevation 5500) of the Plutus mine itself. The surface showings, which consist of a few shallow pits and shafts at intervals of as much as 200 feet indicate that a vein striking N 70° E and dipping 70° to 80° south crops out about 100 feet north of the Plutus shaft. The best exposure is in the "Tonner shaft" from which shipments of about 100 tons of oxide ore averaging 26 percent Mn are reported. A smaller shaft 250 feet west reveals 4 feet of material averaging 15 pecent Mn. The showings on the 225 level are not accessible, but were sampled by the Anaconda Copper Mining Company, and are probably reliable as far as the one assay goes.

There are two intermediate levels between the surface and the 225 level, an adit at elevation 5690, and the 125 level at elevation 5600. Neither of these workings show a strong vein. The greatest thickness reported was only 2 feet wide. The applicants believe that both these workings missed the principal veins because of a complicated series of fault offsets that cause the main vein structure to lie just beyond or to the side of the drifts. Some of these faults were observed on the surface or in the workings, but many of them are inferred. These possibilities, while providing interesting "plays" for small scale exploration, do not appear to be well enough documented to serve as a basis for the extensive exploration proposed.

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Ore Reserves

The applicants have estimated the "prospective" ore that might be derived from the exploration by assuming that about 50 percent of the vein to be opened (averaging 600 feet long, 300 feet deep) is mineralized over a width of 4 feet and with an average grade of about 20 percent Mn. The resulting figure (27,000 long tons) gives some measure of the maximum amount of material that might be contained, but in view of the scant exposure on which it was based, is regarded as highly speculative. The 50 percent waste factor is a guess, and the actual value may be anything from 50 to 90 percent. Experience in adjoining properties suggests that it isn't likely to be less than 50.

Conclusions and Recommendations

In view of the uncertainty of the geologic factors on which the proposed work is based, I do not believe it is justifiable in the present form. Inasmuch as the 225 level is to be reopened for hauling ore from the Norwich, the applicants ought to expose the vein for sampling as a preliminary to exploration. If a face of good ore is exposed, some work to test its extent might then be justified.

M. D. Crittenden, Jr.

COPY

From "The Mining News", January 1953, Vol. 21, No. 1.

Doclet

NORWICH, PLUTUS
MANGANESE MINES
EXPAND AT BUTTE

Daily production is expected to reach an eventual combined total of about 150 tons of ore at Norwich and Plutus shafts in western part of Butte, Mont., where 30,000 tons of good manganese ore are reported already developed and production is expected to be continuous by the operators, Irving G. Irving and Robert H. Nelson of Butte. Messrs. Irving and Nelson, who hold the property under lease and option, have been financing the project privately and after eight months of preparation, including shaft sinking and crosscutting, encountered a good grade of rhodochrosite manganese ore and started regular shipments to concentration plant of Domestic Manganese & Development Co. at Butte under the Government purchase program. The operators also expect to reopen the Plutus shaft on an adjoining claim; to do this work, about six months will be required and Government financial assistance is expected.

DMEA
2874

Irving G. Irving

NELSON AND IRVING

MINING CONSULTANTS

GEOLOGICAL INVESTIGATIONS
Supervision of
DEVELOPMENT - EXPLORATION

HIRBOUR BLDG. BUTTE, MONTANA

TELEPHONE 2-3440

MINE VALUATION
Counsel in
MINE MANAGEMENT

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 18 1953

February 16,1953

dmea 2874

Mr. C. O. Mittendorf,
Administrator,
Defense Minerals Exploration Administration,
Washington 25, D. C.

Subject: DMEA-2874---Plutus Mine Development Project, Manganese, Silver Bow County, Montana.

Dear Mr. Mittendorf:

Some months ago I wrote you concerning my intention to put in an application for the development of the Plutus Vein, on the Plutus Claim--adjacent to our Norwich project, now well under way--a distinct project on this parallel vein and not to be confused with the present development of the Norwich Vein system through the Plutus shaft.

I spent considerable time getting up this application, and accompanied it with a set of maps, and I think the project one with a great deal of merit and an excellent chance for developing a great deal of additional manganese ore, both pink and black.

I just got notice that the above docket number has been assigned to the application and this, ofcourse, means that it has already been processed by the Spokane office and has arrived in Washington.

We will be down to the 225 level of the Plutus shaft in probably less than two months time, and it is from here that the project takes off.

Any attention that you may give the proposed program, which might result in expediting its approval, will be greatly appreciated.

Sincerely yours,

Joe

I. G. Irving.

February 10, 1953

Mr. Irving G. Irving
84 Hirbour Building
Butte, Montana

Subject: DMEA-2874
Re: Exploration Assistance
Plutus Mine

My dear Mr. Irving:

The receipt of your application dated January 15, 1953 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-2874 and referred to the Iron and Ferro-Alloys Division.

Kindly refer to DMEA-2874 in any future correspondence relating to your application.

Sincerely yours,

R. E. ADAMS

Robert E. Adams
Chief, Operations Control
and Statistics Division

25451

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

February 10, 1953

Memorandum

To: Executive Officer, DMEA Field Team, Region II

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region II.

DMEA - 2874 Irving, Irving G. and Nelson, Robert H.

R. E. ADAMS

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

33980

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Feb. 5, 1953

AIR MAIL

Mr. Orrin C. Bradeen
Regional Director, General Services Adm.
Federal Office Bldg., 909 First Avenue
Seattle 4, Washington

Subject: Irving G. Irving and Robert H. Nelson, Co-Partners
84 Hirbour Building, Butte, Montana
DMPA Contract No. GS-10P(D)-3

Dear Mr. Bradeen:

Reference is made to the above contract which was negotiated by your office under the authority and direction contained in the Administrator's letters of August 25 and October 10, 1952.

There is attached a copy of a letter dated January 31, 1953, from Irving G. Irving to Mr. Tom Lyon, Director, Domestic Expansion Division, this Agency. The letter refers to three maps which accompanied it, but these maps will be retained for our files and duplicates should be obtained by you from Irving G. Irving. There also is attached a copy of a memorandum addressed to this office by Mr. Lyon recommending that the change requested by Mr. Irving be granted. This involves development work on the Plutus 225 level instead of the Plutus 400 level, for the reasons stated.

In his letter of August 25, condidion No. 7, the Administrator issued to alternative authority with respect to rehabilitation and develppment, by including this language:

> "and for such other purposes in connection with the operation of said mine as the Regional Director shall determine."

The letter of October 10 which amended the August 25 letter did not countermand that authority.

Since the Director of Domestic Expansion Division has recommended that the change be granted, as outlined in Mr. Irving's letter, this office recommends to you that numbered paragraph 4 of the contract be amended to permit the operation now contemplated by the contractors.

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Inasmuch as the contract, under numbered paragraph 1, now provides that the contractor will produce and sell to the Government not less than 30,000 long tons of manganese carbonate ore but does not contain as outside limitation on tonnage to be accepted by the Government, it is suggested that you may wish to amend that provision to include an outside limitation. The Administrator's letter of October 10, 1952, provided that the outside limitation be 60,000 long tons of manganese carbonate ore, and unless you have any serious objection to that figure we suggest that it be used.

Please forward to this office several copies of such amendment, or amendments, as may be executed.

Very truly yours,

Sgn:

John G. Ford, Director
Contract Negotiations Division

C
O
P
Y

FEb. 3, 1953

Director, Contract Negotiations Division

Director, Domestic Expansion Division

Plutus-Norwich Mine GSA Contract GS-10P(D)-3

Attached you will find a letter and a set of maps from I. G. Irving, Butte, Montana, concerning his contract with the Government on the Plutus-Norwich Mine. The letter is self-explanatory. You will note he desires to do the development work on the 225-foot level instead of the Plutus 400-foot level. The reasons which he gives for desiring to change the contract are sound, and I recommend that the change be granted.

Signed

Tom Lyon

#265354

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Irving G. Irving in letter dated January 31, 1953

To: Tom Lyon

Subject: Request for change of program.

Request to change the work specified for the 400-foot level of the Plutus Mine to the 225-foot level.

To expedite production and pay back on production loan within the two-year contract period.

dmea 2874

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~

1201 N. Division St.
Spokane 2, Washington
February 3, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 6 1953

MEMORANDUM

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

From: DMEA Field Team, Region II

Subject: Application for exploration assistance (manganese)
Irving G. Irving and Robert H. Nelson
Plutus Mines, Silver Bow County, Montana

Enclosed are three copies of the subject application for DMEA assistance. One copy is being retained here for further Field Team reference.

Some information on the property is available in the files of both the Bureau of Mines and the Geological Survey as a result of Bureau of Mines Project No. 378, completed in 1950, (USBM R. I. 4784) and Geological Survey strategic minerals investigations conducted in 1943 by S. K. Neuschel and M. D. Crittendon (USGS Report on Rhodochrosite Reserves in West Butte and Philipsburg Districts, Silver Bow and Granite Counties, 1943). These reports are available in the Washington, D.C. offices of these respective agencies.

A brief examination will be made in the near future by John S. McNabb, USBM, to check data contained in the application which were not available at the time of the above investigations because mine workings were inaccessible, and to check the applicant's estimate of costs.

A report on McNabb's examination and a suggested form of contract will be forwarded in about a week.

The Field Team is favorable to a DMEA contract based on the application.

By Field Team, Region II

A. E. Weissenborn

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey
157 South Howard Street

Copy retained 400

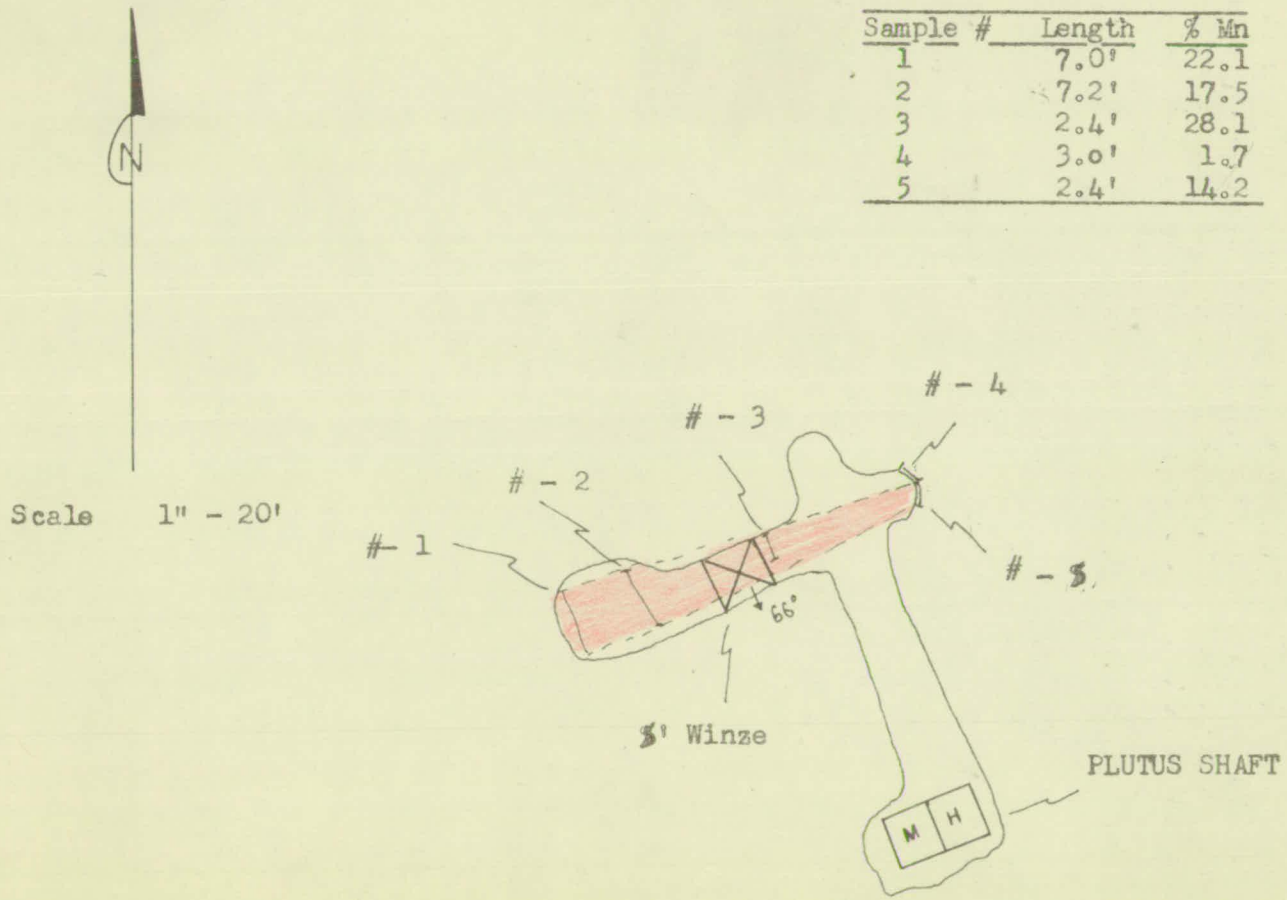
Acting for Thomas E Howard

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

Enclosure

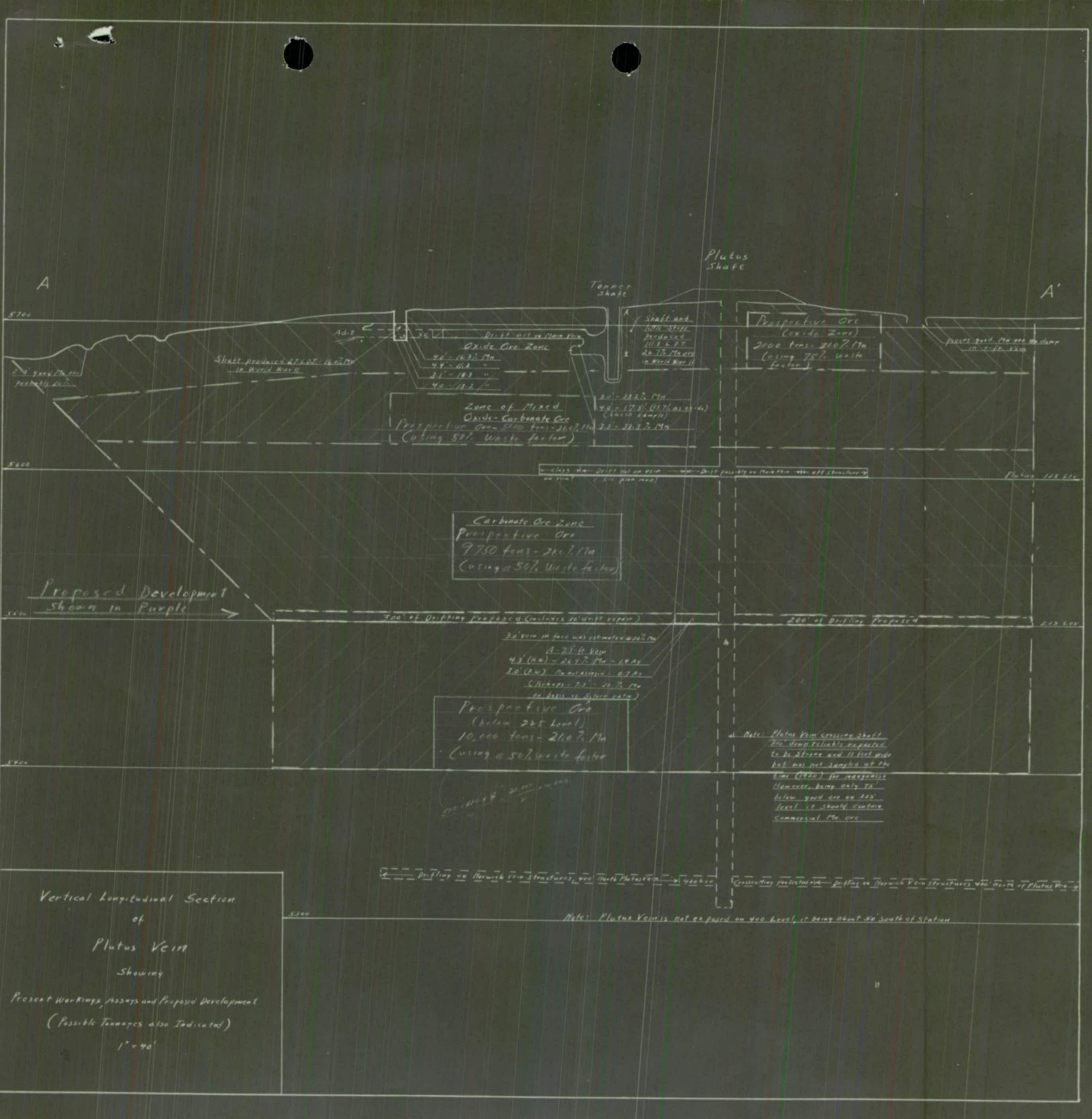
Assays

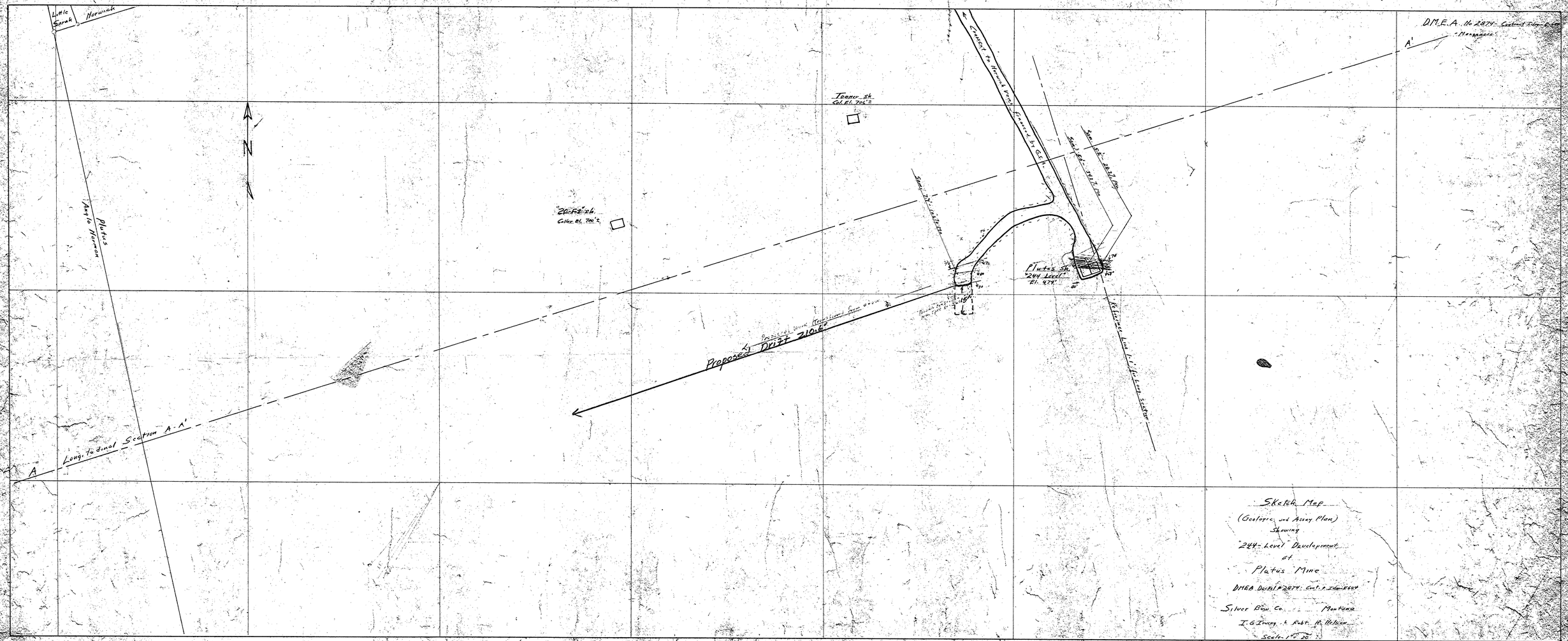
Sample #	Length	% Mn
1	7.0'	22.1
2	7.2'	17.5
3	2.4'	28.1
4	3.0'	1.7
5	2.4'	14.2



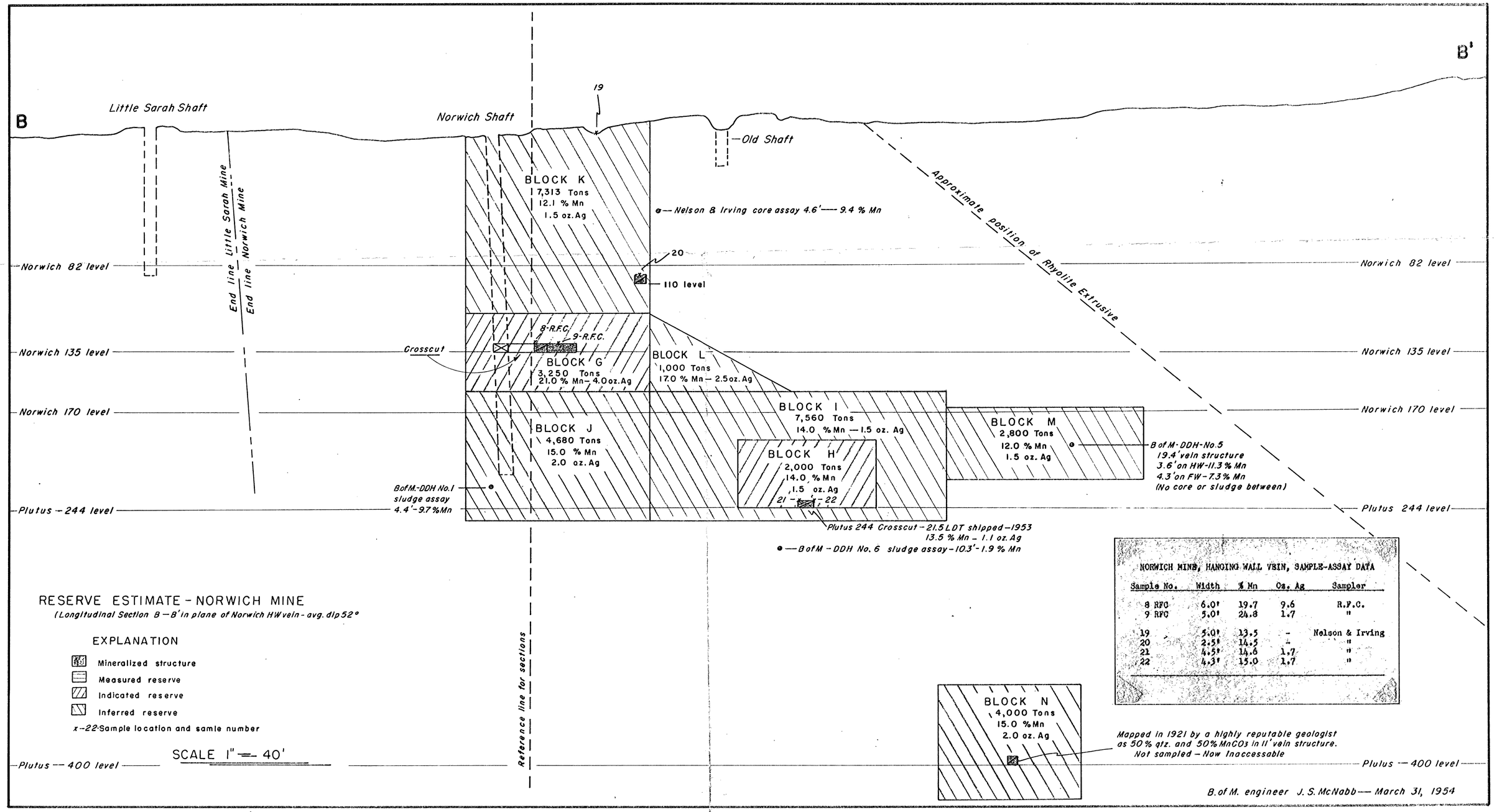
200' LEVEL OF THE PLUTUS MINE - SILVER BOW COUNTY, MONTANA. Docket # 2874 (Mn)

J.S.McNabb - July 18, 1953.


A
A'
Plutus Shaft
Tonner Shaft
Adit
5700
5600
5500
5400
5300
Shaft produced 27 L.D.T. 16.0% Mn in World War II
Drift not on Main Vein
Oxide Ore Zone
48' - 16.3% Mn
44' - 11.8 "
31' - 18.3 "
40 - 13.2 "
Shaft and little stope produced 113 L.D.T. 26.7% Mn ore in World War II
30' - 22.8% Mn
40' - 17.5' (19% as oxide) (check sample)
32' - 22.3% Mn
Zone of Mixed Oxide-Carbonate Ore
Prospective Ore - 5000 tons - 21.0% Mn (using 50% Waste factor)
Prospective Ore (Oxide Zone) 2000 tons - 21.0% Mn (using 75% waste factor)
Carbonate Ore Zone
Prospective Ore
9750 tons - 21.0% Mn
(using a 50% Waste factor)
Proposed Development Shown in Purple
300' of Drifting Proposed (includes 50' drift repair)
200' of Drifting Proposed
3.0' vein in face was estimated @ 20% Mn
A 23-ft Vein
4.3' (HW) - 26.7% Mn - 1.8 oz
3.0' (FW) - no assays - 0.7 oz
(Widths - 7.5' - 26.7% Mn on basis of Sliver cut)
Prospective Ore (below 225 Level) 10,000 tons - 21.0% Mn (using a 50% waste factor)
Note: Plutus Vein crossing shaft 200' down reliably reported to be strong and 11 feet wide but was not sampled at the time (1930) for manganese. However, being only 75' below good ore on 225 level it should contain commercial Mn ore
Drifting on Norwich Vein Structures 400' North Plutus Vein
Crosscutting projected with Drifting on Norwich Vein Structures 400' North of Plutus Vein
Note: Plutus Vein is not exposed on 400 Level, it being about 50' South of Station
Vertical Longitudinal Section of Plutus Vein
Showing
Present Workings, Assays and Proposed Development
(Possible Tonnages also Indicated)
1" = 40'

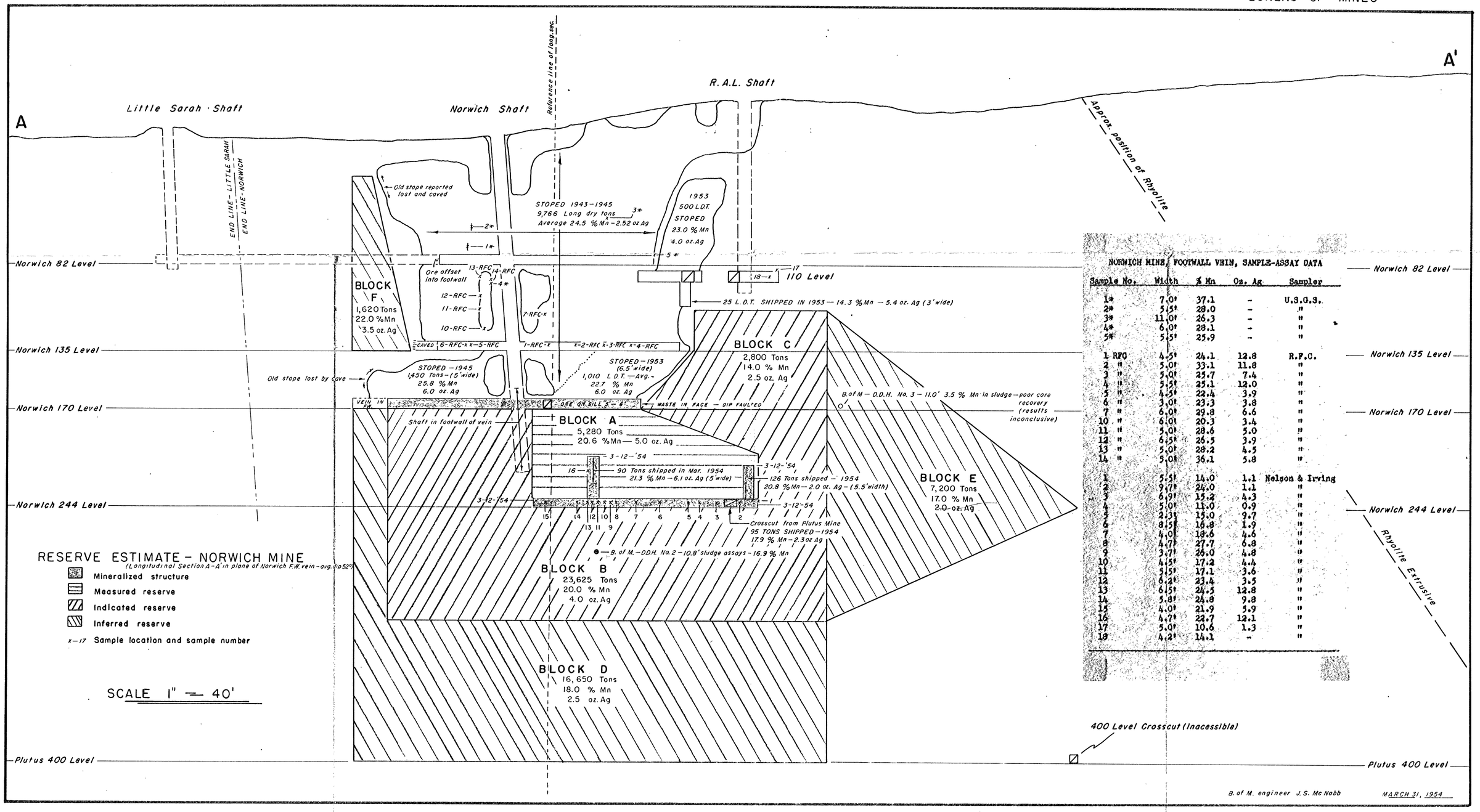


Sketch Map
(Geologic and Assay Plan)
Showing
"244-Level" Development
at
Plutus Mine
DMEA Docket #2874 - Cont. Silver Bow
Silver Bow Co. Montana
I. G. Irving & Robt. M. Weber
Scale: 1" = 20'



NORWICH MINE, HANGING WALL VEIN, SAMPLE-ASSAY DATA

Sample No.	Width	% Mn	Oz. Ag	Sampler
8 RFC	6.0'	19.7	9.6	R.F.C.
9 RFC	5.0'	24.8	1.7	"
19	5.0'	13.5	-	Nelson & Irving
20	2.5'	14.5	-	"
21	4.5'	14.6	1.7	"
22	4.3'	15.0	1.7	"



NORWICH MINE, FOOTWALL VEIN, SAMPLE-ASSAY DATA

Sample No.	Width	% Mn	Oz. Ag	Sampler
1*	7.0'	37.1	-	U.S.G.S.
2*	5.5'	28.0	-	"
3*	11.0'	26.3	-	"
4*	6.0'	28.1	-	"
5*	5.5'	25.9	-	"
1 RFC	4.5'	24.1	12.8	R.F.C.
2 "	5.0'	33.1	11.8	"
3 "	5.0'	25.7	7.4	"
4 "	5.5'	25.1	12.0	"
5 "	4.5'	22.4	3.9	"
6 "	3.0'	23.3	3.8	"
7 "	6.0'	29.8	6.6	"
10 "	6.0'	20.3	3.4	"
11 "	5.0'	28.6	5.0	"
12 "	6.5'	26.5	3.9	"
13 "	5.0'	28.2	4.5	"
14 "	5.0'	36.1	5.8	"
1	5.5'	14.0	1.1	Nelson & Irving
2	9.7'	24.0	1.1	"
3	6.9'	15.2	4.3	"
4	5.0'	11.0	0.9	"
5	2.3'	15.0	9.7	"
6	8.5'	16.8	1.9	"
7	4.0'	18.6	4.6	"
8	4.7'	27.7	6.8	"
9	3.7'	26.0	4.8	"
10	4.5'	17.2	4.4	"
11	5.5'	17.1	3.6	"
12	6.2'	23.4	3.5	"
13	6.5'	24.5	12.8	"
14	5.8'	24.8	9.8	"
15	4.0'	21.9	3.9	"
16	4.7'	22.7	12.1	"
17	5.0'	10.6	1.3	"
18	4.2'	14.1	-	"

Norwich and Plutus Mines
Butte, Montana
1" = 40'
showing
Geology of Plutus 225 Level
and
Vein and Fault Projections to
Elevation (4973'±) of Plutus 225 Level

Proposed Development (on 225 from Plutus Shaft) on Plutus Vein and toward Norwich Vein
Reserves —

225 Level

2724
NORWICH

995
MAPLETON

8095
LITTLE SARAH

2671
ANGLO NORMAN

3018
PLUTUS

Pl. New Jersey - Mapleton

Norwich Shaft
No. 1 Shaft
El Collar 6820'
shaft

No. 2 Shaft
El Collar 7074'
El Sill of station 6012'

RHYOLITE

NORWICH ORE RESERVE

FLAT FAULT

Little Sarah Shaft
El South Dump 6930
El Collar 6867.3

Big Vein revealed in 400 XCN

FLAT FAULT REVEALED IN 400 XCN (Both branches)

To East

"NORWICH HANGING WALL" VEIN

FLAT FAULT
Surface, 112 Level, 135 Level

Detailed plan for mining Hanging wall ore reserve will depend on conditions actually encountered. Many small North-South faults shown here probably do not actually exist on 225 Level, but are shown in projected position from data at hand

Vein indicated by Drill Hole 5

PROPOSED CROSSCUT
To Get at Norwich Vein
400 Long

Turner Shaft

PLUTUS VEIN

PLUTUS Shaft
El Collar 7174.00'

Collar DD HOLE #5
U.S. Bur of M.

See Long Crosscut Submitted with DMEA-2874 for One indicated)

Proposed Project shown in Orange

PROPOSED 225' LEVEL
DEVELOP TO
DEVELOP PLUTUS VEIN,
MINE NORWICH ORE RESERVES
ON BOTH SEGMENTS OF NORWICH
VEIN, AND THEREAFTER
EXPLORE EXTENSIONS OF
NORWICH VEIN

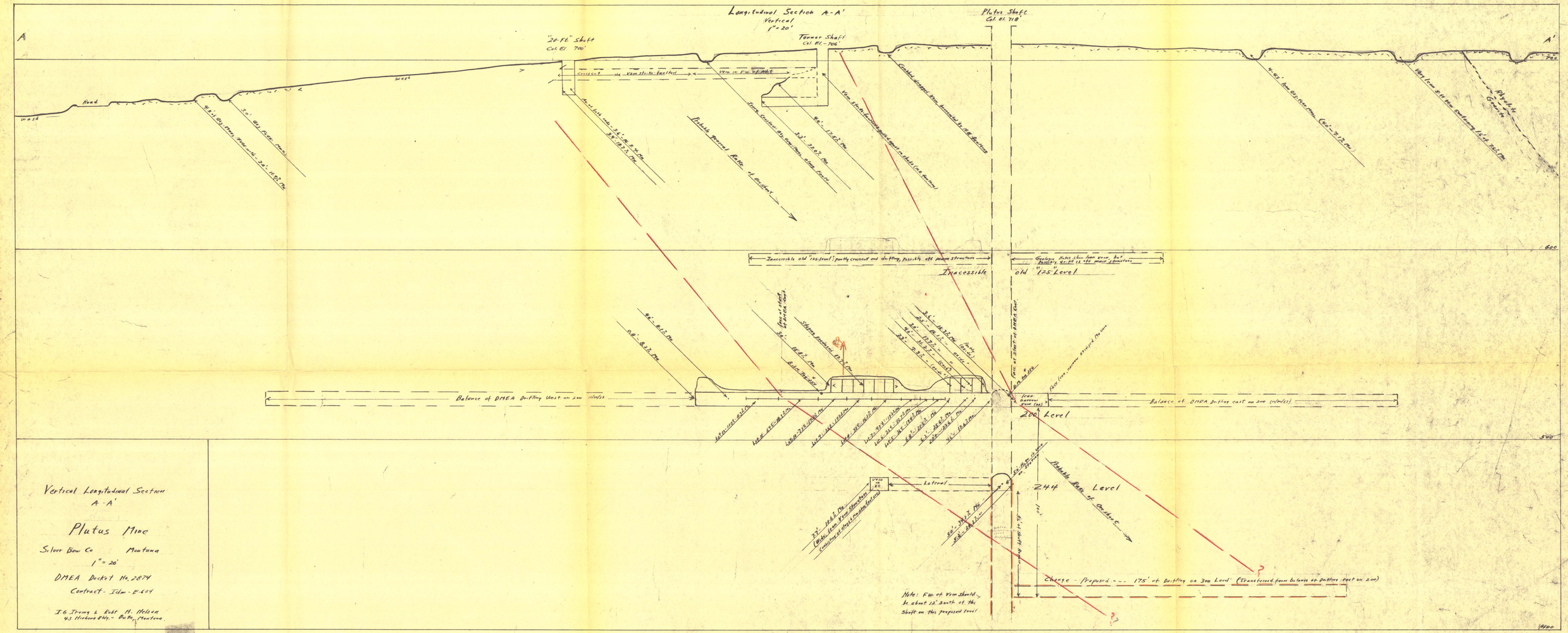
Geologic structures projected from
All available data together with
Correlations from Bureau of
Mines Drilling

Robert N. Nelson

SCALE 1IN. = 40FT.
MAY 1953

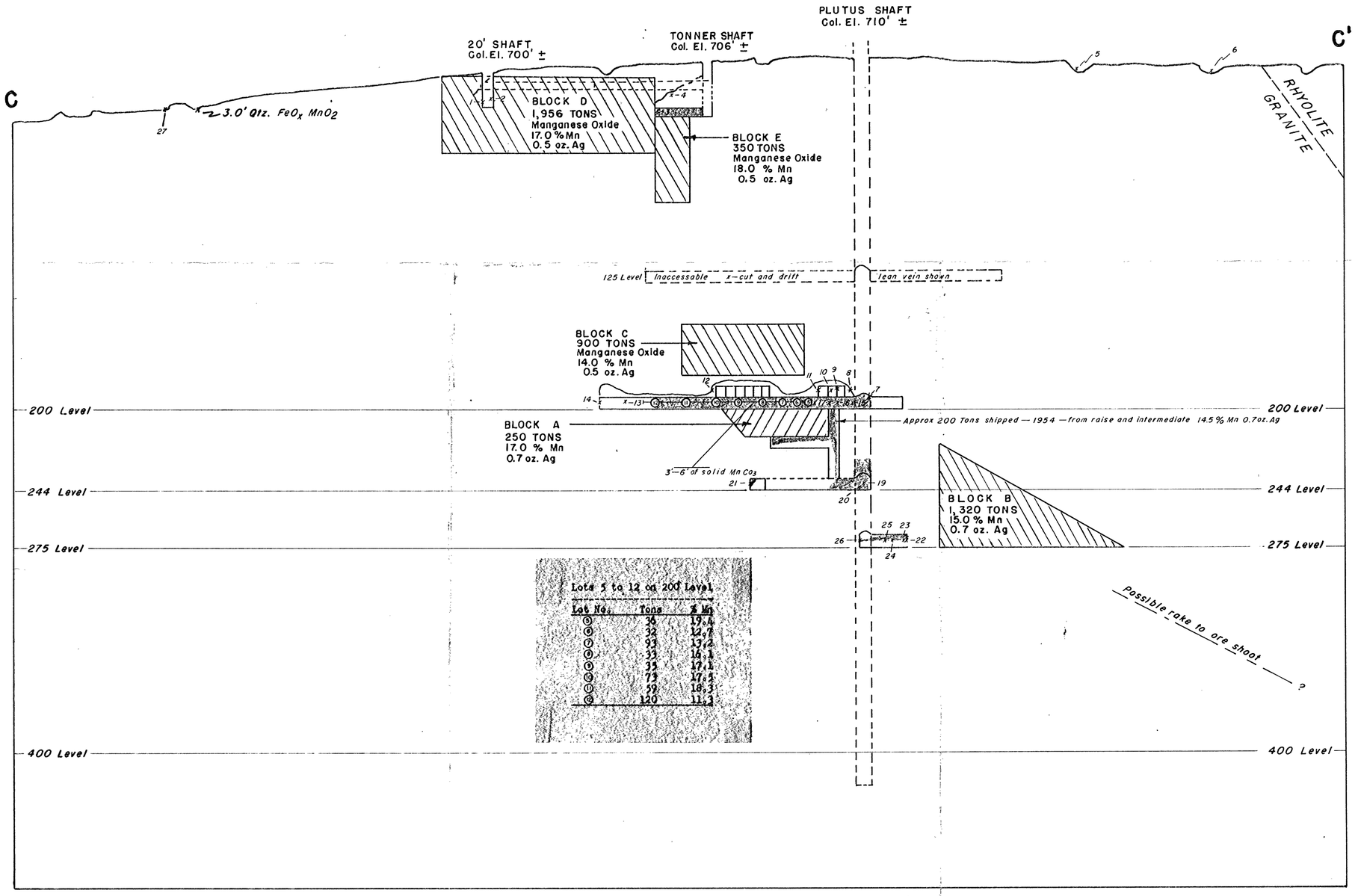
Note: Base used in Survey = S.W. Cor. Plutus to P.I. New Jersey - Mapleton Lodes. Assumed Course N15°45'W, 3900 feet. Assumed Cordinates of S.W. Cor. Plutus Lode 5000'N - 5000'E.

Docket No. DMEA 2874 - Irving & Nelson
Plutus - Norwich mines


Longitudinal Section A-A'
Vertical
1" = 20'
"20-Ft" Shaft
Col. El. 700'
Tunnel Shaft
Col. El. 706'
Plutus Shaft
Col. El. 718'
A
A'
Road
wash
Crosscut
Vein strike eastward
Vein in F.W. of fault
Crushed drainage flow diverted by the fault
Probable general Rate of Gradient
Inaccessible old "125-level"; partly crosscut and drifting, possibly old mining structures
Inaccessible
Existing stope shown dashed; but Probably at least is old mining structure.
old "125" Level
Balance of DMEA Drifting West on 200 (levels)
Balance of DMEA Drifting East on 200 (levels)
200 Level
Lateral
244 Level
Probable Rate of Gradient
Change - Proposed --- 175' of Drifting on 300 Level (Transferred from balance of Drifting East on 200)
Note: F.W. of Vein should be about 12' South of the Shaft on this proposed level
Vertical Longitudinal Section
A-A'
Plutus Mine
Silver Bow Co. Montana
1" = 20'
DMEA Docket No. 2874
Contract - Idm - E-604
I.G. Irving & Robt. H. Nelson
U.S. Hardrock Geol. - Butte, Montana

PLUTUS MINE, PLUTUS VEIN, SAMPLE-ASSAY DATA

Sample No.	Width	% Mn	Oz. Ag	Sampler
1	3.9'	18.7	-	Nelson & Irving
2	3.6'	16.3	-	"
3	3.3'	33.0	-	"
4	4.0'	17.5	-	"
5	4.0'	7.1	-	"
6	1.6'	7.6	-	"
7	3.6'	15.3	-	"
8	2.5'	16.1	-	"
9	3.0'	17.7	-	"
10	4.0'	31.2	-	"
11	3.3'	7.3	-	"
12	3.0'	15.8	-	"
13	4.0'	8.1	-	"
14	0.8'	8.2	-	"
15	4.6'	17.6	-	"
16	2.0'	13.6	-	"
17	6.2'	25.6	-	"
18	6.8'	21.6	-	"
19	5.2'	28.2	-	"
20	5.0'	34.2	-	"
21	7.7'	10.6	-	"
22	1.5'	23.8	-	"
23	3.0'	5.3	-	"
24	1.0'	23.3	1.1	"
25	0.4'	29.9	-	"
26	0.5'	27.1	-	"
27	3.0'	11.9	-	"



Lots 1 to 12 on 200 Level		
Lot No.	Tons	% Mn
1	36	19.4
2	32	12.7
3	93	13.2
4	33	14.1
5	35	17.1
6	73	17.5
7	59	18.3
8	120	11.3

RESERVE ESTIMATE – PLUTUS MINE

Longitudinal Section C—C' on plane of vein — avg. dip 67°

EXPLANATION

- Mineralized structure
- Measured reserve
- Indicated reserve
- Inferred reserve
- x-19 Sample location and number

SCALE 1" = 40'

Section from company map.

B of M engineer J.S. Mc Nabb — March 31, 1954

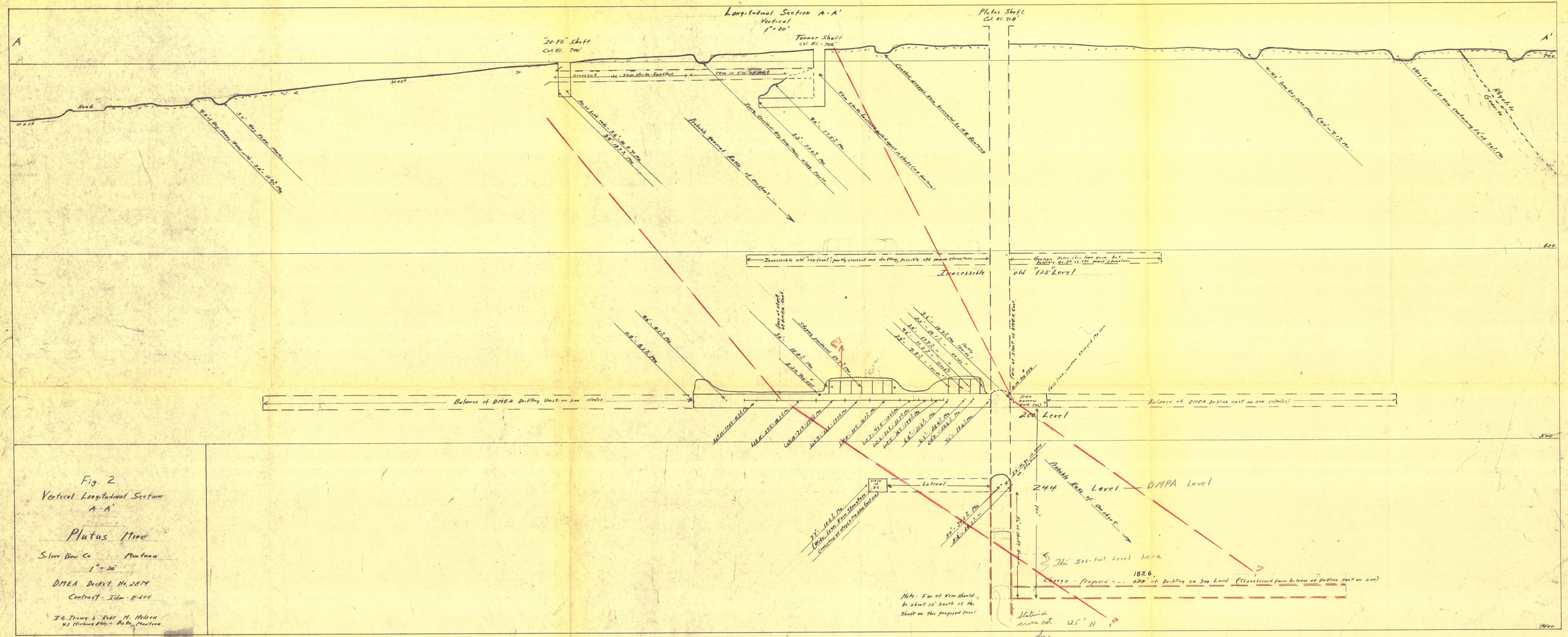


Fig. 2
Vertical Longitudinal Section
A-A'

Plutus Mine

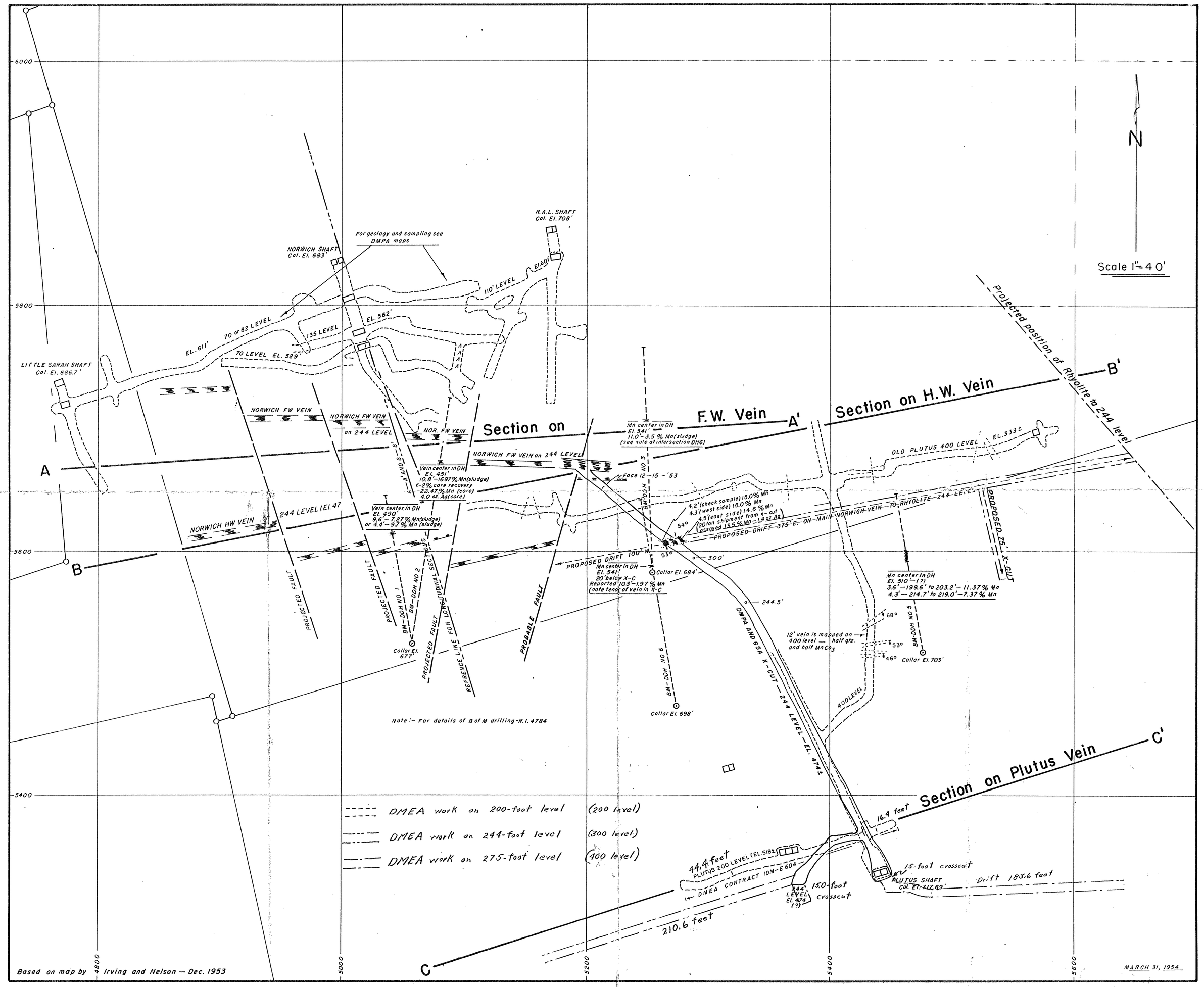
Silver Bow Co. Montana

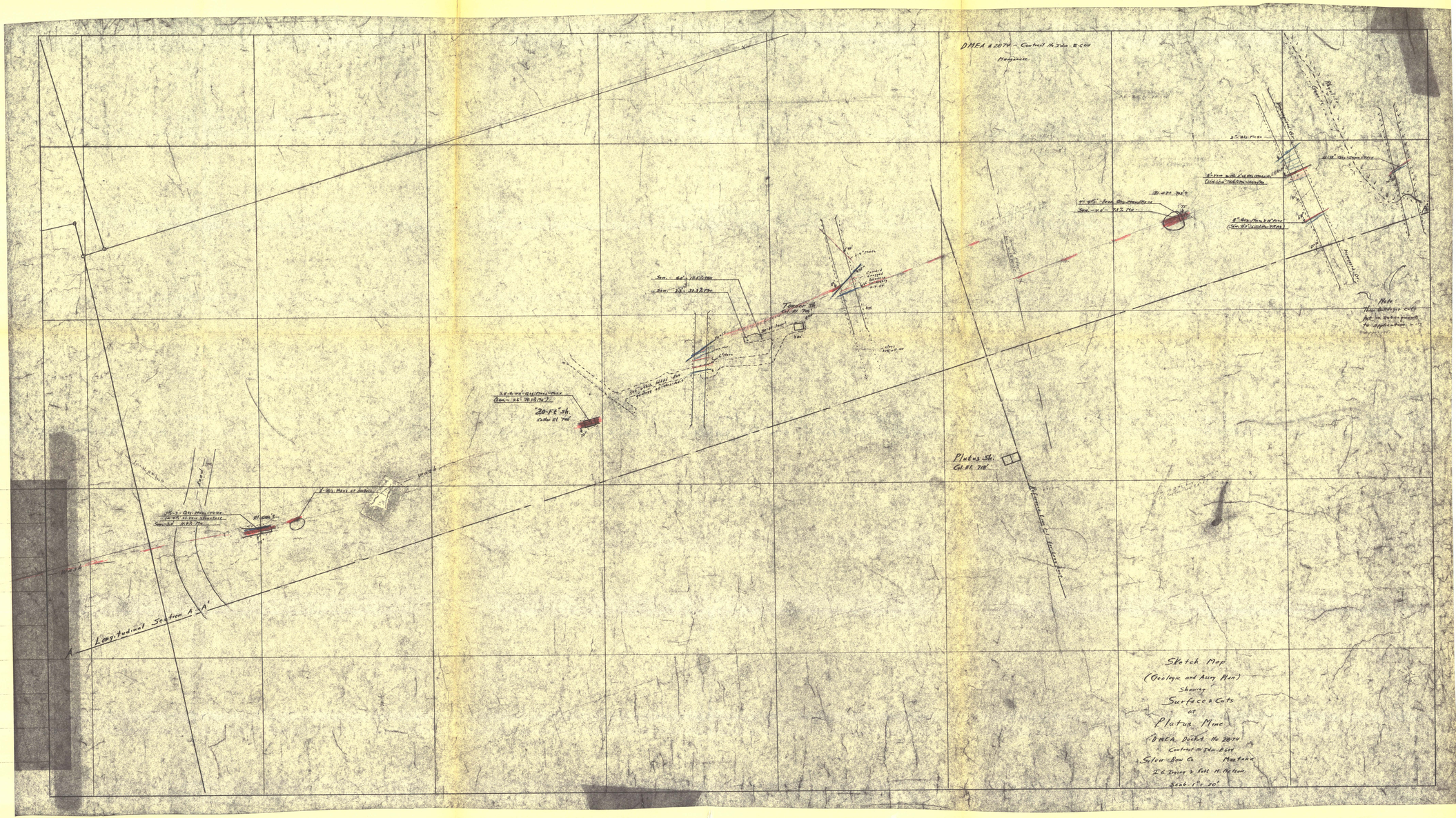
1" = 20'

DMEA Docket No. 2874

Contract - Idm - E-604

J. G. Trump & Rust M. Nelson
43 Hickory Bldg. - Butte, Montana.


N
Scale 1" = 40'
6000
5800
5600
5400
4800
5000
5200
5400
5600
R.A.L. SHAFT
Col. El. 708'
For geology and sampling see DMPA maps
NORWICH SHAFT
Col. El. 683'
110' LEVEL
El. 601'
EL. 562'
135 LEVEL
70 or 82 LEVEL
EL. 611'
70 LEVEL EL. 529'
LITTLE SARAH SHAFT
Col. El. 686.7'
NORWICH FW VEIN
NORWICH FW VEIN on 244 LEVEL
NOR. FW VEIN
Section on F.W. Vein
A'
Section on H.W. Vein
B'
Projected position of Rhyolite to 244 level
A
B
NORWICH FW VEIN on 244 LEVEL
Mn center in DH
El. 541'
11.0'-3.5 % Mn (sludge)
(see note at intersection DH6)
OLD PLUTUS 400 LEVEL
EL. 333±
Vein center in DH
El. 451'
10.8'-16.97% Mn (sludge)
(-2% core recovery
22.47% Mn (core)
4.0 oz. Ag (core)
Face 12-15-'53
NORWICH HW VEIN
244 LEVEL (El. 47
Vein center in DH
El. 490'
9.6'-7.27% Mn (sludge)
or 4.4'-9.7 % Mn (sludge)
4.2' (check sample) 15.0% Mn
4.3' (west side) 15.0% Mn
4.5' (east side) 14.6% Mn
20 ton shipment from x-cut
assayed 13.5% Mn - 1.4 oz Ag
PROPOSED DRIFT 375' E. ON MAIN NORWICH VEIN TO RHYOLITE 244 LEVEL
PROPOSED 75' X-CUT
PROPOSED DRIFT 100' W.
Mn center in DH
El. 541'
20' below X-C
Reported 10.3'-1.97% Mn
(note tenor of vein in X-C
Collar El. 684'
300'
244.5'
Mn center in DH
El. 510'-(?)
3.6'-199.6' to 203.2'-11.37% Mn
4.3'-214.7' to 219.0'-7.37% Mn
PROJECTED FAULT
PROJECTED FAULT
BM-DDH NO 1
BM-DDH NO 2
BM-DDH NO 3
BM-DDH NO 5
BM-DDH NO 6
Collar El. 677'
PROJECTED FAULT
REFERENCE LINE FOR LONGITUDINAL SECTION
PROBABLE FAULT
Collar El. 698'
12' vein is mapped on 400 level — half qtz. and half MnCO3
68°
53°
46°
Collar El. 703'
400 LEVEL
DMPA AND GSA X-CUT — 244 LEVEL — EL. 474±
Section on Plutus Vein
C'
16.4 feet
Note:- For details of B of M drilling - R.I. 4784
DMEA work on 200-foot level (200 level)
DMEA work on 244-foot level (300 level)
DMEA work on 275-foot level (400 level)
44.4 feet
PLUTUS 200 LEVEL (EL. 518±)
DMEA CONTRACT IDM-E 604
15-foot crosscut
PLUTUS SHAFT
Col. El. 212.69'
Drift 183.6 feet
244' LEVEL El. 474 (?)
15.0-foot crosscut
210.6 feet
C
Based on map by Irving and Nelson — Dec. 1953
MARCH 31, 1954

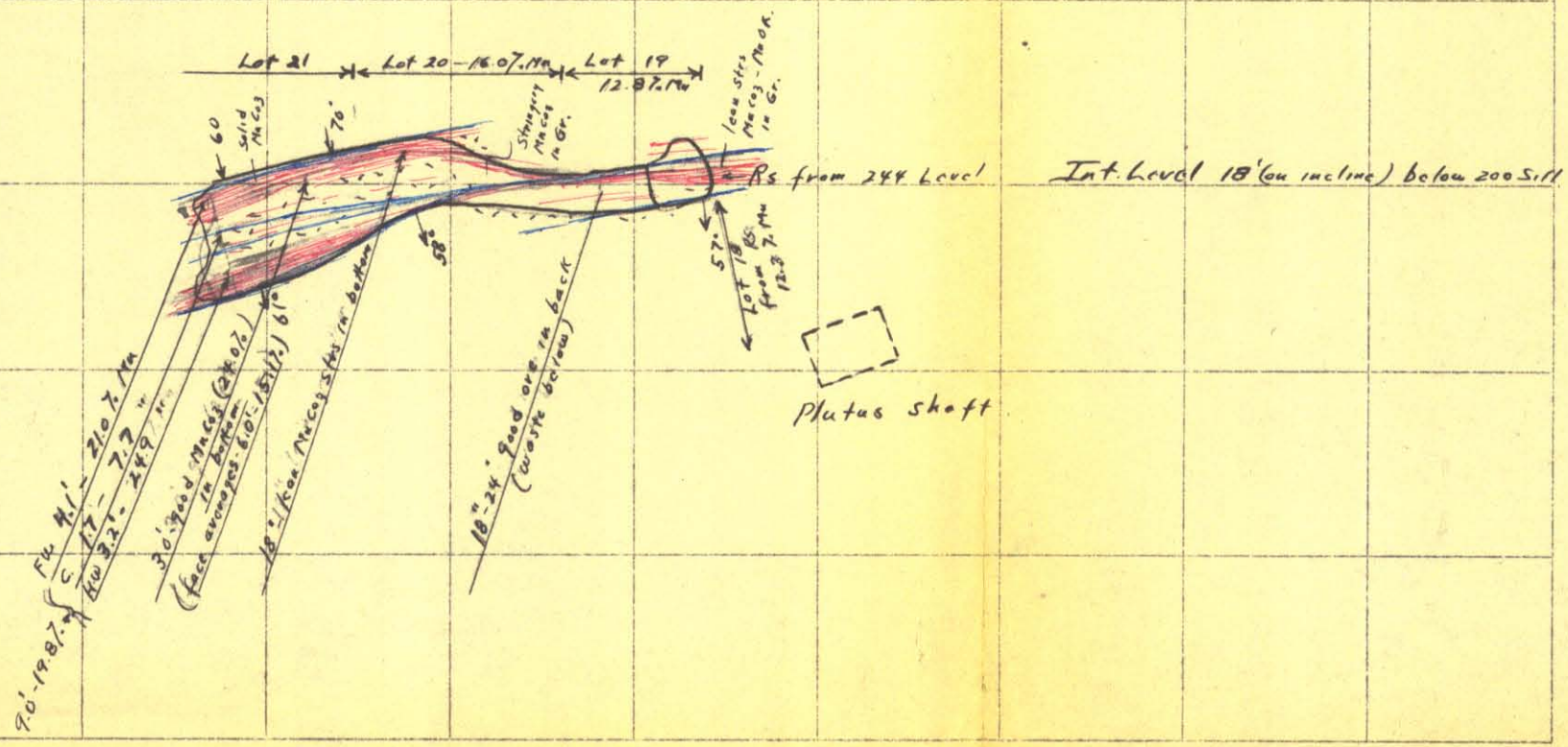

DMEA # 2074 - Contract No 2-Sdm-B-C04
Manganese
Longitudinal Section A-A'
Plutus Sh.
Col. Bl. 718'
20-Ft. Sh.
Collar El. 7'
Tunnel Sh.
Col. Bl. 7'
Note
Sketch Map
(Geologic and Assy Plan)
Showing
Surface Cuts
of
Plutus Mine
DMEA Docket No 2074
Contract No Sdm-B-C04
Silver Bow Co Montana
E. L. Irving & Robt. H. Nelson
Scale 1" = 20'

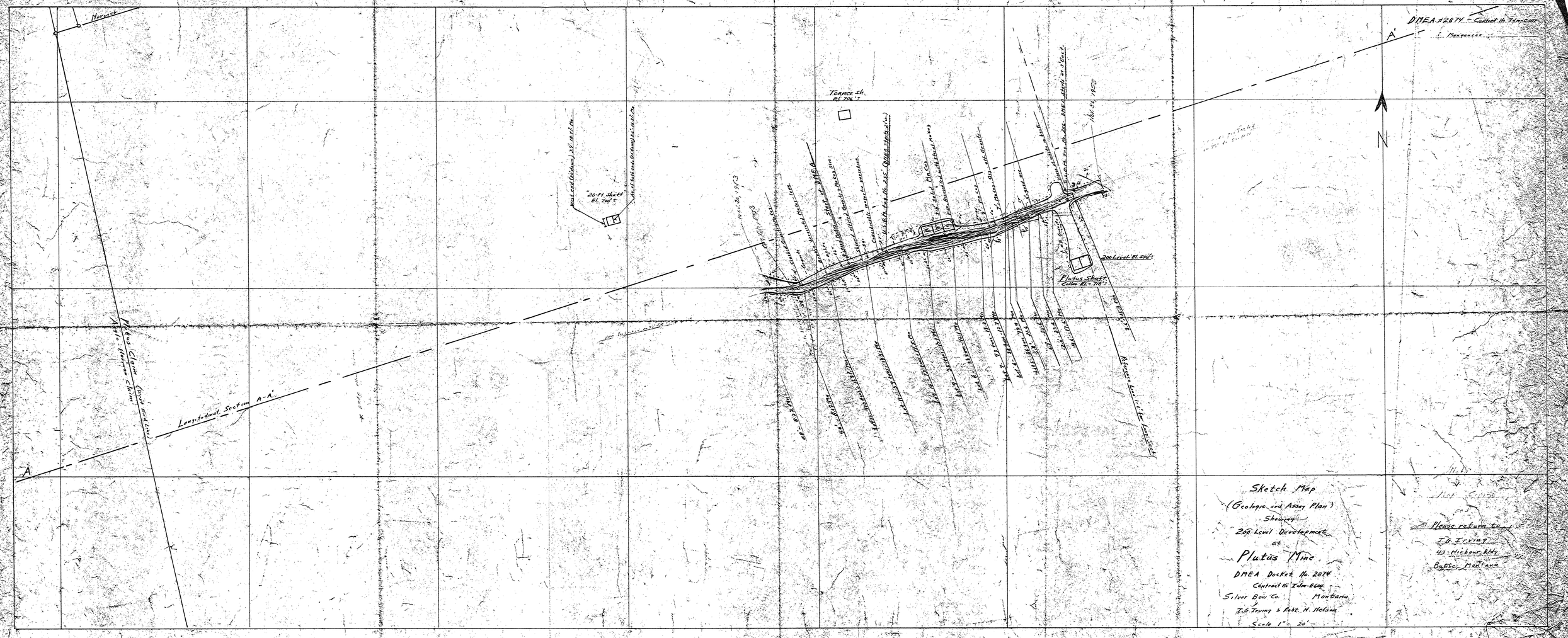
DMEA- 2874
Idm-E-604

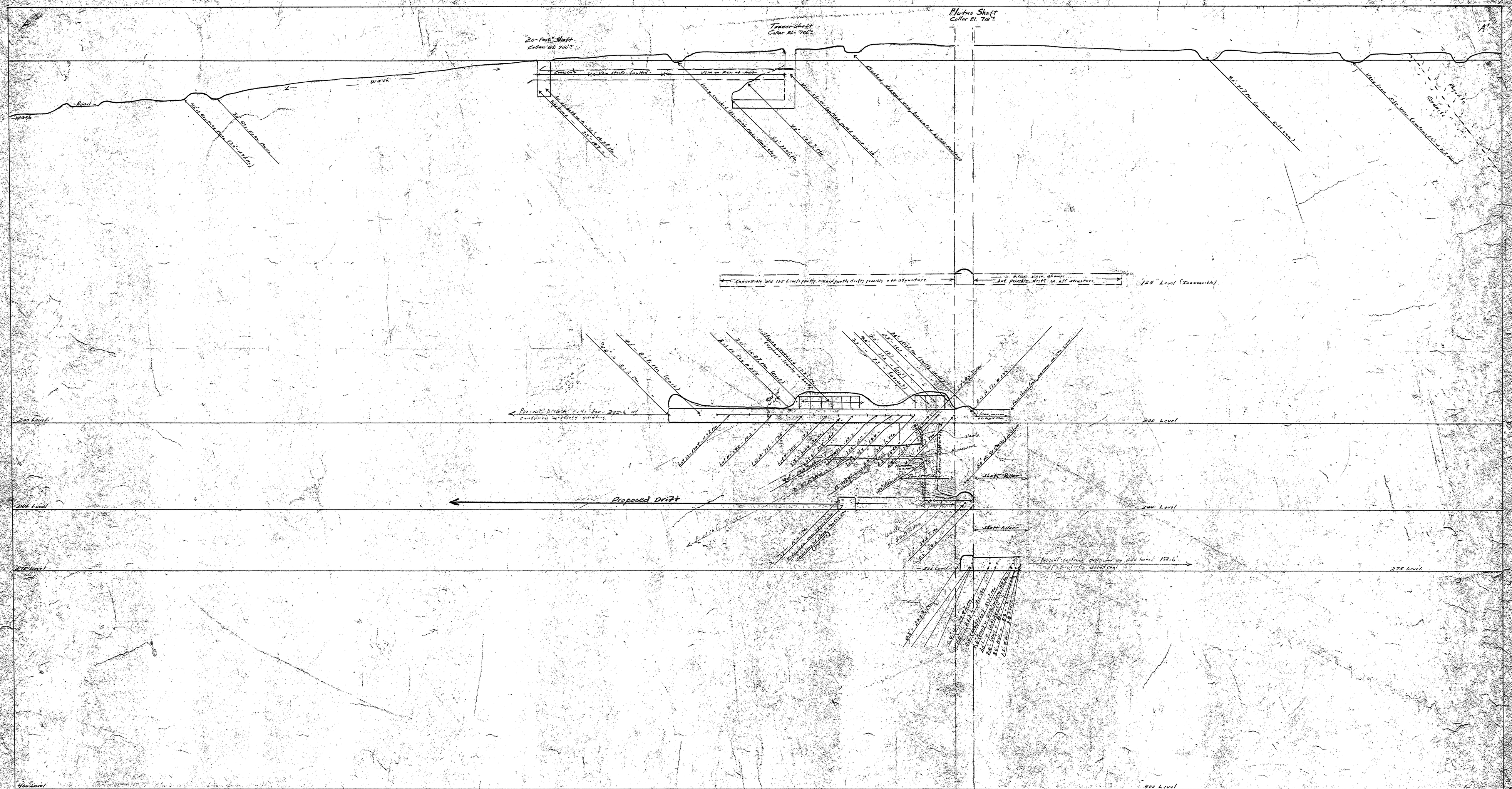
(Manganese)

Plutus Mine
Butte, Montana

Intermediate Level
27' above 244 Lev.
1" = 20'-




Norwood
Pluto Claim (Patented)
Apollo Thompson Claims
Longitudinal Section A-A'
A
A'
DMEA #2874 - Contract No. Jim-Bow
Manganese
N
Torrance sh.
El. 704'±
"2071 Shaft
El. 740'±
Coal (Oxidized) 3'±
Shaft bottoms (Dump) 35'±
Coal
Clay
Sandstone
Shale
Coal
Sandstone
Shale
Coal
Sandstone
Shale
Coal



Longitudinal Section A-A'
In plane of Vein (see Dg-6T)
of
Plutus Vein
Plutus Mine, Silver Bow Co., Montana
1" = 20'
DMEA Docket No. 2874
Contract 2-6-E-6
I. G. Irving and Robert H. Nelson
43 Harbor Blvd., Butte, Montana

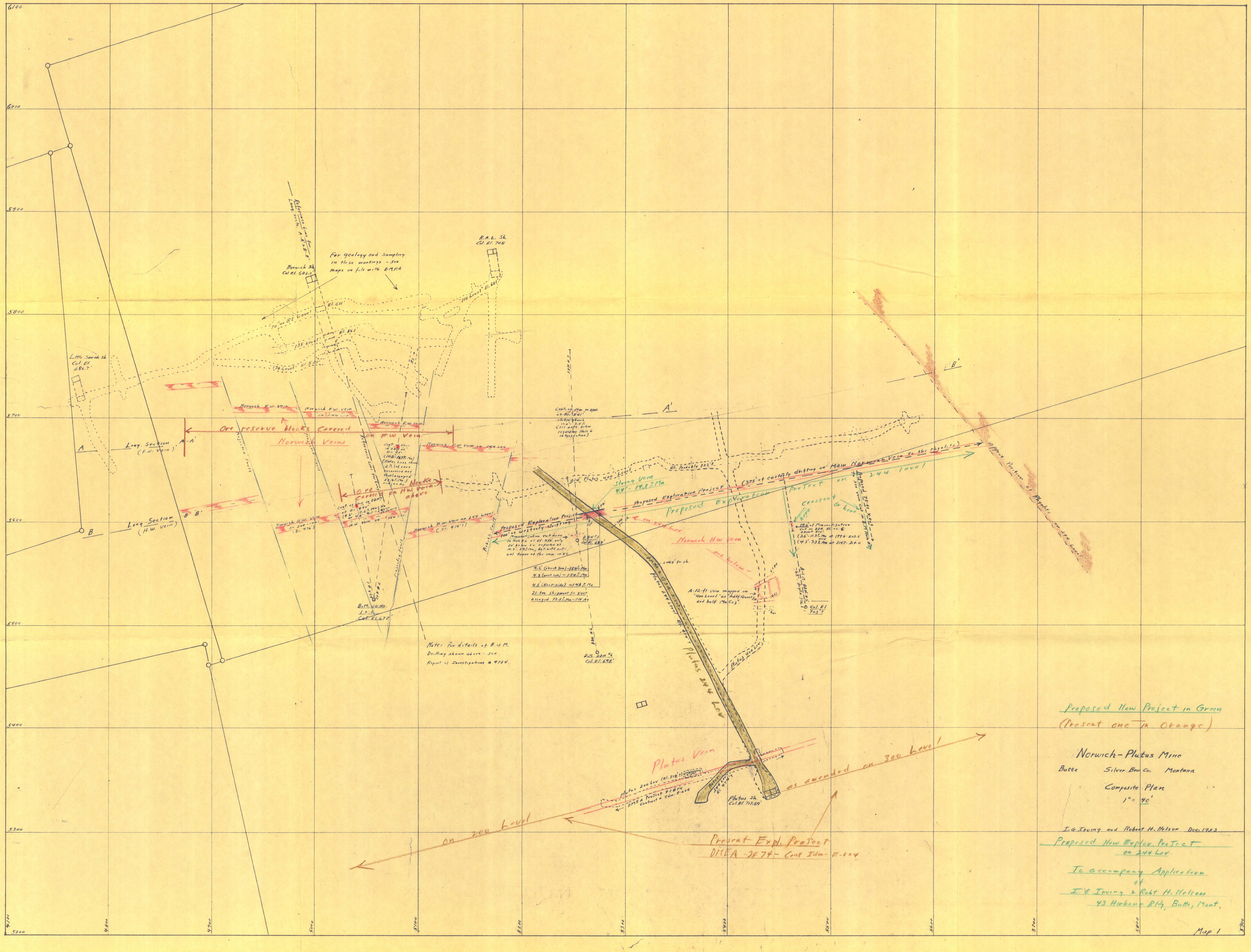
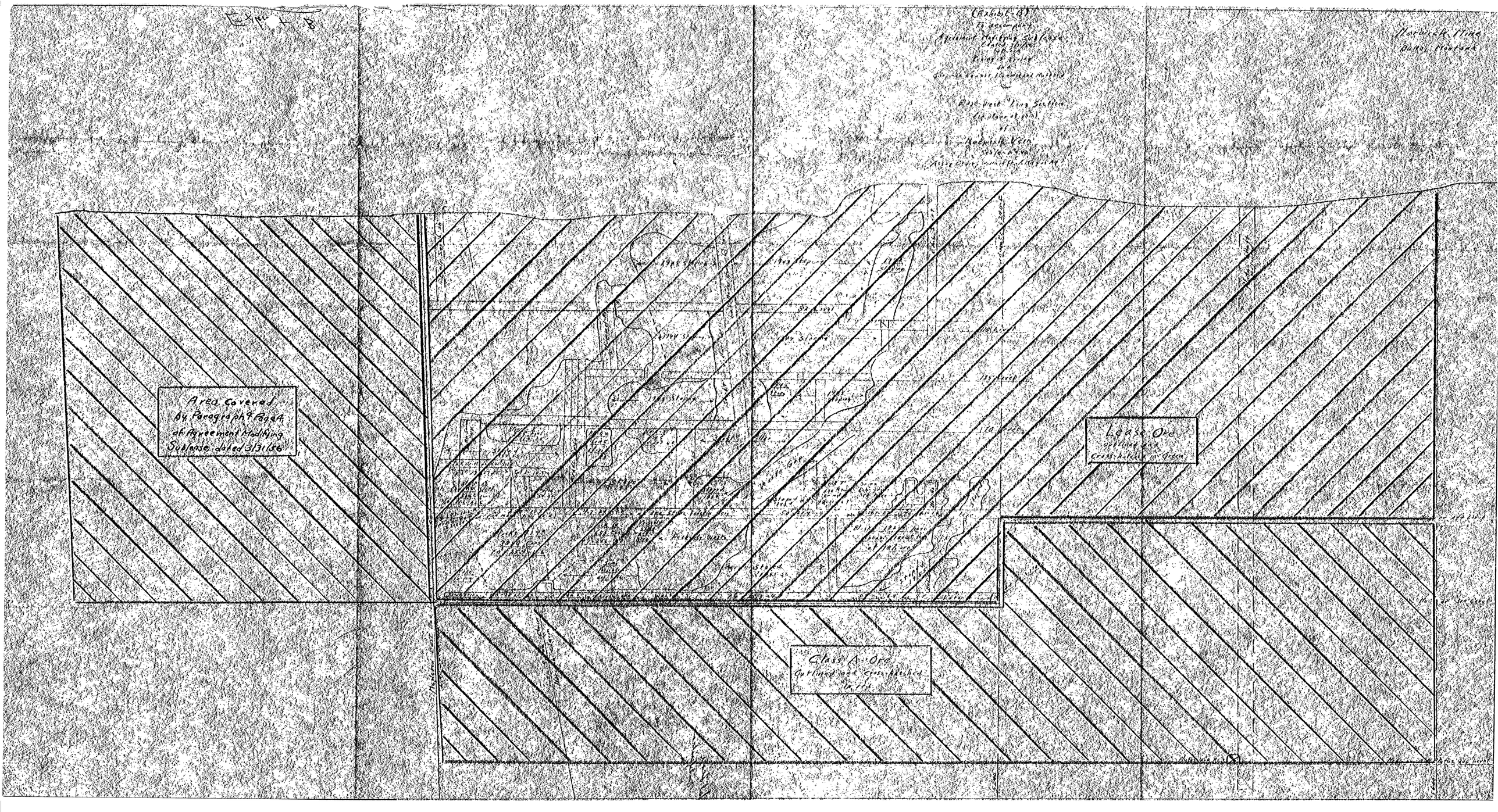

Proposed How Project in Green
(Present one in Orange)
Norwich-Plutus Mine
Butte Silver Bow Co. Montana
Composite Plan
1" = 40'
I.G. Irving and Robert H. Nelson Dec. 1983
Proposed How Explor. Project on 244 Lev.
To accompany Application of
I.G. Irving & Robt H. Nelson
43 Harbour Blk, Butte, Mont.
Map 1
Ore reserve blocks carried on FW Vein
Norwich Veins
Long. Section (F.W. Vein)
Long. Section (H.W. Vein)
Norwich FW Vein
Norwich HW Vein
Proposed Exploration Project
Proposed Exploration
Plutus Vein
Plutus 244 Lev
Plutus 300 Lev
Present Expl. Project
DMEA-2874-Cont Idn-E-604
on 300 Level
as exceeded on 300 Level
Plutus Sh.
Norwich Sh.
Little Sarah Sh.
R.A.L. Sh.
Old Plutus 400 Lev.
Staying Vein
Crosscut to have been cut on Plutus Vein
Approx Position of Phyllite on 244 Level
Note: For details of B.+M. Drilling shown above - see Report of Investigations #4784.

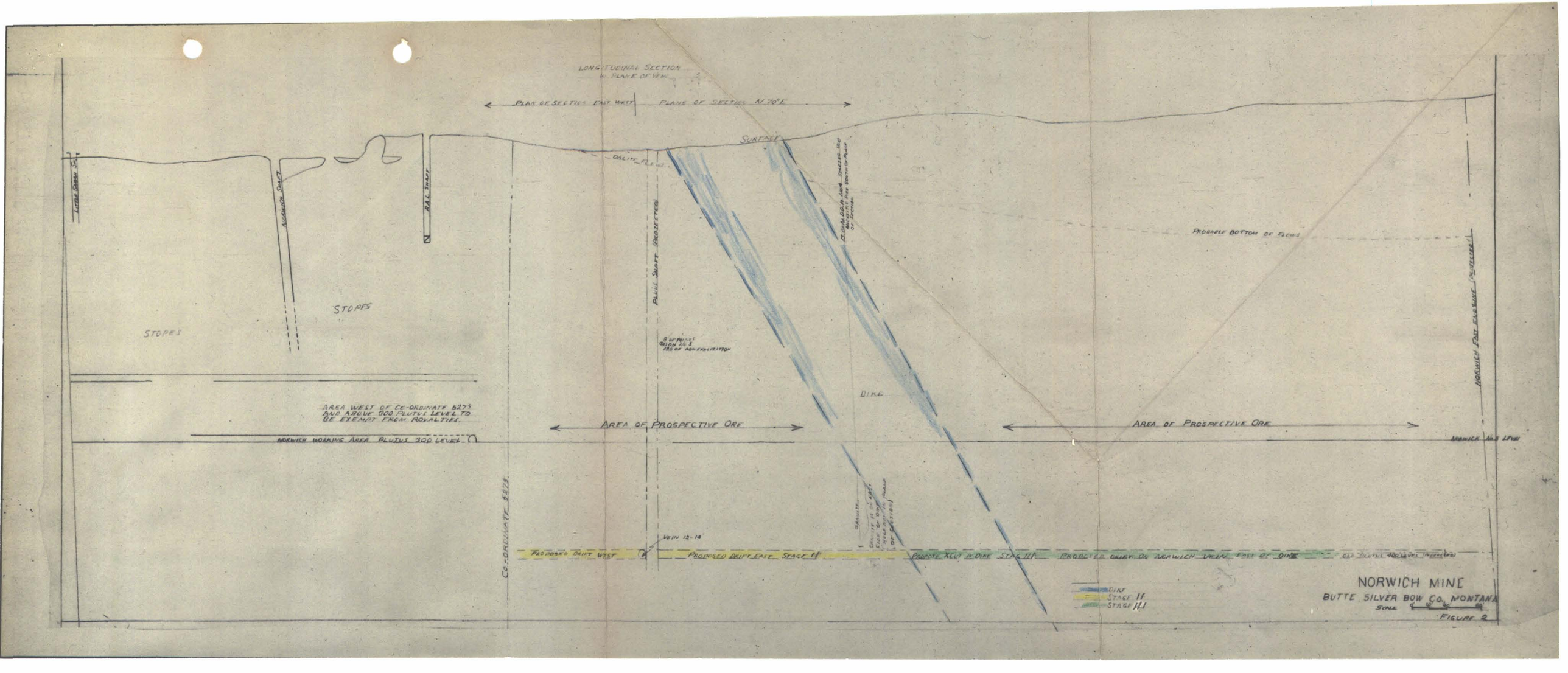
Exhibit B

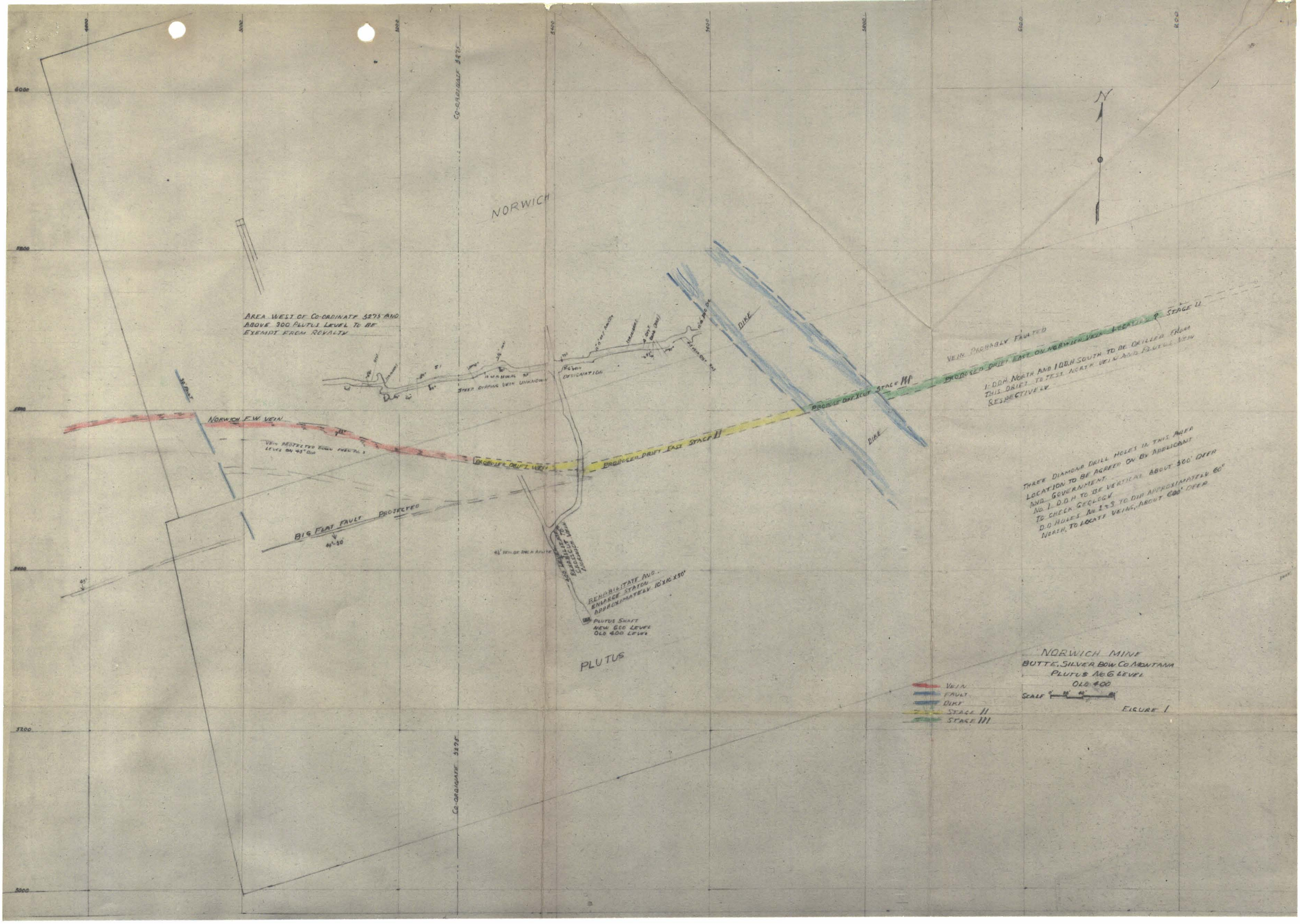
(Exhibit A)
To accompany
Agreement Modifying Sublease
Dated 3/31/86
Between
[illegible]

Rose Vein Line Section
Looking North
of
Mohawk Vein
[illegible]

Mohawk Mine
Rose Vein Area




LONGITUDINAL SECTION
IN PLANE OF VEIN
PLAN OF SECTION EAST WEST
PLANE OF SECTION N 70°E
SURFACE
DACITE FLOWS
LITTLE BROWN SHAFT
NORWICH SHAFT
R&L SHAFT
PLUTUS SHAFT (PROJECTED)
PROBABLE BOTTOM OF FLOWS
STOPES
STOPES
DIKE
AREA WEST OF CO-ORDINATE 8275
AND ABOVE 300 PLUTUS LEVEL TO
BE EXEMPT FROM ROYALTIES.
NORWICH WORKING AREA PLUTUS 300 LEVEL
AREA OF PROSPECTIVE ORE
AREA OF PROSPECTIVE ORE
NORWICH FAT ELEVATOR (PROJECTED)
CO-ORDINATE 8275
VEIN 12-14
PROPOSED DRIFT WEST
PROPOSED DRIFT EAST STAGE II
PROPOSE XCUT IN DIKE STAGE III
PROPOSED DRIFT ON NORWICH VEIN EAST OF DIKE
DIKE
STAGE II
STAGE III
NORWICH MINE
BUTTE SILVER BOW CO. MONTANA
SCALE
FIGURE 2


NORWICH
AREA WEST OF CO-ORDINATE 3275 AND ABOVE 300 PLUTUS LEVEL TO BE EXEMPT FROM ROYALTY
NORWICH F.W. VEIN
VEIN DEFLECTED DOWN FROM No. 1 LEVEL ON 45° DIP
PROJECTED DRIFT VEIN
PROPOSED DRIFT EAST STAGE II
PROPOSED DRIFT WEST STAGE III
PROPOSED DRIFT EAST ON NORWICH VEIN LOCATION ? STAGE II
VEIN PROBABLY FAULTED
1 D.D.H. NORTH AND 100 H SOUTH TO BE DRILLED FROM THIS DRIFT TO TEST NORTH VEIN AND PLUTUS VEIN RESPECTIVELY
DIKE
DIKE
STEEP DIPPING VEIN UNKNOWN
VEIN DESIGNATION
BIG FLAT FAULT PROJECTED
44°-50'
45°
REHABILITATE AND ENLARGE STATION APPROXIMATELY 10'x10'x50'
PLUTUS SHAFT
NEW 600 LEVEL
OLD 400 LEVEL
PLUTUS
CO-ORDINATE 3275
CO-ORDINATE 3275
THREE DIAMOND DRILL HOLES IN THIS AREA LOCATION TO BE AGREED ON BY APPLICANT AND GOVERNMENT.
No. 1 D.D.H TO BE VERTICAL ABOUT 300' DEEP TO CREEK GEOLOGY
D.D HOLES No. 2 & 3 TO DIP APPROXIMATELY 60° NORTH, TO LOCATE VEINS, ABOUT 600' DEEP
VEIN
FAULT
DIKE
STAGE II
STAGE III
SCALE 0 20' 40' 80'
NORWICH MINE
BUTTE, SILVER BOW CO. MONTANA
PLUTUS No. 6 LEVEL
OLD 400
FIGURE 1