☑ Audited

☐ Certified

W[illegible] ANALYSIS SHEET - DMEA PROJECT[illegible]

Analysis as of 12/16/54
Incl. Voucher for 10/54

☐ Actual Cost

☑ Agreed Unit Costs

Name Willden and Petty

State Utah

Commodity Tungsten

Docket No. 3235

Idm-E No. 698

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting					
Raising					
Shafts					
Winzes					
Drilling (Specify) Diamond	800	5960	~~551~~ 780	~~4103~~ 5,811	
Surface Excavation					
Underground Excavation					
Roads and Trails					
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) Assay		200			
Totals		6160		~~4,103.00~~ 5,811.00	

GOVT PARTICIPATION 75% 4,358.25

Prepared by Chamberlain

RC. 2/16/56.

7162

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

RECEIVED
AUG 29 1955

224 New Customhouse
Denver 2, Colorado

August 26, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA Docket 3235 (Tungsten), Contract Idm-E698
Willden and Petty, Millard County, Utah.

Enclosed are two copies of the Operator's Monthly Progress Report, Form MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data pertaining to work under the subject contract for the month of July, 1955.

W. M. Traver

Enclosures

JDC:jy

cc: MF-104 File E698
Wilson
Chron.

mf-104
July

RECEIVED
AUG 29 1955

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION IV

Administrative Audit Difference Statement

Date: August 22, 1955
Payee's
Reference: July 1955

Willden and Potty
Delta
Utah

Gentlemen:

Upon examination of the above Payee's Reference a difference was found which made it necessary to suspend your account accordingly:

Amount Claimed $1,393.15

Difference $

Amount Approved* $1,393.15

The reason for the difference was due to:

* $200.00 of the approved amount is held in abeyance pending receipt of the Operator's Final Report and release of the Final Report of Review, by the CA & AD, EMEA.

Any reclaim for deductions made above must be supported by the ORIGINAL of this form.

Very sincerely yours,

RRC

~~Max Ex Stokes~~ R. R. Cooper
Audit Section

R-IV-B & F Form No. 4
4-15-52 D

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

RECEIVED
AUG 29 1955

224 New Customhouse
Denver 2, Colorado

August 17, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 3235 (Tungsten), Contract Idm-8698 Willden and Petty, Millard County, Utah. Operator's Monthly Progress Report for the period July, 1955.

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 75 per cent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report, except as noted below.

$200.00 of the approved amount is to be held in abeyance pending receipt of the Operator's Final Report and release of the Final Report of Review by the CA & AD, DMEA.

Remarks

Date of Report- - - - - - - - - - - - - - -July 22, 1955
Date received in Field Office- - - - - -August 15, 1955
Date received in Regional Office- - - - -August 17, 1955

W. M. TRAVER,

W. M. Traver

Enclosures

JDC:jy

cc: MF-104 File E698
Wilson
Sec. Oper. Comm. (2)
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

DMEA
Date Rec'd

RECEIVED
AUG 29 1955

AUG 17 1955
BUREAU OF MINES
Denver, Colorado

August 15, 1955

Memorandum

To: W. M. Trenwr, Executive Officer, DMEA Field Team, Region III

From: Stephen R. Wilson

Subject: Docket No. DMEA-1326 (Tungsten), Contract Ida-2096, Willden and Petty, Millard County, Utah. MF-104 forms for July 1955

The attached MF-104 forms describe exploration completed during July 1955 on the Willden and Petty tungsten property. An inspection of the project site was made by M. N. Bowen August 5, 1955.

Diamond drill hole No. 2A, started during June 1955, was completed during July at a depth of 125 feet. Hole No. 2B was started and completed at a depth of 105 feet. Drilling reported for each hole was verified by M. N. Bowen at the time of inspection.

Hole No. 2B was scheduled to be 125 feet in depth; however, because of drilling difficulties, at a depth of 105 feet the operator was unable to continue drilling and the hole was abandoned.

It is recommended that the project be considered completed, inasmuch as no mineralization of significance was encountered in the drilling and only 20 feet of unused drilling footage remains. Repayment to the operator should be made as outlined in the inspecting engineer's memorandum, subject to receipt of the operator's final engineering and geologic report.

The MF-104 forms were received in this office August 15, 1955.

Stephen R. Wilson
Stephen R. Wilson

Enclosure

cc: J. B. Clemmer

S. R. Wilson August 12, 1955

M. H. Howes

Docket No. DMEA-3235 (Tungsten), Contract Idm-3698, Willden and Petty, Millard County, Utah. Progress report for July 1955.

The Willden and Petty property was inspected August 5, 1955. Diamond drill hole No. 2A was advanced vertically 82 feet to a total depth of 125 feet, and hole No. 2B was drilled to completion, 105 feet, N. 30° E. at an inclination of 60°. It is verified that 187 feet of diamond drilling progress during July, as reported on form MF-104a, is correct, and that the work was performed in accordance with the contract.

The operator's narrative report is considered to be adequate.

Both holes were drilled entirely in shattered limestone, with no mineralization being encountered. Loss of drilling water necessitated the cementing of the hole many times. Hole No. 2B was stopped at 105 feet in depth, after the loss of a bit, core barrel, and 40 feet of rods in the hole. Since no mineralization was disclosed in the total length of hole No. 2A, nor in 105 feet of hole No. 2B, both holes having passed through the projected mineralized beds, the operator believes it advisable to terminate the project.

It is recommended that the operator be reimbursed $1,044.86, which is 75 percent of the allowable cost of $1,393.15 for 187 feet of drilling at $7.45 per foot.

M. H. Howes

M. H. Howes

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

U. S. Bureau of Mines
RECEIVED
AUG 15 1955
Salt Lake City, Utah

Budget Bureau No. 42-R1036.5

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S MONTHLY REPORT AND VOUCHER

RECEIVED
AUG 29 1955

Month of July, 1955 Docket No. DMEA 3235 Contract No. Idm-E698
Operator's Name Willden & Petty Minerals Tungsten
Address Delta, Utah
Contract Amount, $ ~~xxxxxx~~ 6,160.00 Government Participation: 75 % Amount, $ ~~xxxxxx~~ 4,620.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling Diamond	1,393.15	4,423.81	5,816.96			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor			(FINAL REPORT)			
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	1,393.15	4,423.81	5,816.96	1393.15	4,423.81	5,816.96
					* 5.96	* 5.96
				1393.15	4419.85	5811.00

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

Date 7/22/55 *Payee Willden & Petty

Per [signature] Title Partner

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

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

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of: $ 844.86

Signature RCA
(Authorized Certifying Officer)

Date 8/22/55 Vou. No. DMA-56-16
(See other side)

* Previous disallowance 5.96

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E698 in accordance with the terms of the contract.

Signature M. H. Howe Jr. Title Mining Engineer Date Aug. 15, 1955

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature W. M. Carey Title Executive Officer Date AUG 17 1955

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED
AUG 29 1955

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of July 195 5 Docket No. DMEA 3235 Contract No. Idm-2698
Operator's Name Willden & Petty Minerals Tungsten
Address Delta, Utah

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	1 ft.	1,393.15	187	5,816.96	780.8	7.45	250	7.45
Churn								
Auger								
Stripping				(FINAL REPORT)				
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		1,393.15		5,816.96				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		1,393.15		5,816.96				

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

Date 7/22/55 Operator Willden & Petty

Per Earl Willden Title Partner

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

REMARKS:

(Instructions on reverse)

(For Government use only)

M. H. Howes, Mining Engineer, Aug. 15, 1955
JRW

INSTRUCTIONS

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

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

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

GPO 872894

RECEIVED
AUG 2 9 1955

NARRATIVE REPORT FOR THE MONTH OF JULY, 1955

Willden and Petty
Delta, Utah

The balances of all drilling possible at this time in both the vertical hole and 60 degree hole was completed.

The vertical hole was completed to its depth of 125 feet and the 60 degree hole was drilled to a depth of 105 feet at which time the bit core, barrel and 40 feet of rod jammed and was unrecoverable.

Little mineralization on the entire drilling project was encountered.

This is the final report for this drilling operation.

400

RECEIVED
AUG 29 1955

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

224 New Customhouse
Denver 2, Colorado

August 26, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA Docket 3235 (Tungsten), Contract Idm-E698 Willden and Petty, Millard County, Utah. Operator's Monthly Progress Report for the period June, 1955.

Enclosed are two copies of the Operator's Monthly Progress Report, Form MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data pertaining to work under the subject contract for the month of June, 1955.

W. M. Traver

W. M. Traver

Enclosures

jy

cc: MF-104 File E698
Wilson
Chron.

mf-104
June

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

RECEIVED
AUG 29 1955

224 New Customhouse
Denver 2, Colorado

August 17, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 3235 (Tungsten), Contract Idm-E698 Willden and Petty, Millard County, Utah. Operator's Monthly Progress Report for the period June, 1955.

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 75 per cent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

Hole No. 2A has been completed.

Remarks:

Date of Report- - - - - - - - - - - - July 9, 1955
Date received in Field Office- - - August 15, 1955
Date received in Regional Office- - August 17, 1955

W. M. TRAVER,

W. M. Traver

Enclosures

JDC:jy

cc: MF-104 File E698
Wilson
Sec. Opr. Comm. (2)
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

DMEA
Date Rec'd
AUG 17 1955

RECEIVED
AUG 29 1955
BUREAU OF MINES
Denver, Colorado

August 15, 1955

Memorandum

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

From: Stephen R. Wilson

Subject: Docket No. DMEA-2125 (Tungsten), Contract Idm-2595, Willden and Putty, Millard County, Utah. MF-104 forms for June 1955

Attached are five copies of the subject operator's report covering exploratory work during June 1955. Diamond drilling was started on the property after an amendment was granted to allow two holes, each 125 feet in depth. Actual drilling was started June 5, 1955. The property was inspected by M. H. Bowen July 7, 1955.

The operator has reported a total advance of 43 feet in hole No. 2A. The advance was verified by the inspecting engineer and is in accordance with terms of the contract.

It is recommended that the operator be reimbursed by 75 percent of the reported costs for June 1955. Payment should be subject to completion of the hole.

The MF-104 forms were received in this office August 15, 1955.

Stephen R Wilson
Stephen R. Wilson

Enclosure

S. R. Wilson August 12, 1955

M. H. Howes

Docket No. DMEA-3135 (Tungsten), Contract Idm-E698, Willden and Petty, Millard County, Utah. Progress report for June 1955.

The Willden and Petty property was inspected July 7, 1955. On May 13 the diamond drill rig was moved to the new drill location on the Brown Queen claim, to start drilling two 125-foot holes in place of the original 250-foot No. 2 hole. One of the 125-foot holes is to be drilled vertically, and will hereafter be called No. 2A hole. The other hole will be drilled N. 30° E. at an inclination of 60°, and will be called No. 2B hole. Drilling was delayed until June 5 because of difficulty in obtaining some necessary repair parts for the rig. It is verified that 43 feet of progress in diamond drilling No. 2A hole, as reported on June form MF-104a, is correct, and that the work was performed in accordance with the contract.

The drilling advance was made entirely in limestone. A somewhat shattered condition of the rock caused loss of drilling water at 4, 30 and 43 feet, at which points cementing of the hole was required. No mineralization was encountered.

The operator's narrative report is considered to be adequate.

It is recommended that the operator be paid $240.26, which is 75 percent of the allowable cost of $320.35 for 43 feet at $7.45 per foot, but that payment be withheld until completion of the hole.

M. H. Howes

M. H. Howes

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

Budget Bureau No. 42-R1036.5

U.S. Bureau of Mines
RECEIVED
AUG 15 1955
Salt Lake City, Utah

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

RECEIVED
AUG 29 1955

Month of June, 1955 Docket No. DMEA 3235 Contract No. Idm-E693
Operator's Name Willden & Petty Minerals Tungsten
Address Delta, Utah
Contract Amount, $ ~~xxxxxxx~~ 6,160.00 Government Participation 75 % Amount, $ ~~xxxxxxx~~ 4,620.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling Diamond	320.35	4,103.46	4,423.81			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	320.35	4,103.46	4,423.81	320.35	4,103.46	4,423.81
					+ 5.96	+ 5.96
					4097.50	4417.85

I certify that the above bill is correct and just and that payment therefor has not been received.
Date 7/9/55 *Payee Willden & Petty
Per Earl Willden Title Partner

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

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

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of: $320.35
$240.26

Signature [illegible]
(Authorized Certifying Officer)
Date 8/22/55 Vou. No. DMA-56-16
(See other side)

+ Previous disallowance 5.96

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E698 in accordance with the terms of the contract.

Signature M. H. Howes SKW Title Mining Engineer Date Aug. 15, 1955

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature W. M. Maney Title Executive Officer Date AUG 17 1955

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

U. S. Bureau of Mines
RECEIVED
AUG 15 1955
Salt Lake City, Utah

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

RECEIVED
AUG 29 1955

Month of June 195 5 Docket No. DMEA 3235 Contract No. Idm-E698
Operator's Name Willden & Petty Minerals Tungsten
Address Delta, Utah

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	1 Ft.	320.35	43	4,423.81	593.8	7.45	250	7.45
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		320.35		4,423.81				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		320.35		4,423.81				

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

Date 7/9/55 Operator Willden & Petty

Per Earl Willden Title Partner

REMARKS:

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

(Instructions on reverse)

(For Government use only)

M. H. Howe, Mining Engineer, Aug. 15, 1955
SRW

INSTRUCTIONS

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

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

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

GPO 872894

RECEIVED
AUG 29 1955

NARRATIVE REPORT FOR THE MONTH OF JUNE, 1955.

Willden and Petty
Delta, Utah

Drilling project was started June 5, 1955, and the vertical hole was chosen to be drilled first.

Only 43 feet advance was made on this hole during the month. Water was lost for the first time at four feet; again at thirty feet and again at forty three feet. Little mineralization was encountered.

Constant mechanical difficulties were experienced with the drilling rig so that little progress was made.

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

224 New Customhouse
Denver 2, Colorado

December 1, 1954

W3 4

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 3235 (Tungsten), Contract Idm-E698, Willden and Petty, a partnership consisting of Earl B. Willden, Al Willden, and Lionel A.Petty, Millard County, Utah - Operator's Monthly Progress Report for the month of October, 1954

Enclosed are two copies of the Operator's Monthly Progress Report, Form MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data pertaining to work under the subject contract for the month of October, 1954.

W. H. KING

W. H. King

Enclosures

Copy to: S. P. Wilson

sub
chron

MF-104
Oct

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION IV

Lease Minerals Administration
RECEIVED
DEC 6 1954

Administrative Audit Difference Statement

Date: [redacted]
Payee's
Reference: [redacted]

[redacted]

Upon examination of the above Payee's reference a difference was found which made it necessary to suspend your account accordingly:

Amount Claimed $ [redacted]

Difference $ [redacted]

Amount Approved $ [redacted]

The reason for the difference was due to:

[redacted]

Any reclaim for deductions made above must be supported by the ORIGINAL of this form.

Very sincerely yours,

N.E.Stokes
Audit Section

R-IV-B & F Form No. 4
4-15-52 D

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

224 New Customhouse
Denver 2, Colorado

November 19, 1954

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 3235 (Tungsten) Contract Idm-E698, Willden and Petty, a partnership consisting of Earl B. Willden, Al Willden and Lionel A. Petty, Millard County, Utah. Operator's Monthly Progress Report for the month of October 1954.

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made as follows, contingent on your verification of arithmetical accuracy within the report.

Basis for Payment

As reported by operator on report for October 279.2 feet of drill hole at $7.45 per foot	$2,080.04
Portion of uncompleted Hole disallowed from September report which is now allowable 20.8 feet at $7.45 per foot	154.96
Total	$ 2,235.00
Government participation at 75%	1,676.25
Amount due the operator	$1,676.25

Remarks:

Date of operator's report	11/10/54
Date report received in B.O.M. Branch office	11/15/54
Date report received in Regional office	11/19/54

The drill logs are retained in this office for further reference.

John F. Shaw
John F. Shaw
for W. H. King

cc: Sec. to Oper. Comm. (2)
Subject
SRWilson
JWTownsend
Chron

JWT:dm

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

November 17, 1954

Memorandum

To: F. N. King, Executive Officer, DMEA Field Team, Region IV

From: Chief, Minerals Development Branch, Mining Division, Region IV

Subject: Docket No. DMEA-3231 (Tungsten), Contract 14s-2696, Willson and Petty, Millard County, Utah. MF-104 forms for October 1954

Attached are the required copies of the subject contractor's report covering exploratory work during October 1954. An inspection of the project was made by H. N. Hayes November 10, 1954.

Diamond drill hole No. 1 was continued from a depth of 30.8 feet to completion at 550 feet during October. Total drilling under the contract to October 31, 1954, is 550.8 feet. No mineralization has been found in either of the two holes completed. One hole remains to be drilled under the contract.

Work completed during the reporting period is in conformance with terms of the contract. It is recommended that reimbursement to the operator be accomplished in the manner described in the inspecting engineer's progress report.

The MF-104 forms were received in this office November 15, 1954.

Stephen R. Wilson
Stephen R. Wilson

Enclosure

S. R. Wilson

November 16, 1954

M. H. Howes

Docket No. [illegible] (Tungsten), Contract 14n-[illegible], Willden and Petty, Millard County, Utah. Progress report for October 1954

The Willden and Petty property was inspected November 10, 1954. Diamond drill hole No. 1 was advanced 279.2 feet to a total depth of 300 feet. It is verified that 279.2 feet of progress in diamond drilling, as reported on October form MF-104A, is correct, and that the work was performed in accordance with the contract.

Hole No. 1 was started and advanced 20.8 feet in September. Subsequent advance to a depth of 206 feet completed the hole. It was drilled west, at an inclination of minus 60°. No mineralization was encountered and the quartz monzonite was not reached. At several points in the hole drilling water was lost, which required cementing of the hole. A bit was lost at 281.1 feet. Failure to recover the bit after three days of fishing necessitated its removal by chopping. Most of the rock encountered in the hole was limestone. The last 30 feet was clay.

The operator's narrative report is considered to be adequate.

It is recommended that the operator be paid $1,[illegible].03, which is 78 percent of the allowable cost of $2,[illegible].04 for 279.2 feet of diamond drill hole for October at $7.45 per foot.

M. H. Howes

M. H. Howes

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

Budget Bureau No. 42-R1036.4
Approval expires 6-30-53.

U. S. DEFENSE MINERALS ADMINISTRATION
RECEIVED
NOV 1 2 1954
DEC - 6 1954
Salt Lake City, Utah

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

Month of October, 1954 Docket No. DMEA 3235 Contract No. Ton - 1096
Operator's Name Willden & Potty Minerals Tungsten
Address Delta, Utah
Contract Amount, $ 6100.00 Government Participation: 75 % Amount, $ 4520.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling	2080.04		4103.46			
Bulldozing Diamond		2023.42				
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	2080.04	2023.42	4103.46	2080.04	2023.42	4103.46

154.912 160.92 - 160.92
+ 154.96
2235.00 1862.50 4097.50
$1676.25

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

Date 11-10-54 *Payee Willden & Potty

Per Al W Illden Title Partner

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

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

Signature Randall R. Cooper
(Authorized Certifying Officer)

Date 11-22-54 Vou. No. DMA-11-35
(See other side)

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

(Instructions on reverse)

1. Portion of uncompleted hole disallowed in Sept. now allowable
2. Previous deduction

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E698 in accordance with the terms of the contract.

Signature M. M. Howes JRW Title Mining Engineer Date Nov. 16, 1954

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE

Signature for W. H. KING Title Executive Officer Date NOV 19 1954

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.1
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

Defense Minerals Administration
RECEIVED
DEC 6 1954

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of October 1954 Docket No. DMEA 3235 Contract No. Idm - 1496
Operator's Name Willdon & Potty Minerals Tungsten
Address Bolca, Utah

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	1	2080.04	279.2	4103.46	550.8	7.45	000	7.45
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		2080.04	279.2	4103.46				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		2080.04	279.2	4103.46				

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

Date 11-10-54 Operator Willdon & Potty

Per Al. W. Willdon Title Partner

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

REMARKS:

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

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

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

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

GPO 83-38475

NARRATIVE REPORT FOR MONTH OF OCTOBER, 1954

Willden and Potty
Delta, Utah

Drilling on hole #1 was suspended from September 22 until October 6 because part of the drilling tools were lost and drilling could not be commenced until they were recovered.

Considerable difficulty has been experienced in both holes as both cement and water is frequently lost. Hole #1 was drilled to a depth of 300 feet by November 10th. Granite was not reached in hole #1 and was not reached in hole #3.

402

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

224 New Customhouse
Denver 2, Colorado

December 3, 1954

WSM

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 3235 (Tungsten), Contract Idm-E698, Willden and Petty, a partnership consisting of Earl B. Willden, Al Willden and Lionel A. Petty, Millard County, Utah.

Enclosed are two copies of the Operator's Monthly Progress Report, Form MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data pertaining to work under the subject contract for the month of September, 1954.

W. H. King

W. H. King

Enclosures

MF-104A
Sept

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION IV

Administrative Audit Difference Statement

Date: [illegible]
Payee's
Reference: [illegible]

[illegible]
[illegible], Utah

Gentlemen:

Upon examination of the above Payee's reference a difference was found which made it necessary to suspend your account accordingly:

Amount Claimed	$ [illegible]
Difference	$ [illegible]
Amount Approved	$ [illegible]

The reason for the difference was due to:

1/	Drill hole No. 1 — 20.0 feet at [illegible] per foot disallowed	[illegible]
2/	Drill hole No. 3 — 0.0 feet at [illegible] per foot disallowed	[illegible]
	Total	[illegible]

1/ Reimbursement for hole not completed to its objective, not allowable under provisions of footnote 2/ of Exhibit B/B under the terms of the contract.

2/ Disallowance of footage in excess of maximum allowable depth of hole.

Any reclaim for deductions made above must be supported by the ORIGINAL of this form.

Very sincerely yours,

N.E.Stokes
Audit Section

R-IV-B & F Form No. 4
4-15-52 D

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

224 New Customhouse
Denver 2, Colorado

November 3, 1954

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 3235 (Tungsten), Contract Idm-E698, Willden and Petty, a partnership consisting of Earl B. Willden, Al Willden and Lionel A. Petty, Millard County, Utah - Operator's Monthly Progress Report for the month of September 1954

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been in part completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 75 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report, except for the following disallowances:

Total amount of operator's claim.....$1,025.86

Disallowances

1/ Drill Hole No. 1	20.8 feet at $7.45 per foot	$154.96	
2/ Drill Hole No. 3	0.8 feet at $7.45 per foot	5.96	
	Total Disallowances		160.92
	Balance.....		$864.94
Government participation at 75%.....			$648.71

1/ Reimbursement for hole not completed to its objective not allowable under provisions of footnote 2/ of Exhibit "A"

2/ Disallowance of footage in excess of maximum allowable depth of hole.

Please inform the operator as to footnotes 1/ and 2/.

Remarks:

The required drill logs pertaining to Hole No. 3 have been received and are retained in our files.

Date of Operator's report..... 10-12-54
Date report received in B.G.M. Branch Office.. 10-13-54
Date report received in Regional Office..... 11-3-54

for John F. Shaw

W. H. King

Enclosures

JWT:jp
cc Subject
Chron
SRWilson
Sec. to Op. Comm. (2)
Townsend

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

November 1, 1954

Memorandum

To: V. E. King, Executive Officer, RMEA Field Team, Region IV

From: Chief, Minerals Development Branch, Mining Division, Region IV

Subject: Docket No. RMEA-3223 (Tungsten), Contract Ida-3023, Hilldon and Petty, Millard County, Utah. MF-104 forms for September 1954

Attached are the requisite copies of the subject operator's monthly progress report covering work accomplished during September 1954. An inspection of the property was made by N. E. Brown October 21, 1954.

The operator has reported a total of 137.7 feet of drilling in two holes during the month. Hole 2 was deepened from 116.9 feet to a total depth of 250.6 feet. Hole 1 was started during the month and drilled to a depth of 20.8 feet. All drilling advance was made in limestone without scheelite mineralization.

Progress reported by the operator is in conformance with the contract, with one exception. The maximum allowable depth of hole 2 is 250 feet. The operator has reported a depth of 250.6 feet. It is recommended that the operator be reimbursed for the Government's share of September expenditures in the manner shown in the inspecting engineer's memorandum.

The MF-104 forms were received in this office October 13, 1954. Delay in transmitting the forms to Denver resulted from assignment of the inspecting engineer on other work.

Stephen R. Wilson
Stephen R. Wilson

Enclosure

S. R. Wilson

October 25, 1954

M. H. Howes

Docket No. DMEA-3225 (Tungsten), Contract Idm-2088, Willden and Petty, Millard County, Utah. Progress report for September 1954

The Willden and Petty property was inspected October 21, 1954. Diamond drill hole No. 2 was advanced 116.9 feet to a total depth of 250.8 feet, and hole No. 1 was drilled 20.8 feet during September. It is verified that 137.7 feet of progress in diamond drilling during September, as reported on form MF-104A, is correct. The work was performed in accordance with the contract, except that hole No. 2 was drilled 0.8 feet farther than the allowable maximum.

Hole No. 2 was drilled entirely in limestone. No scheelite mineralization was encountered. Shattered rock below 120-foot depth required frequent cementing of hole to prevent the loss of water. The last 14 feet of hole was drilled in a white clay, with no core recovery. In general, a very good core recovery was obtained in this hole.

Hole No. 1 was started on September 16, 1954. Overburden was 12.6 feet thick and required casing. From 12.6 feet to 20.8 feet, the hole encountered limestone, with no mineralization.

The operator's narrative report is considered to be adequate.

It is recommended that the operator be paid $754.98, which is 75 percent of the allowable cost of $1,019.90 for 136.9 feet of diamond drill hole for September at $7.45 per foot.

M. H. Howes

M. H. Howes

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.5

U. S. Bureau of Mines
RECEIVED
OCT 13 1954
Salt Lake City, Utah

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of September, 1954 Docket No. DMEA 3235 Contract No. 10-7-1290
Operator's Name Willden & Petty Minerals Tungsten
Address Delta, Utah
Contract Amount, $ 6160.00 Government Participation: 25% Amount, $ 4620.00

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling Diamond	1025.86	997.56	2043.42			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	1025.86	997.56	2043.42	1025.86	997.56	2043.42
				* 160.92		* 160.92
				864.94		1882.50
				$ 648.21		

I certify that the above bill is correct and just and that payment therefor has not been received.
Date 10-12-54 *Payee Willden & Petty
Per al willden Title Partner

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

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

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:
Signature Randell R. Cooper
(Authorized Certifying Officer)
Date 11/9/54 Vou. No. DMA-55-32
(See other side)

* Disallowed this voucher

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E698 in accordance with the terms of the contract.

Signature M. H. Rowe JRW Title Mining Engineer Date Oct. 25, 1954

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature J. F. Shaw for W. H. King Title Executive Officer Date NOV 3 1954

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of September 1954 Docket No. DMEA 3235 Contract No. Idm-2698
Operator's Name Willden & Petty Minerals Tungsten
Address Delta, Utah

OPERATION	Unit	Costs This Month	Units This Month	Costs to Date	Units to Date	Unit Costs to Date	Authorized by Contract	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	133.9	1025.86	137.7	2043.42	271.6	7.45	800	7.45
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
Total Distributed Costs		1025.86		2043.42				Total Costs Authorized by Contract
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
Total Costs		1025.86		2043.42				

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

Date 10-12-54 Operator Willden & Petty

Per Al-W Illden Title Partner

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

Remarks:

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

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

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

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

GPO 872894

NARRATIVE REPORT FOR MONTH OF SEPTEMBER, 1954

Hillden and Potty
Delta, Utah

Drilling hole # 3 was drilled to a depth of 250.8 feet by September 14. Considerable difficulty was experienced after reaching a depth of 120 feet. Water was frequently lost, fault being very badly shattered.

Hole # 1 was started September 16 and drilled to a depth of 20.8 feet, at which point both water and cement was lost. No drilling attempt has been made since September 22.

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

224 New Customhouse
Denver 2, Colorado

September 24, 1954

3235 - WSay

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3235 (Tungsten), Contract Idm-E698, Willden and Petty, Millard County, Utah.

Enclosed are two copies of the Operator's Monthly Progress Report, Form MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data pertaining to work under the subject contract for the month of August, 1954.

W.H. King

Enclosures

dm

MF-104
Aug

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

224 New Customhouse
Denver 2, Colorado

September 17, 1954

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 3235 (Tungsten), Contract Idm-E698, Willden and Petty, Millard County, Utah. Operator's Monthly Progress Period for month of August 1954.

Enclosed are the original and four copies of Form MF-104 and MF 104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 75 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

Remarks:

Date of Report	Sept. 8, 1954
Date Received in Field Office	Sept. 13, 1954
Date Received in Region Office	Sept. 17, 1954

John F. Shaw
John F. Shaw
For W. H. King

Enclosures

RDB:mb
cc: Contract
Secretary, Oper. Comm. (2)
SRWilson
Chron

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

September 13, 1954

Memorandum

To: W. H. King, Executive Officer, DMEA Field Team, Region IV

From: Chief, Minerals Development Branch, Mining Division, Region IV

Subject: Docket No. DMEA-3235 (Tungsten), Contract Idm-2098, Willden and Petty, Millard County, Utah. MF-104 forms for August 1954

Attached are five copies of the subject contractor's report covering work performed during August 1954. Diamond drilling under the contract was started August 19, 1954, and the project was inspected by H. H. Howes September 9, 1954.

During the reporting period a total of 123.9 feet of drilling was completed in hole No. 3. No ore was encountered in the hole. The drilling is in conformance with terms of the contract, and it is recommended that the operator be reimbursed by 75 percent of the reported costs, as shown in the inspecting engineer's report.

The MF-104 forms were received in this office September 13, 1954.

Stephen R. Wilson

Stephen R. Wilson

Enclosure

S. R. Wilson September 15, 1954

M. H. Howes

Docket No. DMEA-3235 (Tungsten), Contract Idm-2608, Willden and Petty, Millard County, Utah. Progress report for August 1954

The Willden and Petty property was inspected September 9, 1954. It is verified that 133.9 feet of progress in diamond drilling during August 1954, as reported on form MF-104A, is correct, and that the work was performed in accordance with the contract.

The drilling project was started August 19, 1954. Hole No. 2 was chosen to be the first hole drilled. It is being driven N. 65° E. at an inclination of minus 50°, and so far the entire hole is in limestone, with little or no scheelite mineralization. At 119.1 feet a fault zone was entered, which was continuing at the end of the month. The hole was cemented several times, in the badly shattered fault zone, in attempts to stop the loss of drilling water.

The operator's narrative report is considered to be adequate.

It is recommended that the Government reimburse the operator $748.17, which is 75 percent of the allowable cost for August of $997.56 for 133.9 feet at $7.45 per foot.

M. H. Howes

M. H. Howes

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.4
Approval expires 6-30-53.

Defense Minerals Administration
RECEIVED
SEP 27 1954

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of August 1954 Docket No. DMEA 3235 Contract No. Idm-E698
Operator's Name Willden and Petty Minerals Tungsten
Address Delta, Utah
Contract Amount, $ 6,160.00 Government Participation: 75 % Amount, $ 4,620.00

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts: Diamond Drilling	$997.56	None	$997.56			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	$997.56		$997.56	997.56		997.56

I certify that the above bill is correct and just and that payment therefor has not been received.
Date 9-8-54 *Payee Willden and Petty
Per Earl Willden Title Partner

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

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

(Instructions on reverse)

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

$ 748.17

Signature Randell R. Cooper
(Authorized Certifying Officer)

Date 9-17-54 Vou. No. DMA-55-22
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E698 in accordance with the terms of the contract.

Signature M. H. Howes SPCW Title Mining Engineer Date Sept. 15, 1954

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: R.D.B.

Signature John T. Law for W. H. Ray Title Executive Officer Date SEP 17 1954

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.1
Approval expires 6-30-53.

U. S. RECEIVED DEPARTMENT OF THE INTERIOR Defense Minerals Administration OFFICE Salt Lake City, Utah SEP 27 1954

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of August 1954 Docket No. DMEA 3235 Contract No. Idm-E698
Operator's Name Willden and Petty Minerals Tungsten
Address Delta, Utah

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	1 ft.	$997.56	133.9	$997.56	133.9	$7.45	800	$7.45
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		$997.56	133.9	$997.56				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		$997.56	133.9	$997.56				$6,160.00

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

Date 9-7-54 Operator Willden and Petty

Per Earl Willden Title Partner

REMARKS:

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

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

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

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

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

GPO 83-38475

NARRATIVE REPORT FOR MONTH OF AUGUST, 1954

Willden and Petty
Delta, Utah

Drilling project was started August 19, 1954 and hole #3 was chosen for the first drilling hole.

133.9 ft. advance was made in this hole during the month, which was in lime the entire distance with little or no mineralization showing. At approximately 120 feet a fault was encountered which was badly shattered and the water was lost.

400

MAY 21 1956

Willden and Petty
Delta, Utah

Re: Docket No. DMEA 3235 - Tungsten
Brown Queen Claims
Millard County, Utah
Contract No. Ida-E696

Gentlemen:

This is with reference to the subject contract between you and the Government.

It is not our intention to issue a certification of discovery or development which would create a lien against the subject property. We are, therefore, closing our books and records with respect to this project. Your attention is called, however, to the provisions of the contract which require the operator to keep and preserve certain records for the period indicated.

We regret that the work performed did not result in a discovery or development. Your participation in the exploration program, however, is sincerely appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

TLChapman/fec
5-7-56
cc to: Docket
Code 400
Admr. Read. File
Operating Comm.
FT. REG. III
R. W. Helliday, USBM
T. H. Kiilsgaard, USGS

May 7, 1956

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Memorandum of Non-discovery
Docket No. DMEA 3235 - Tungsten
Willden and Petty
Brown Queen Claims
Millard County, Utah
Contract No. Idm-E698

This Division hereby concludes that the work done on the subject property, as described under the contract, has resulted in no discovery or development from which commercial production may be made.

Operator: Willden and Petty (Earl B. Willden, Al Willden, Lionel A. Petty) Delta, Utah.

Property: The property included in this contract is owned by the Operators and is located in the southeast part of T. 18, S., R. 14, W., S. L. B. & M. (unsurveyed) Millard County, Utah, and is recorded as follows:

Claim Name	Book No.	Page No.
Brown Queen	12 of M.L.	476
Brown Queen, No. 1	12 of M.L.	484
Brown Queen, No. 2	12 of M.L.	484
Brown Queen, No. 3	12 of M.L.	485
Brown Queen, No. 4	12 of M.L.	485
Brown Queen, No. 5	12 of M.L.	494
Brown Queen, No. 6	12 of M.L.	495
Brown Queen, No. 7	13 of M.L.	258

Contract: Effective August 9, 1954, a contract was prepared to drill three diamond drill holes not to exceed a total depth of 800 feet to explore the tactite zone in the vicinity of the intrusives, at an estimated cost of $6,160.00, Government participation, 75 percent, $4,620.00. Three amendments were written; the first made a change in assaying costs per sample,

and No. 2 allowed a recoup and changed location of diamond drill holes and number of holes without change in cost. No. 3 changed royalty payments to 11 years.

Work Completed: Four diamond drill holes were completed for a total of 780 feet, with a total cost for the project of $5,811.00, Government participation $4,358.25.

Geology: The Brown Queen mine lies in a section more than 10,000 feet thick of Cambrian quartzite, limestone and shale. Granitic stocks have intruded the limestones and some thin beds of tactite have been formed. Tungsten mineralization in the form of scheelite occurs in the thin sporadic tactites in thin veinlets, pods, lenses and disseminations. Scheelite emplacements apparently have been highly selective, with the result that large parts of the tactite are barren.

History: The tungsten deposits of the Brown Queen claims were discovered by tracing scheelite float with ultraviolet light. The claims were located in 1951 by the present owners who prospected the area with a 40 feet inclined shaft, a 5 foot pit, a 70 foot adit and approximately 400 square feet of open cuts. They mined and shipped about 260 tons of ore averaging 2 percent WO_3.

Ore Values & Tonnage: No ore of commercial grade was found or indicated during the DMEA program. The work showed that there was little probability of finding any significant tonnage of ore in the area.

Comments: The examining staffs of the Geological Survey and the Bureau of Mines, conclude that there is little possibility of finding any significant tonnage of tungsten ores and recommend non-certification. The Field Team, and the Commodity [redacted] of the Geological Survey and the Bureau of Mines concur in these recommendations.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

TLChapman/foc
5/7/56
cc to: Docket
Code 400
Admr. Read. File
Oper. Comm.

IN REPLY REFER TO:

400

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

May 17, 1956

Re: DMEA 3235, Idm-3698 - Tungsten
Willden and Petty
Brown Queen Claims
Millard County, Utah
Est. Application: $20,095.27
Est. Recommended: $6,160.00

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of Final Field Team report.

The applicants requested assistance in an exploratory work program, the cost of which was estimated as $20,095.27.

The examiners recommended a drilling program consisting of 800 feet of drilling, the estimated cost of which was $6,160.00, and of which $3,811.00 was expended. The work was planned to prospect for 1- to 3-foot scheelite-bearing tabular tactite masses in limestone. The tactitic alteration appears to favor two beds of the limestone. As for the immediate area no masses of granite or similar rocks, commonly associated with tactitic alteration, have been found.

The drilling pattern apparently was based on the assumption that an igneous rock is accountable for the tactite and might be reached by angle and vertical drilling and no attempt was made to extend, by 'close in' drilling, the remnants of the partially eroded and mined small ore bodies.

The drilling for the relatively long projections of the small ore masses, holes 2A and 2B, showed specks of scheelite and powellite in recrystallized limestone which may be the down dip extensions of the beds which where mined are altered to tactite.

Holes 1 and 3, down holes from a drill site 30 feet below the outcrops, intersected beds of limestone of various degrees of purity and alteration, containing specks of powellite and scheelite. The mineralization is thus shown to be widespread but generally very low grade.

The examiners conclude:

> No additional exploration of the Rosen Queen property, with Government assistance, appears warranted at this time. If the property owners are able to obtain new data tending to make other target areas (appear) favorable for tungsten mineralization, consideration should then be given for further exploration. Inasmuch as no commercial ore was discovered on the DMEA project work, and because the estimated reserves are small, no certification of discovery is recommended.

Reference to the map, Fig. 3A of the Final Report, on which are shown the locations and assays of samples taken, suggests there are four faces at which mining might be continued. The places are where samples 1, 2, 5, and 7-8 were taken.

I agree with the conclusions of the examiners and concur with the recommendation of the examiners and the Field Team that no certification of discovery be issued.

N. E. Nelson

N. E. Nelson

NENelson:jeh
5/17/56
cc: Director's reading 4212
Branch reading 4212
DMEA (3)
Docket file
Robert Holliday, 3517 Int.

RECEIVED
MAY 17 1956

400

RECEIVED
MAY 8 - 1956

May 5, 1956

WSM

Memorandum

To: W. S. Martin, Chief, Iron and Ferroalloys Division-DMEA
Through: Chief, Branch of Ferrous Metals & Ferroalloys

From: R. W. Holliday, Commodity Specialist, Branch of Ferrous Metals & Ferroalloys

Subject: Review of Final Report
Docket No. 3235
Brown Queen Claims
Millard County, Utah
Earl B. Willden and Lionel A. Petty
Delta, Utah

Subject report recommends that no certification of discovery be issued and that no additional Government participation be considered unless the property owners are able to obtain favorable additional data.

I concur with this recommendation.

R. W. Holliday

RECEIVED
MAY 8 - 1956

May 5, 1956

Memorandum

To: W. S. Martin, Chief, Iron and Ferroalloys Division-DMEA
Through: Chief, Branch of Ferrous Metals & Ferroalloys

From: R. W. Holliday, Commodity Specialist, Branch of Ferrous Metals & Ferroalloys

Subject: Review of Final Report
Docket No. 3235
Brown Queen Claims
Millard County, Utah
Earl B. Willden and Lionel A. Petty
Delta, Utah

Subject report recommends that no certification of discovery be issued and that no additional Government participation be considered unless the property owners are able to obtain favorable additional data.

I concur with this recommendation.

R. W. Holliday

RECEIVED
MAY 8 - 1956

May 5, 1956

Memorandum

To: W. S. Martin, Chief, Iron and Ferroalloys Division-SMFA
Through: Chief, Branch of Ferrous Metals & Ferroalloys

From: R. W. Holliday, Commodity Specialist, Branch of Ferrous Metals & Ferroalloys

Subject: Review of Final Report
Docket No. 3235
Brown Queen Claims
Millard County, Utah
Earl B. Willden and Lionel A. Petty
Delta, Utah

Subject report recommends that no certification of discovery be issued and that no additional Government participation be considered unless the property owners are able to obtain favorable additional data.

I concur with this recommendation.

R. W. Holliday

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APR 23 1956

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

224 New Customhouse
Denver 2, Colorado

April 18, 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA-3235 (Tungsten), Contract Idm-E698, Willden and Petty
Millard County, Utah - Final Report

Enclosed are the original and three copies of a joint engineering and geologic report dated April 12, 1956, from M. H. Howes, Mining Engineer, Bureau of Mines, and R. W. Osterstock, Geologist, Geological Survey, and transmittal thereof from Stephen R. Wilson and R. W. Osterstock dated April 13, 1956, pertaining to the work completed under Contract Idm-E698.

The original and one copy of the Operator's final report were forwarded to the Chairman, Operating Committee, DMEA, by memorandum of February 13, 1956.

Final payment to the Operator was processed by this office September 15, 1955, in conformance with the Report of Review of contract expenditures by the Contract Administration and Audit Division dated September 13, 1955.

The exploration work consisted of 780 feet of diamond drilling in four holes at a total accepted cost of $5,811.00, in which the Government participated to the extent of 75%, or an amount of $4,358.25.

The exploration work did not result in a significant discovery or development of tungsten ore. Therefore, no certification of such is recommended.

DMEA Field Team, Region III

By W. M. Traver
W. M. Traver

E. N. Harshman
E. N. Harshman

Reviewed by
DMEA OPERATING COMMITTEE
4-25-56
(date)

Dwight Fear
Final Report

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

MINERAL DEPOSITS
DMEA
RECEIVED
APR 16 1956
GEOLOGICAL SURVEY
DENVER, COLORADO

DMEA
Date Rec'd.
APR 18 1956
BUREAU OF MINES
Denver, Colorado

April 13, 1956

RECEIVED
APR 23 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: Stephen R. Wilson
R. W. Osterstock

Subject: Docket No. DMEA-1225 (Tungsten), Contract Idm-[illegible], Willden and Petty, (Brown Queen claims), Millard County, Utah

Enclosed are the original and eight copies of a final engineering and geologic report covering all work completed under the subject contract. The authors of the report are N. H. Rowes and R. W. Osterstock.

Exploration completed on the property consisted of 750 feet of diamond drilling in four holes. All holes were drilled from the surface. No ore was discovered by the DMEA work and no Certification of Discovery or Development is recommended.

Stephen R. Wilson
Stephen R. Wilson
Supervising Mining Engineer

R.W. Osterstock
R. W. Osterstock
Geologist

Enclosure

cc: J. B. Clemmer

Reviewed by
DMEA OPERATING COMMITTEE
4-25-56
(date)

WILLEMS AND PETTY
BROWN QUEEN CLAIMS
MILLARD COUNTY, UTAH
DMEA-3235, Idm-2698
Tungsten

Final Engineering and Geologic Report

by M. H. Howes
Mining Engineer
Bureau of Mines

R. W. Ostenstock
Geologist
Geological Survey

April 12, 1956

Reviewed by
DMEA OPERATING COMMITTEE
4-25-56
(date)

WILLDEN AND PETTY
BROWN QUEEN CLAIMS
MILLARD COUNTY, UTAH

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ILLUSTRATIONS

Fig. 1 Location map, Willden and Petty, Brown Queen claims, Millard County, Utah
Fig. 2 Topographic map
Fig. 2A Claim map
Fig. 3 Geologic plan of underground workings
Fig. 3A Plan of underground workings, showing sample locations
Fig. 4 Vertical projection of diamond drill holes

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INTRODUCTION

Application was made January 3, 1954, under docket DMEA-3235, by the partnership of Willden and Petty, for Government aid on a tungsten exploratory project estimated to cost $20,095.27. The applicant proposed a project consisting of 300 feet of shaft sinking, 100 feet of drifting, and 600 feet of diamond drilling to search for tungsten ores on the Brown Queen group of claims, Millard County, Utah.

The property was examined in April 1954 by M. N. Howes, Bureau of Mines, and in May 1954 by C. G. Tillman and R. W. Osterstock, Geological Survey, to appraise the feasibility of the project.

Because of strong showings of scheelite-bearing tactite in underground workings on the property, the field examiners recommended that the Government approve an exploratory drilling program. DMEA contract Idm-E698 was signed August 9, 1954, allowing 800 feet of diamond core drilling at a total cost of $6,160.

LOCATION AND ACCESSIBILITY

The Brown Queen claims are situated on the east side of Bird Canyon, in the rugged terrain of the House Range, 2 miles south of Marjum Pass and about three-fourths of a mile north of Amasa Valley, Millard County, Utah. The area lies in the southeast part of T. 18 S., R. 14 W., S.L.B. and M. (unsurveyed). Delta, Utah, on the main line of the Union Pacific Railroad, is approximately 50 miles east of the property. Delta is the nearest rail shipping point and source of manpower and supplies (fig. 1).

The climate is arid. Summers and hot and dry and winters are cold, with moderate snow.

PROPERTY

Earl B. Willden, Al Willden, and Lionel A. Petty, all of Delta, Utah, doing business as Willden and Petty, a partnership, own the following eight unpatented lode mining claims (fig. 2A), which are recorded at the Millard County Courthouse, Fillmore, Utah:

Claim	Book	Page
Brown Queen	12 of M.L.	476
" " No. 1	"	484
" " No. 2	"	484
" " No. 3	"	485
" " No. 4	"	485
" " No. 5	"	494
" " No. 6	"	495
" " No. 7	13 of M.L.	298

HISTORY AND PRODUCTION

The tungsten deposit on the Brown Queen claims was discovered by tracing scheelite float to the outcrop, by means of ultraviolet light. Lode claims were located by the present owners in the spring of 1951, after which the mineralization was followed by sinking a 40-foot flat incline, and a 5-foot shaft, and driving a 70-foot irregular adit. Approximately 400 square feet of open cuts were also excavated (figs. 3 and 3A).

No production was recorded from the immediate vicinity of the Brown Queen mine prior to claim staking by the operators. The owners reported in their application that as a result of development operations about 260 tons of ore averaging 2 percent WO_3 was produced and shipped. No ore has been shipped from the Brown Queen mine since the date of the application.

Other tungsten mining in the region has been confined in a large sense to that area near the crest of the intrusive mass. A few gold prospects are located near the mouth of Bird Canyon about three-fourths of a mile north of the Brown Queen claims. It is doubtful that substantial production has resulted from these workings.

GEOLOGY

The Brown Queen mine, near the head of north-draining Bird Canyon, high on the east flank of the House Range, lies in an extremely thick (more than 10,000 feet) Cambrian section which includes quartzite, shale, and limestone in the lower quarter and predominantly limestone in the upper three quarters. The mine is located in the "Orr" and "Weeks" formation which H. E. Wheeler (Cambrian sequence of the House Range, Guidebook to the Geology of Utah, No. 6, 1951) has grouped together because of their close similarity and intergradational character. These strata are mostly medium gray, thick to thin bedded arenaceous limestones and shales.

The entire stratigraphic sequence forms a typical basin-range fault block known as the House Range. The strata have been intruded by an irregular granitic stock of Tertiary age which, with its gentle doming action, has produced a system of quaqquaversal dips in the intruded sediments.

The nearest known exposed contact between the granitic rock and the sediments is at the northern edge of Amasa Valley approximately three-fourths of a mile south of the Brown Queen area. The operators

report having located several small dike-like bodies of granitic rock in the hills surrounding the mine. Such dikes are likely offshoots from the main intrusive mass; however they were not observed in the field.

The strata exposed adjacent to the Brown Queen claims exhibit a northerly strike and gentle, easterly dip. This attitude is characteristic of the basin and range fault block mountains. The attitude of the sediments further implies the lack of doming influence which might be attributed to the granitic stock. The rocks are essentially undisturbed by minor faults.

Where the granitic stock is in contact with the limestone, particularly near the crest of the intrusion, a typical suite of calc-silicate minerals has been developed in the limestone. This tactitic material shows a distinct preference for certain beds. It is noteworthy that the amount of tactitization is inversely proportional to the distance from the intrusive contact; in addition the development of tactite is a much more selective process away from the intrusion.

Tungsten mineralization at the Brown Queen property is confined to tactite zones which are sporadically developed in susceptible limestone beds. Tungsten in the form of scheelite is present as thin veinlets and dissemination in the tactite as well as in small higher grade pods and lenses. The tactite zones following the bedding form a section composed of "layers" of dark red-brown to green calc-silicates separated by bleached and commonly recrystallized beds of limestone, some of which contain considerable tremolite.

The tactite "beds" are generally less than 2 feet thick and average perhaps 8 inches. In the immediate vicinity of the mine workings tactite constitutes no more than 20 percent of the exposed section; upward from the mine the tactitic zones occur even less frequently and are generally thinner.

Three gentle southeasterly plunging anticlinal flexures were noted in the southernmost mine workings. These minor structures are superimposed on the north-striking, east-dipping beds. It is doubtful that the folds exercise any degree of ore control as there is no marked increase in either the grade or size of the scheelite-bearing bodies on or near the flexures. Only one fault is noted in the mine area; this westerly striking, northerly dipping structure occurs near the portal of the northernmost adit. The fault, with apparent normal movement, has dropped the beds and tactite zone about five feet on the north. The small amount of widely scattered scheelite grains which occur in the fault is probably drag along the fault. The only remaining feature which may, in a sense, be termed a structural control is the attitude of the bedding within which the deposits have formed. The persistent northerly strike and gentle easterly dip of the enclosing beds is a projectable feature. Tactitic development within certain of the more reactive limestone beds, were the process itself more persistent, should also lend itself to projection. A fuller discussion of this hypothetical ore control will be found under the section concerning the results of the completed exploratory program.

Scheelite is the only tungsten mineral of economic significance. The ultraviolet light indicates the presence of small amounts of powellite in association with the scheelite. These minerals occur as pods, lenses, veinlets and widespread disseminations in the tactitic material. In general, each of the above-noted types is composed of minute concentrations of fine-grained scheelite and minor powellite, classification as to type being dependent upon the overall form of the ore mineral concentration. All of the mineralization of possible economic interest has been confined to the tactite zones which are localized by bedding in the original limestones. A few isolated grains of scheelite and powellite noted in limestone in the drill cores appear to have no significance. The gangue minerals are principally those of the tactite zones; garnet, diopside, epidote, clinozoisite, manganosiderite (?), calcite, and some quartz both as a clear-to-smoky crystalline type and fine-grained, red-to-gray chalcedonic type. Because of the less than minable thickness of the average scheelite-bearing tactite bodies, it is also necessary to include the bleached and recrystallized limestone country rock as gangue.

It is of major importance to take cognizance of the fact that, although a particular zone of tactite may appear to be persistent, this feature in nowise affects the likelihood that the zone will contain scheelite. The emplacement of scheelite within these tactite zones was apparently a highly selective process with the consequent result that some, if not most of the zones, are entirely barren of tungsten mineralization.

The apparent selectivity of the process of ore mineralization leads to the assumption that the deposition of most of the ore post-dates the development of the tactite, however the extremely intimate relationship between the scheelite and the tactite indicates contemporaneous deposition.

In their application, the owners of the Brown Queen property estimated that 500 tons of ore averaging 2 percent WO_3 was "in sight." There can be no question that this estimate is high both in tonnage and grade and certainly is presumptuous in classification.

In the northernmost workings of the Brown Queen mine, the 40-foot adit shows some tungsten mineralization on both walls throughout its entire length. The limiting feature is the thickness of the mineralized zone which in places is less than 2 inches. In the southernmost operation which is serviced by arcuate workings, open at both ends, there is tungsten mineralization over a distance of about 60 feet along the strike of the beds. As in the northern workings, this mineralization exhibits rapid pinching and swelling. At no point in any of the underground openings does the thickness of an individual ore "bed" exceed 2 feet. Continued mining operations will of necessity be highly selective with the result that perhaps one-half of the total mineralized footage may be exploited by work beyond the exposure. Total mineralized footage is estimated at 85 for the northern adit (40 + 40 walls + 5 at face) and 60 for the southernmost workings, or 145 feet; of this figure about 75 feet may be subject to continued mining. Observation of the

worked out portions of the mine leads to the conclusion that minable width within this 75 feet may be safely projected no more than 10 feet. It is estimated that the average thickness within this postulated reserve block will be 1 foot. The reserve "block" is therefore estimated to contain 750 cubic feet or about 75 tons. The grade of this ore on the basis of past production will be from 1 to 2 percent. This ore reserve must of necessity be classified as inferred.

DESCRIPTION OF THE CONTRACT WORK

In setting up the exploratory program at the Brown Queen property it was presumed that the scheelite-bearing tactite beds are contact phenomena which would not be conspicuous at great distance from the contact. It was recognized that certain rock types (probably those most nearly approaching the composition of tactite and consequently requiring less change by introduction and subtraction of material) would be more susceptible and might therefore contain tactite at greater distances from the intrusive mass. Information leading to the above hypotheses was gained from observation of the major tungsten-producing properties in the area near the head of Anness Valley. In this area, the most persistent tactite zones have been developed in the limestone units immediately in contact with the intrusion. In addition, these same tactite beds carry the bulk of the tungsten mineralization. Tactitization away from the contact was found to be less persistent and more selective.

Comparison of the Brown Queen area with the Amassa Valley deposits therefore indicates that the Brown Queen area must be higher in the section relative to the position of the intrusive mass. Thus penetration of the section was expected to reveal an increasing frequency of scheelite-bearing tactite beds and ultimately an intrusive mass.

The applicant proposed to sink a 300-foot shaft (deepening the present 5-foot shaft), to drift 100 feet, and to core drill 600 feet. This plan was predicated on the assumption that the small east-striking, steeply north-dipping fault near the northern adit, being the only near-vertical structure in the mine area, must have served as an access channelway for rising tungsten-rich solutions. Examination of this structure indicates that it is far too minor to have affected any substantial degree of ore localization had it been pre-mineral.

An alternate exploratory program consisting of three diamond drill holes was mutually agreeable to the parties concerned. Upon the completion of two of the holes with negative results, it was decided that continued exploration should be confined to the down-dip projections of the known ore bodies. Consequently the contract was amended to permit drilling two holes behind the known ore bodies (fig. 2).

Contract Idm-8698 was signed August 9, 1954. The contract states that the project will start within 30 days and be completed within a period of 6 months from the effective date. Description of the work, under exhibit "A" of the contract, is as follows:

Diamond drill three holes, fanned out from a point in the bottom of the canyon, approximately 30 feet N. 35° E. of the discovery monument of the Brown Queen claim to explore the tactite zones in the vicinity of the granite stock intrusive for occurrences of scheelite and other tungsten minerals. Location of drill holes are shown on attached maps.

The approximate attitude and maximum depth of drill holes are to be as follows:1/

Hole No.	Inclination	Direction	Maximum Depth
1	-40°	West	300 feet
2	-50°	South	250 feet
3	-60°	N. 65° E.	250 feet

Total Maximum Footage ———— 800 feet.

All core is to be split and one-half stored in suitable core boxes and retained for the use of the government. The mineralized portions of the remaining core are to be assayed for WO_3 content.

A maximum of 800 feet of diamond core drilling at $7.45 per foot, including all costs for supervision, engineering, labor, equipment, supplies, core boxes and other costs incurred in obtaining and storing the core — $5,960.00 2/

Assaying as required to a maximum of $200 ———— 200.00 3/

Total Estimated Cost ———— $6,160.00

Government Participation at 75 percent ———— $4,620.00

1/ In the event intrusive rocks are encountered in the drill holes before their maximum footages are completed, the drill holes should be continued no more than 25 feet in the intrusives in order to insure that the main intrusive body is being penetrated rather than a dike or sill.

2/ Reimbursement for diamond drilling will be on the basis of holes completed to their objectives and charges must be supported by a certified copy of the drill logs of the hole or holes for which reimbursement is claimed.

3/ Requests for the reimbursement of the Government's portion of assaying charges is to be supported by suitable copies of assay invoices showing charges and results.

Changes to the contract were made by three amendments.

Amendment No. 1, effective as of the date of the contract, is as follows:

> Referring to Exhibit "A", caption "Estimated Costs of the Project" delete the following: "Assaying as required to a maximum of $200.00" and in lieu thereof substitute the following: "A maximum of 40 tungsten assays at $5.00 each." Delete footnote "2/" in its entirety and in lieu thereof substitute the following: "2/ Claims for reimbursement for analysis charges are to be supported with a copy of assay return showing results".

Amendment No. 2, effective February 9, 1955, is as follows:

> 1. Referring to Exhibit "A", heading "Description of the Work", details of holes to be drilled in lieu of Hole No. 2 to its maximum depth of 250 feet at the location specified therefor, instead two holes will be drilled to a maximum depth of 125 feet each at the location shown on the map (fig. 3). One hole will be drilled vertical and the other hole will be drilled on a bearing of N. 30° E. inclined at an angle of 60°.
>
> 2. It is agreed that work under the Contract shall be recessed from on or about November 10, 1954, and will be resumed on or before May 15, 1955.
>
> 3. Referring to "Article 3" of the contract, following the words "and shall bring the project to completion within a period of" delete "six (6) months" and in lieu thereof substitute "one (1) year".

Amendment No. 3, effective May 15, 1955, is as follows:

> Referring to Amendment No. 2, dated April 14, 1955, item "2" change the date "May 15, 1955" to read "June 15, 1955".
>
> Referring to "Annex I", attached to the contract, which is submitted in lieu of Article 6 of the contract form, further referring to "Annex I" item "b.(2)", "for a period of eleven years" is substituted for "for a period of ten years".

The drilling project was started August 19, 1954, on contract hole No. 3. This hole was drilled N. 65° E., at an inclination of

minus 60° and was completed to a total depth of 250.8 feet September 14, 1954, 250 feet of which was allowed for payment. Contract hole No. 1 was started September 16, 1954, west, at an inclination of minus 60°, and was completed to a total depth of 300 feet prior to November 10, 1954 (fig. 4).

Neither of these holes revealed the anticipated increasing frequency of occurrence of the tactite zones, nor is there any indication of increasing proximity to an intrusive mass. These discouraging results necessitated a review of the exploratory program which resulted in the decision to explore for the down dip projection of the known ore bodies along what was presumed to be a reasonably persistent tactitized limestone bed. Consequently, contract hole No. 2 to be drilled south, minus 50°, 250 feet, was eliminated and two 125-foot holes were substituted, No. 2A drilled vertically and No. 2B drilled N. 30° E. at minus 40°, through the projected scheelite-bearing zones.

None of the drill holes encountered commercial amounts of tungsten mineralization. The first two holes did not reveal the expected increase in the amount of tactitization and therefore tend to negate the hypothesis that an intrusive mass exists at depth. The two shorter holes failed to reveal the tungsten-bearing tactite zones as projected from the outcrop, thus indicating the lack of persistence of these zones.

Perhaps the only real value of the completed exploratory program is illustration of the lack of persistence and extreme selectivity of the development of scheelite-bearing tactites on the fringe area of an intrusive mass. It no longer seems likely that a hidden intrusive mass

underlies the Brown Queen area. With such ephemeral controls as slight changes in the original composition of the sedimentary rock, no ore targets are presented and consequently no methodical approach to exploration is possible.

EXPENDITURES

The project was terminated after completion of 780 feet of the allowable amount of 800 feet of diamond core drilling at $7.45 per foot for a total cost of $5,811. This cost was verified in a Report of Review by Donald T. Finch, auditor, Contract administration and Audit Division. Total cost to the Government at 75 percent participation is $4,358.25.

CONCLUSIONS AND RECOMMENDATIONS

It is known that the tungsten mineralization on the Brown Queen claims is confined to tactitic material which has developed along certain favorable bedding horizons. It was demonstrated by the exploratory program that the susceptibility of the bedding planes to tactitization must vary considerably, inasmuch as known tactite "beds" are not persistent features and are not subject to projection. Observation of other scheelite-producing properties in the region leads to the conclusion that the most persistent and best mineralized zones are those which formed at or near the intrusive contact where the intensity of the attending physico-chemical processes was sufficient to lessen the degree of selectivity so apparent away from the contact.

No additional exploration of the Brown Queen property, with Government assistance, appears warranted at this time. If the property owners are able to obtain new data tending to make other target areas favorable for tungsten mineralization, consideration should then be given for further exploration. Inasmuch as no commercial ore was discovered on the BMA project work, and because the estimated reserves are small, no certification of discovery is recommended.

APPENDIX

Logs of Diamond Drill Holes

Hole No. 3

Dip: -65° Bearing: N. 65° E. Depth: 250 feet

0 - 10	White, crystalline limestone
10 - 23.6	White, crystalline limestone; few thin, impure shaly beds.
23.6 - 34.5	White, crystalline limestone; dip averages 45° with core.
34.5 - 45.7	White, crystalline limestone, some impure beds, some calcite veinlets, some quartz; speck of scheelite in quartz at 44'.
45.7 - 64.5	White and gray, impure, thin-bedded limestone.
66.5 - 88.9	White, gray and brown, impure, thin-bedded limestone, some crystalline quartz at 72' in broken breccia zone; speck of scheelite at 80'.
88.9 - 98.5	White and gray, impure, thin-bedded limestone.
98.5 - 108	White and gray, impure, thin-bedded limestone; core at 50° angle with beds; speck scheelite at 99.5'.
108 - 117.9	White and gray, impure, thin-bedded limestone; few thin, impure bands of lime silicates.
117.9 - 141.2	White and gray, impure, thin-bedded limestone; speck of scheelite at 139'.
141.2 - 151.6	White and gray, impure, thin-bedded limestone; some bleaching.
151.6 - 162.8	White and gray, impure, thin-bedded limestone and impure metamorphic, shaly material.
162.8 - 184.8	White and gray, impure, thin-bedded limestone; speck of scheelite at 186'.
184.8 - 219	White and gray, impure, thin-bedded limestone; some yellow, sporadic flecks of powellite; speck of scheelite at 199'; rubble zone at 221'.
219 - 250'	Mostly pale gray to white, thin-bedded, recrystalline limestone bed averaging 45° angle with core.

Hole No. 1

Dip: -65° Bearing: West Depth: 300 feet

0 - 19.6 Pale gray and white, recrystalline limestone.

19.6 - 39.4 Mostly white limestone; few thin calcite stringers; bed 45° angle with core.

39.4 - 48.5 Mostly white, recrystalline limestone; vuggy open spaces; impure beds; calcite stringers

48.5 - 68.8 Mostly white, recrystalline limestone; regular bedded; few impure bands.

68.8 - 77 Light gray to white, recrystalline limestone; very uniform.

77 - 86.1 Light gray to white, recrystalline limestone, with few impure bands; bed average 50° angle with core.

86.1 - 108.6 Light gray to white, recrystalline limestone, but getting grayer, few quartz lined vugs; broken zone at 100'.

108.6 - 159 Gray-brown and white, thin-bedded, recrystalline limestone; few dark gray and brown, impure shaly bands; speck of sphalerite at 135'; broken zone at 147'-148'; healed with quartz and calcite.

159 - 197.7 Gray-blue limestone, few white and dark gray bands; core bed 60°. Pseudolife in banded veinlet 1/4" thick at 170.5', some bleaching. Quartz and calcite crystals on bedding planes at 184'-188'.

197.7 - 217 Regular gray, gray-blue, crystalline limestone, some bleaching; few thin, impure beds; bedding 50° angle with core at 206.8'.

217 - 236 Mostly gray, crystalline limestone with some bleaching; some brown, impure bands near bottom of interval.

236 - 299.1 Broken core, mostly brown and white, impure limestone.

299.1 - 300 Much brown, impure limestone; broken core; white clay for last 4' of hole.

Hole No. 24

Dip: Vertical Depth: 125 feet

0 — 24 Bleached, recrystalline limestone.

24 - 36 Broken and sealed limestone.

36 - 40 Bleached, recrystalline limestone.

40 - 55 Broken, recrystallized limestone, partially recemented, some open spaces lined with aragonite, few inches clay gouge.

55 - 68 Bleached, thin-bedded, recrystalline limestone.

68 - 89 Bleached, recrystalline limestone; few thin argillite bands; few specks powellite at 69', thin 1/4" "band" of powellite, nearly vertical at 71'; few coarse grains scheelite at 80'.

89 - 125 Tight, recemented breccias; few thin 1'-2' unbrecciated bands; cementing agent reddish; some silicification. Thin vertical band powellite 1/4" at 89'; thin vertical band powellite and specks at 90.5'; extremely brecciated at 103'-111'.

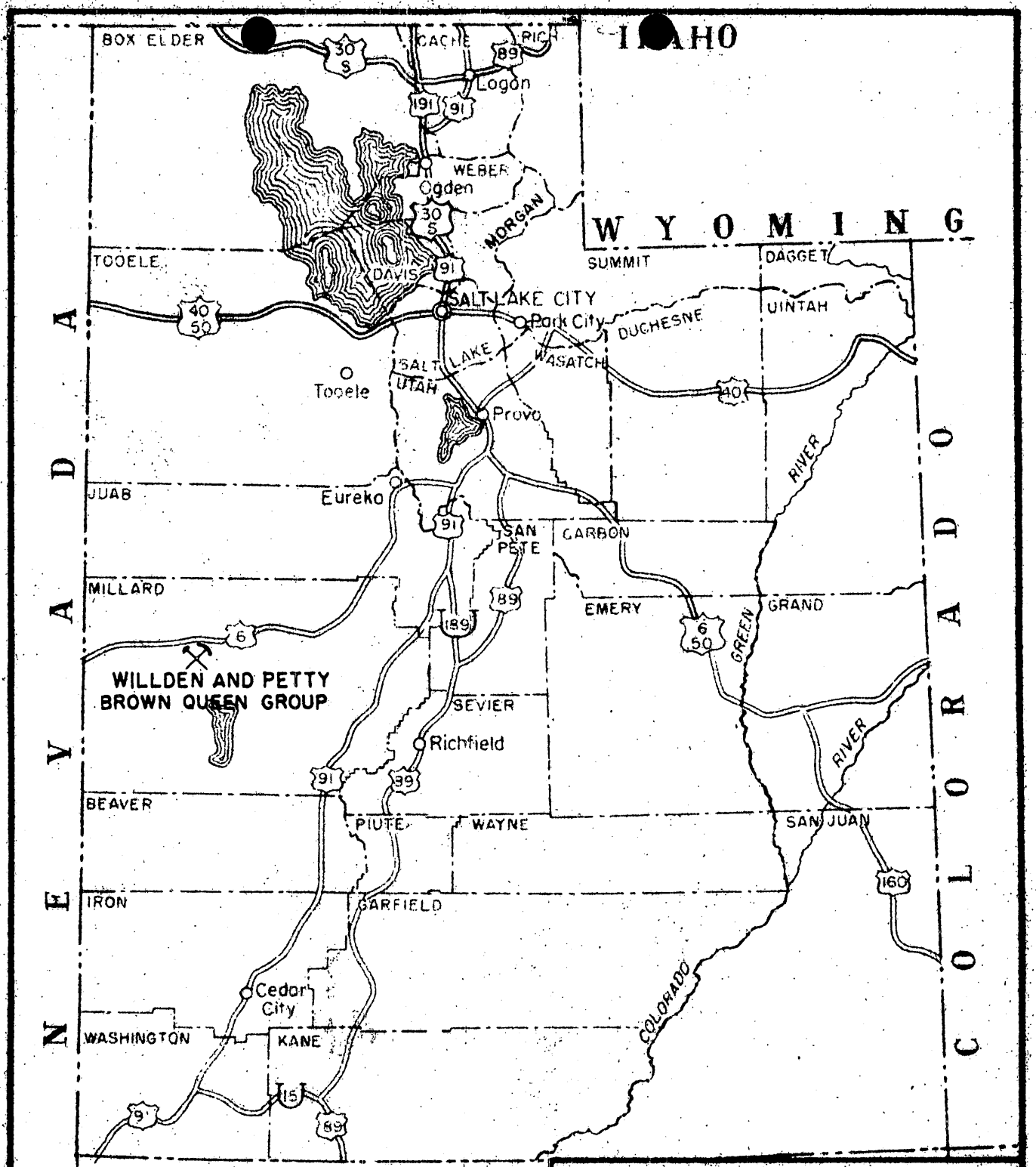
Hole No. 28

Dip: -60° Bearing: N. 30° E. Depth: 105 feet

0 - 50 White and light gray, recrystalline limestone, bleached, partially silicified; few thin dark argillite bands. Specks of scheelite and powellite at 25'; bedding makes 50° angle with core at 30'; specks of scheelite and powellite 34'-36'; bedding makes 35° angle with core at 37'; specks of scheelite and powellite 39'-46'.

50 - 58 Dark argillite bands comprise 30 percent of core; specks of scheelite and powellite at 51'.

58 - 105 White, gray and tan, recrystalline limestone; some silicification; minor breccia zone recemented on bottom section; more massive at 58'; bedding makes 40° angle with core at 65'; specks of scheelite and powellite at 68.2'; bedding makes 45° angle with core at 70'; specks of scheelite and powellite at 70.1'-86'; bedding makes 45° angle with core 91'-95'; specks of scheelite and powellite at 105'.



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 1 DMEA Docket No. 3235

Location Map

WILLDEN AND PETTY
BROWN QUEEN GROUP

MILLARD COUNTY, UTAH

ENGINEER *M. H. Howes*	DATE: APRIL 9, 1955
TRACED: APR., 1955; A.P.T.S.	700 - 195 - G
CHECKED:	

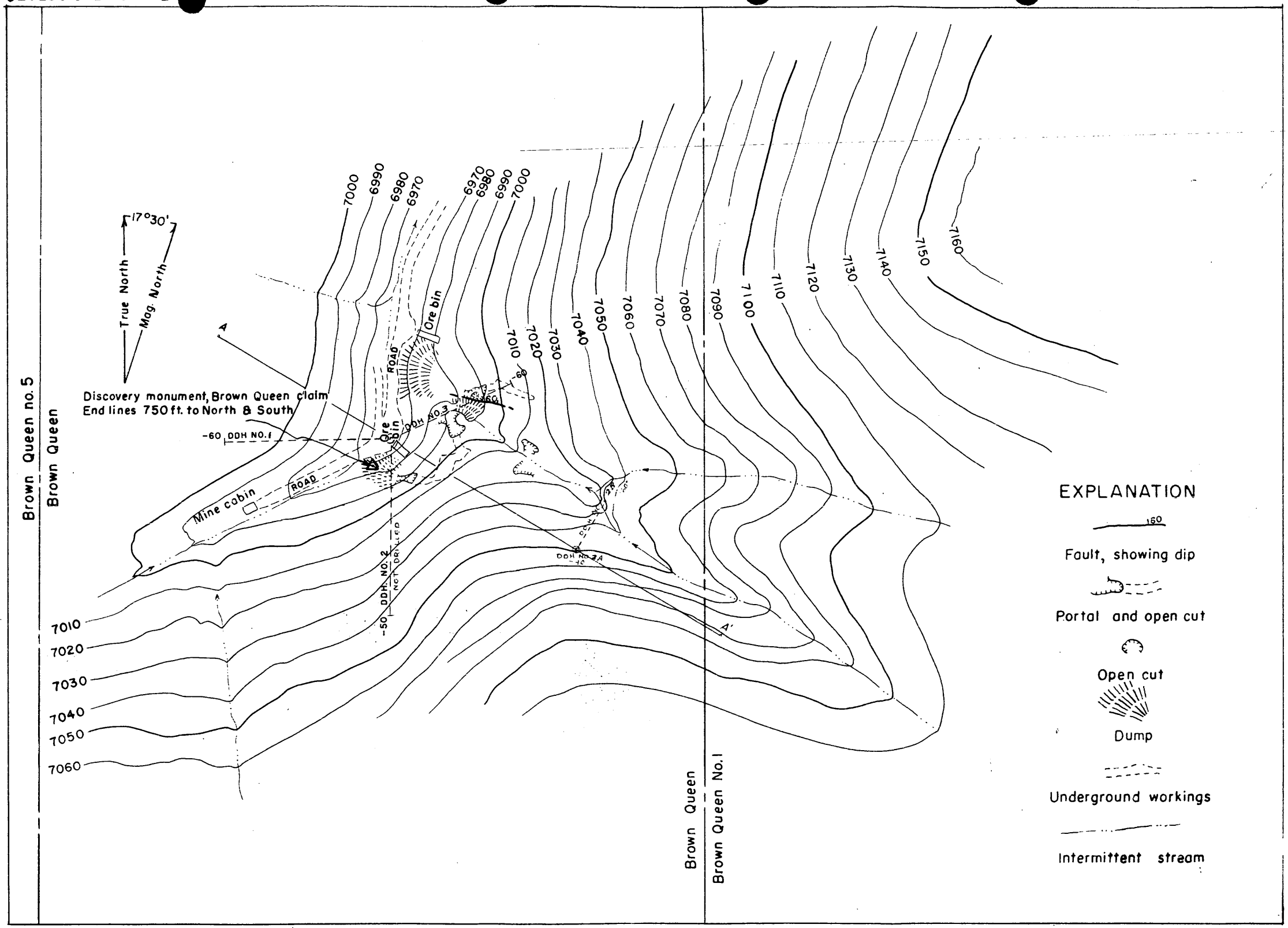


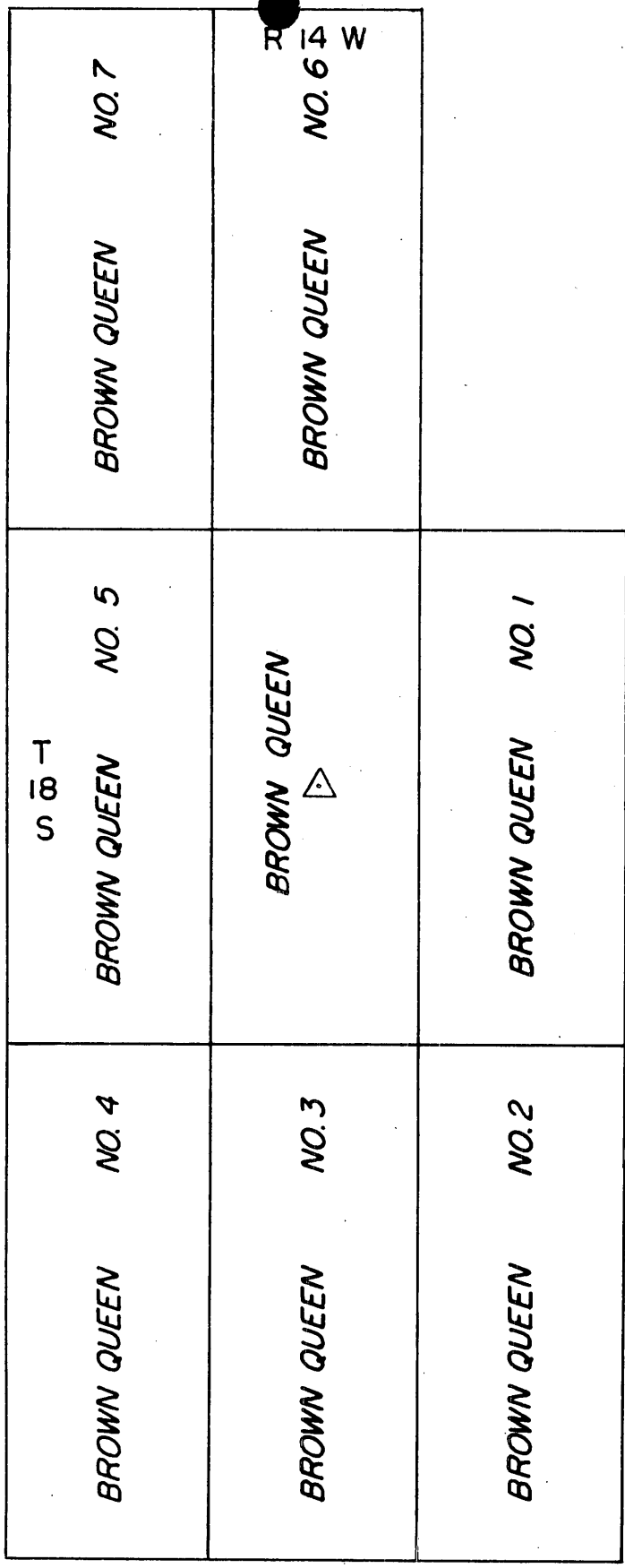
FIG. 2

MAP OF BROWN QUEEN MINE AREA
HOUSE RANGE, MILLARD COUNTY, UTAH

0 100 200 300
Scale

Contour interval 10 ft.; Datum assumed

By R. W. Osterstock and C. G. Tillman May 1954

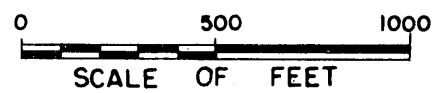


LEGEND

△ LOCATION MONUMENT

NOTE

PRESENT MINE WORKINGS ARE LOCATED IN CENTER OF BROWN QUEEN CLAIM.



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 2 A DMEA Docket No. 3235

Claim Map

WILLDEN AND PETTY
BROWN QUEEN GROUP

MILLARD COUNTY, UTAH

ENGINEER: *M. H. HOWES*	DATE: JUNE 22, 1954
TRACED: JUNE, 1954; A.P.T.S.	700 - 187 - E
CHECKED:	

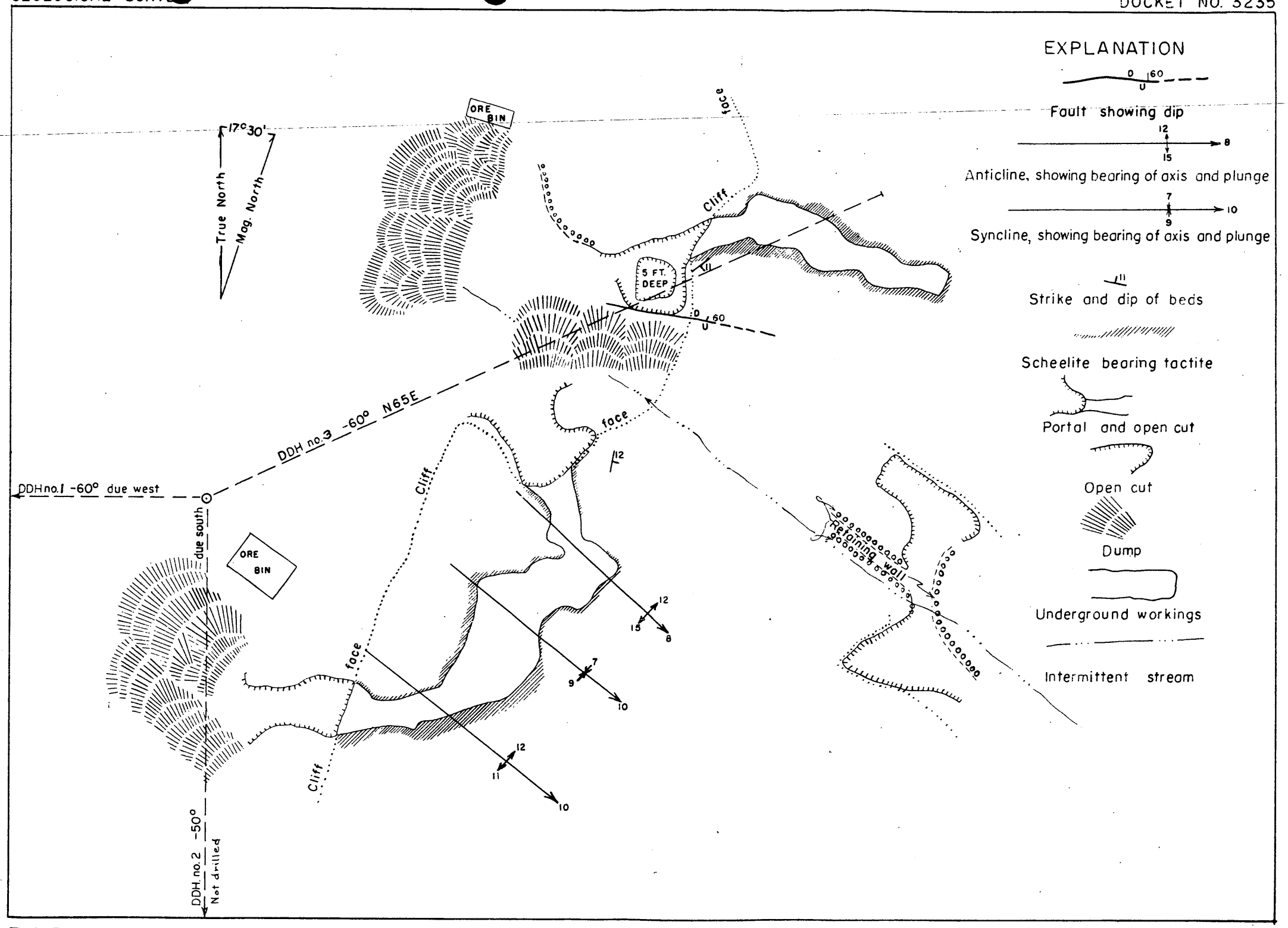
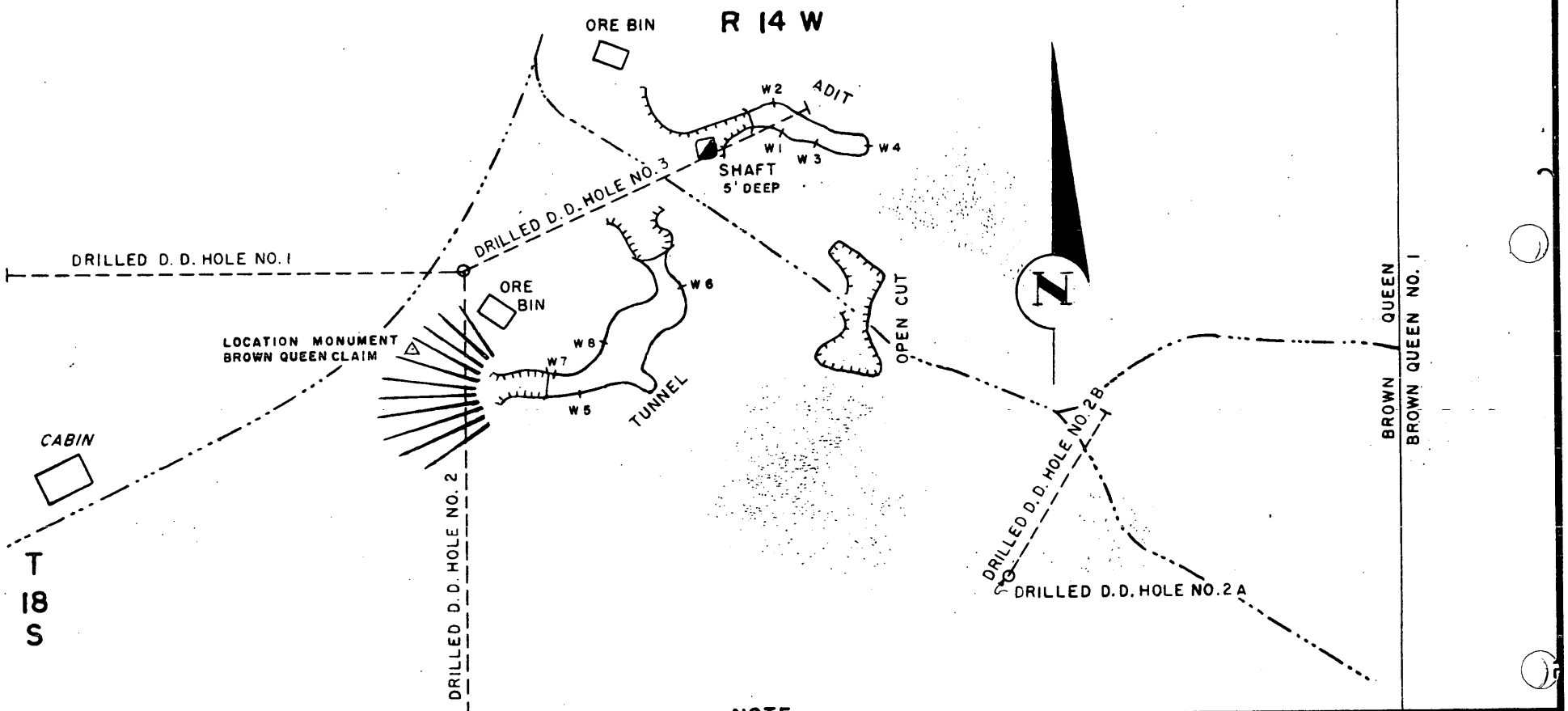


FIG. 3

MAP OF BROWN QUEEN MINE
HOUSE RANGE, MILLARD COUNTY, UTAH

0 20 40 60 ft.
Scale

By R. W. Osterstock and C. G. Tillman May, 1954



LIST OF ASSAYS			
SAMPLE	CUT	WO_3 %	MO %
W1	SELECTED	2.86	6.24
W2	1'	1.65	0.07
W3	1'	0.01	0.01
W4	1'	0.12	0.01
W5	5'	0.47	0.07
W6	4'	0.13	0.01
W7	2½'	2.89	0.02
W8	3'	0.33	0.01

NOTE

DATA TAKEN FROM U.S.G.S. MAP.

0 50 100

SCALE OF FEET

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 3A DMEA Docket No. 3235

Plan of Mine Workings

WILLDEN AND PETTY

BROWN QUEEN GROUP

MILLARD COUNTY, UTAH

ENGINEER: *M. H. HOWES*	DATE: APRIL 10, 1956
TRACED: APR., 1956, A.P.T.S.	700 - 196 - G
CHECKED:	

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

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

Re: Docket No. DMEA 3235 - Tungsten
Willden and Petty
Brown Queen Claims
Millard County, Utah
Contract No. Idm-E698

Dear Mr. Traver:

Reference is made to your letter of February 13, 1956, in which you advised that the Field Team's final report on the above noted project was awaiting the engineering and geologic sections. We would appreciate your sending us this report at your early convenience so that we may close the docket on the project.

Sincerely yours,

Chairman, Operating Committee

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

Not used
RT is gradually catching up on these reports.
Please file this & MF copies
WSM
4/11/56

400 DOCKET SURNAME
Chapman
Martin

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

Re: Docket No. DMEA 3235 - Tungsten
Willden and Petty
Brown Queen Claims
Millard County, Utah
Contract No. Idm-E698

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Sincerely yours,

Chairman, Operating Committee

APPROVED:

TLChapman/foc
4-10-56
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG. III
Messrs. Holliday, USBM
Kiilsgaard, USGS

Member, Bureau of Mines

Member, Geological Survey

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

RECEIVED
FEB 15 1956

224 New Customhouse
Denver 2, Colorado

February 13, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3235 (Tungsten), Contract Idm-E698, Willden and Petty, Millard County, Utah

In compliance with the "Special Notice" instructions contained in the "Minutes, Operating Committee," No. 622, dated January 27, 1956, we are enclosing the original and one copy of the Operator's Final Report.

The Field Team's Final Report will be forwarded as soon as the engineering and geologic sections are available.

W. M. Traver

Enclosures

Oper's Final Rep't

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

RECEIVED
FEB 15 1956
DMEA
Date Rec'd.

AUG 22 1955
BUREAU OF MINES
Denver, Colorado

August 19, 1955

Memorandum

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

From: Stephen R. Wilson

Subject: Docket No. DMEA-3235 (Tungsten), Contract Idm-E898, Willden and Petty, Millard County, Utah

Enclosed are five copies of a final report received from the subject contractor. The report describes all diamond drilling completed under terms of the contract.

Although the operator's report is deficient in discussion of the geology, ore reserves and costs of the work, it is recommended that it be accepted as fulfilling Article 3(b) of the contract.

Stephen R. Wilson

Enclosure

cc: J. B. Clemmer

RECEIVED
FEB 15 1956

FINAL REPORT
WILLARD C. PETTY
DELTA, UTAH
Docket No. DSSA 3235
Contract No. 14-2696

Originally there were to be drilled three holes, the approximate attitude and maximum depth of drill holes were as follows:

Hole No.	Inclination	Direction	Maximum Depth
1	-60	West	300 feet
2	-50	South	290 feet
3	-60	S 65 E	250 feet

Total Maximum Footage 800 feet

Hole No. 3 was drilled first. Considerable difficulty was experienced in drilling this hole, and the water was frequently lost. A fault was encountered which was badly shattered. Little or no mineralization was encountered.

Hole No. 1 was drilled secondly. Drilling tools were lost and considerable difficulty was experienced in recovering them. Water was frequently lost and a considerable quantity of cement was used. Little or no mineralization was encountered. Granite was not encountered in either Hole No. 3 or Hole No. 1. Since litle or no mineralization nor the granite was encountered in either Hole No. 1 or 3 it was felt that it was inadvisable to drill No. 2 hole. Therefore a request for contract amendment was made and it was decided to drill two holes to a maximum depth of 125 feet each at a location approximately 200 feet South-Easterly from the drill station. The new drilling location was both higher in elevation and stratigraphically. The reason for selecting this new location was to explore beddings located at a higher topography than those encountered in drilling Holes No. 3 and No. 1.

One hole was drilled vertical and the other hole was drilled on a bearing North 90 East inclined at an angle of 60 . The vertical hole was drilled first. This hole was completed to a depth of 125 feet. The 60 hole was drilled to a depth of 155 feet at which time the bit, core barrel, and 40 foot of rod was lost and was unrecoverable. Because there was little or no mineralization encountered in the vertical hole and little or no mineralization encountered in the 60 hole at the 155 foot depth, it was deemed advisable to discontinue drilling operation. The contract called for a total cost of $6160.00 for the drilling of 800 feet. 730 feet were drilled at a total cost of $5438.50.

400

RECEIVED
SEP 26 1955

224 New Customhouse
Denver 2, Colorado

September 15, 1955

Memorandum

To: T. A. Christensen

WSM

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3255 (Tungsten), Contract Idm-8698, Willden and Petty, Millard County, Utah - FINAL PAYMENT

Reference is made to our memorandum of August 17, 1955 whereby we transmitted the final Form MF-104, Operator's Monthly Progress Report and Voucher for the period of July, 1955 and instructed you to withhold from payment the sum of $200.00 pending receipt of the Operator's final report and release of the Report of Review by the Contract Administration and Audit Division.

The Operator's final report has been received and the Report of Review was released to this office on September 13, 1955. In conformance with the Report of Review we recommend that payment to the Operator be made as follows:

Basis for Final Payment

Total Accepted Costs as per Report of Review	$5,811.00
Government Participation at 90 per cent	4,358.25
Total Prior payments	4,158.25
Due the Operator	$ 200.00

W. M. Traver

WMT:prl
cc: MF-104 File Idm-8698
Secretary, Operating Committee (2)
Shaw (2)
Townsend
Chuan.

Paid $200.00

Randel R. Cooper
Authorized Certifying Officer
9-20-55 DMA-56-28

3235

RECEIVED
SEP 1 3 1955

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Willden and Petty, a Partnership Consisting of
Earl B. Willden, Al Willden and Lionel A. Petty
Delta, Utah

pertaining to Exploration Project Contract No. Idm-E698, Docket No. DMEA-3235 including Amendments Nos. 1 through 3, for the months of August, 1954 to October, 1954, and June and July, 1955, inclusive, covering a project for the exploration of Tungsten on property known as Brown Queen Group located in Millard County, approximately 48 miles southwest of Delta, Utah.

My review included an examination of the Monthly Reports(Form MP-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, conference with the Executive Officer, DMEA Field Team, Region III, 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 were under a contract provision for payment by the Government on the basis of agreed estimated 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		$5,816.96
Exceptions: (Schedule attached)		
By DMEA Finance Officer	$5.96	
Herewith	0.00	5.96
Total Accepted Cost		$5,811.00

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 Four thousand, three hundred fifty-eight and 25/100ths Dollars

** $4,358.25 **

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.

Donald T. Finch
Auditor

September 13, 1955

Donald T. Finch, Auditor

RECEIVED
SEP 1 1957

WILLIAM AND PETTY

Contract No. Idm-E693 Docket No. DMEA-3235

SCHEDULE OF DISALLOWANCES

By Finance Officer:

Footage on Hole No. 3 exceeded allowable maximum of 8/10th of a foot @ $7.45 per foot - - - - - - - $5.96

The Examining Engineer recommended this disallowance which is concurred in by the Executive Officer, DMEA Field Team, Region III, and the auditor.

geo

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

RECEIVED
AUG 29 1955

224 New Customhouse
Denver, Colorado

August 26, 1955

Memorandum

To: Chairman of the OperatingCommittee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3235 (Tungsten), Contract Idm-E698, Willden and Petty, Brown Queen Property, Millard County, Utah

Enclosed for your files are four copies of an interim geologic report, dated August 23, 1955, by R. W. Osterstock, Geological Survey, covering work completed under Contract Idm-E698, with transmittal dated August 24, 1955, by E. N. Harshman, Member, Field Team, Region III.

W. M. Traver

W. M. Traver

Enclosures

Interim geologic report.

MINERAL DEPOSITS
DMEA
RECEIVED
AUG 24 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

RECEIVED
AUG 29 1955

Room 221, 222 So. West Temple
Salt Lake City 1, Utah
August 23, 1955

Memorandum

To: E. A. Barnhart, DMEA Field Team, Region III

From: R. W. Gotterstock

Subject: Interim Report, Docket DMEA 3235 (Tungsten) Wilden and Petty, Brown Queen Property, Millard County, Utah.

A brief inspection of the subject property was conducted August 13, 1955 by R. W. Gotterstock (USGS). The operators were not present in the field, however they were contacted in Delta, Utah where the diamond drill core is stored.

Diamond drill holes Nos. 3 and 4 as authorized under amendment No. 2 to the existing contract, have been completed essentially as proposed in the executed contract. Diamond drill hole No. 3 was drilled vertically to a depth of 125 feet (see Fig. 4). Diamond drill hole No. 4 was drilled -60° N. 30° E. to a depth of 105 feet at which point the hole was abandoned when the core barrel became lodged in the hole and could not be recovered.

Brief logs of the holes are as follows:

Brown Queen DDH No. 3 -90° (core recovery 83%)

Interval		Description
0-24		Bleached, recrystallized regular bedded limestone.
24-36		Broken and sealed recrystallized limestone.
36-40		Bleached recrystallized regular bedded limestone.
40-55		Broken, partially recemented recrystallized, few open spaces lined with aragonite crystals.
	51'	2-3 inches of clay gouge.
55-68		Bleached, thin bedded recrystallized limestone.
	61'	few small grains of powellite.
68-89		Bleached recrystallized limestone with few thin argillaceous bands.
	69'	few specks of powellite.
	71'	Thin (1/4 inch) nearly vertical band of powellite.
	80'	few coarse crystals of scheelite.
	89'	thin (1/4 inch) vertical stringer of powellite.
89-125		Tight, recemented breccia, cementing agent reddish colored, minor silicification throughout interval few thin (1-2 inch) less competent argillaceous bands not brecciated

90.5'	thin (1/4 inch) band of powellite at 9° angle with core - small amounts of disseminated powellite over 6 inch interval.
109'-111'	extreme brecciation.

Drum Jason DDH No. 4, -60° N. 30° E., (core recovery 74%)

Interval	Description
0'-50'	White to light gray recrystallized limestone, bleached and partially silicified, few thin dark argillaceous bands.
25'	specks of powellite.
30'	bedding makes 50° angle w/core.
34.1'	thin streak of powellite.
35.1'	few scattered grains of powellite.
35.5'	few scattered grains of powellite.
36.3'	thin veinlet of powellite.
37'	Bedding makes 35° angle w/core.
39'	thin streak of powellite.
44'	few fine grains of scheelite.
45.5'	few fine grains of scheelite.
46'	few thin stringers of scheelite.
50'-55'	Dark argillaceous bands make up 30% of interval.
51'	few specks of powellite
55'-105'	White, gray and tan recrystallized limestone with some silicification.
58'	thin recemented breccia zone.
	Section becomes thicker bedded from this point down.
65'	Bedding makes 40° w/core.
68.2'	few specks of scheelite.
70.1'	few specks of scheelite.
86.0'	few disseminated grains of powellite.
98.0'	Bedding makes 45° angle w/core.
104.8'	few specks of powellite.

Perhaps the most noteworthy feature of these drill holes is the fact that neither hole shows any appreciable increase in tungsten content in the zone of down dip projections of the ore bodies mined from the surface. Tactite, in which the tungsten minerals occur at the surface, has been best developed along particularly receptive bedding units. It was felt, therefore, that the down dip projections of known tungsten bearing tactites from the surface would provide a logical exploration objective. The drilling program has demonstrated that the tactitized beds are not susceptible to projection, probably because of an irregular lenticular nature. The small amount of scheelite and powellite noted in drill holes 3 and 4 only serves to illustrate the ephemeral nature of the ore control.

The diamond drilling program has exhausted the most likely exploration ventures in the Brown Queen area at least until some further information is developed regarding the localizing controls for the tungsten bearing textite.

R. W. Carterstock

Extra

IN REPLY REFER TO:

DMEA
Date Rec'd.

AUG 25 1955

BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

RECEIVED
AUG 29 1955

August 24, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: Interim report, DMEA Docket 3255 (tungsten), Contract IDm-2698, William and Patty, Brown Queen property, Millard County, Utah

Enclosed are the original and eight copies of an interim report by R. W. Osterstock, U. S. Geological Survey, describing the results of core drilling of the two holes authorized in Amendment No. 2 to the subject contract.

The reference to figure 4, made in the second paragraph on page 1 of the Memorandum, apparently refers to figure 4 accompanying Amendment No. 2 to the contract.

The memorandum is self-explanatory. Four copies should be sent to the Chairman of the Operating Committee for information purposes.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (9)

ENHarshman:mrh

JUN 2 0 1955

Interior Department
Defense Minerals Exploration
Administration
14X4401(01) Revolving Fund,
Defense Production Act,
Interior (Allocated Working Fund
to the Office of the Secretary

TELETYPE

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

Reurtt June 17, Docket DMEA 3235-Tungsten, Willden and Petty, Contract Idm-2698. You are hereby authorized and requested to prepare amendment allowing extension of date resumption of operations with extension of royalty repayment time from 10 years to 11 years.

George C. Selfridge

Chairman, Operating Committee

cc: Docket
Code 400
Oper. Committee
Adm. Read. File
Thor Kiilsgaard, USGS
Robt. Holliday, USBM
FT, Reg. 3 - Denver

WSMartin/ls
6/20/55

C
O
P
Y

TELETYPE

DN 235 BUR MINES 6-17-55 8-42 AM

CHAIRMAN, OPERATING COMMITTEE, DMEA

REFERENCE DOCKET DMEA 3235, CONTRACT IDM-E698, WILLDEN AND PETTY, BECAUSE OF FAILURE OF DRILL RIG OPERATOR REQUEST EXTENSION OF DATE OF RESUMPTION OF OPERATIONS TO JUNE 6. PLEASE TELETYPE ADVICE IN THE MATTER

W M. TRAVER

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

400

224 New Customhouse
Denver 2, Colorado

June 8, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3235 (Tungsten), Contract Idm-E698, Willden and Petty (Brown Queen area), Millard County, Utah

WSM

Enclosed for your information are four copies of an interim report from R. W. Osterstock, geologist, USGS dated May 31, 1955 and transmittal thereof from E. N. Harshman dated June 3, 1955 relative to operations under the subject contract.

W. M. Traver

W. M. Traver

Enclosures

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
Date Rec'd.
JUN 6 1955
BUREAU OF MINES
Denver, Colorado

June 3, 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3235 (Tungsten), Contract Idm-E698), Willden and Petty, Brown Queen area, Millard County, Utah - Interim report

Enclosed are the original and 8 copies of an interim report by R. W. Osterstock, U. S. Geological Survey, covering his inspection of work under the subject contract.

Four copies of the memorandum should be sent to the Washington DMEA staff for their information.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (9)

ENHarshman:arh

MINERAL DEPOSITS
DMEA
RECEIVED
JUN 1 1955
U. S.
GEOLOGICAL SURVEY
OF THE COLORADO

222 So. West Temple, Room 208
Salt Lake City 1, Utah
May 31, 1955

Memorandum

To: E. N. Hershman, DMEA Field Team, Region III

From: R. W. Osterstock

Subject: DMEA Docket 3235 (Tungsten) Willden & Petty, Brown Queen area, Millard County, Utah.

A brief inspection of the subject property was conducted May 10, 1955 for the purpose of spotting the drill site. Although the diamond drill had not yet arrived on the property, Mr. Earl Willden informed me that it was expected to arrive before May 15 and that the operations would be resumed as soon as the equipment was in position. The revised diamond drilling program is authorized under Amendment No. 2 to the existing contract Idm-8698.

Other than the two inclined drill holes authorized under Exhibit A of the original contract the only work accomplished on the Brown Queen group is small "dog-hole" driven about 10 feet easterly from the old face of the southernmost adit of the Brown Queen mine. It is doubtful that any production was realized from this work, although I have not checked this with the operators as they were not present during the examination.

R. W. Osterstock

RWO/rs
cc: S. R. Wilson

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

400

224 New Customhouse
Denver 2, Colorado

November 18, 1954

JAK

Messrs. Earl B. Willden,
Al Willden, and Lionel A. Petty
Willden and Petty
Delta, Utah

Re: Docket DMEA 3235 (Tungsten)
Contract Idm-E698
Willden & Petty
Millard County, Utah

Gentlemen:

Enclosed are the original and five copies of Amendment No. 1 to Contract Idm-E698, which we have prepared to establish a unit cost for assaying to effect consistency between the recitation in Exhibit A and the provisions of Article 4 of the contract form, which stipulates that all work is to be performed at an agreed unit cost.

All copies of the amendment should be signed by all three partners as indicated and returned to this office, leaving the date blank.

Upon signature by the Executive Officer, DMEA Field Team, Region IV, for the Government, a copy of the amendment will be forwarded to you.

Yours very truly,

J. F. Shaw

J. F. Shaw for
W. H. King
Executive Officer
DMEA Field Team, Region IV

Enclosures

J Tim

Copy to: [illegible], P. [illegible] (2)
[illegible]
[illegible]llson
[illegible]berts
J Townsend

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

400

October 19, 1954

Memorandum

To: The Administrator, DMEA
Attention: Mr. W. S. Martin

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-3235, Willden and Petty
Contract Idm-E698 (Tungsten)

The subject contract, already executed in the field, is unobjectionable from a legal standpoint. However, we point out that it is unusual in that it does not specify the size of coring that is to be done. This office assumes that the size of the cores is of no concern in this particular case.

Penciled note by WSM made on 10/20. "No objection to EX and if the Operator wishes to make it any larger, that would be acceptable so long as the increased cost was for the Operator's sole account."

J. L. Hofflund
J. L. Hofflund
Acting Assistant Solicitor

Attachment
HCRubin/JLHofflund/emd

Copy to: DMEA Docket
Solicitor's Docket
W. S. Martin (2)
J. L. Hofflund
H. C. Rubin
chron.

400

September 10, 1954

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Review of Region IV contract
Docket No. DMEA 3255 - Tungsten
Willden and Petty
Brown Queen claims
Millard County, Utah
Contract No. Idm-E698

Applicant proposed a $20,095.27 program consisting of a 300-foot shaft, 100 feet of drifting, and 600 feet of diamond drilling to explore along a steeply north-dipping, east-striking, normal fault which was thought to have served as an access channelway for rising tungsten-rich solutions.

Tungsten mineralization in the Brown Queen mine area is confined exclusively to tactite zones developed in limestone strata. The tactite zones follow and are localized by the bedding, and certain beds are replaced in preference to others. Source of the mineralizers forming the tactite is thought to be a quartz monzonite stock, called the Notch Peak intrusive, the north side of which outcrops about 3/4 mile south of the property. No data are available as to the depth of the parent magma in the mine area.

The examining field team discussed the unimportance of the fault in relationship to the formation of the tactite and suggested a diamond drilling program consisting of three holes.

It is hard to visualize a drilling program as authorized by the subject contract. None of the three holes is normal to the strike of the bedding, and only one hole, Hole No. 1, is normal to the dip. However, this hole bears away from the exposed deposits of tactite and is apparently prospecting for other parallel tactite bodies.

SIGNED

W. S. Martin, Chief
Iron and Ferro-Alloys Division

cc: Docket
Code 400
Oper. Committee

FARutledge/ls 9-10-54

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

224 New Customhouse
Denver 2, Colorado

August 17, 1954.

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket No. 3235 (Tungsten), Contract Idm-E698, Willden and Petty, Millard County, Utah.

Enclosed are four copies of the Report of Examination of the property and two copies of Form 3b.

The contract has been prepared and is now in force.

W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
8-23-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

224 New Customhouse
Denver 2, Colorado

July 22, 1954.

Memorandum

To: Field Team, DMEA, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination - DMEA Docket 3235 (Tungsten), Willden and Petty, Brown Queen claims, Millard County, Utah.

Enclosed are eight copies of the engineering report of examination on the above docket.

The applicant requested $20,095.27 to sink a shaft 300 feet and to perform 600 feet of exploratory diamond drilling.

The engineer examiner recommends a total of 800 feet of diamond drilling in three holes from a common surface location to explore the intrusive contact at a total cost of $6,160.00, Government participation $4,620.00.

We concur in this recommendation.

W. M. King

W. M. King

Enclosures

Reviewed by
DMEA OPERATING POLICIES
8-23-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

June 28, 1954

Memorandum

To: W. H. King, Executive Officer, DMEA Field Team, Region IV

From: Chief, Minerals Development Branch, Mining Division, Region IV

Subject: Docket No. DMEA 3235 (Tungsten), Willard and Petty, Brown Queen group, Millard County, Utah

Enclosed are the original and eight copies of an engineering report covering examination of the subject property for DMEA loan appraisal. The examination was made and the report prepared by M. H. Howes. Also attached are three copies each of forms 6-803 and 6-993 and the original brochure. Ten extra prints each of figures 2, 3 and 4 of the report have been mailed under separate cover.

The applicants have requested a loan of $20,095.27 to sink a 300-foot shaft, drift 100 feet, and drill 600 feet of diamond drill holes. The examining team recommends an alternate exploratory program consisting of diamond drilling 800 feet in three holes. The total estimated cost of the alternate program is $6,160.

I concur with the recommendations of the field examiners that the applicants be granted a loan of $6,160 to perform 800 feet of diamond drilling.

Stephen R. Wilson
Stephen R. Wilson

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
8-23-54
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

June 18, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3235, Willden & Petty (tungsten), Brown Queen Group, Millard County, Utah

Enclosed are 9 copies of a geologic report by R. W. Osterstock and C. G. Tillman, geologists, U. S. Geological Survey.

Messrs. Osterstock and Tillman believe that exploration on the subject property is warranted and have proposed a program somewhat different than that originally proposed by the applicant. This modified program has been discussed with the applicants and is satisfactory to them.

Also enclosed are 10 extra copies of the maps from the geologic report.

E. M. Hausman
for A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (19)

Reviewed by
DMEA OPERATING COMMITTEE
8-23-54
(date)

Room 208 - 222 So. West Temple
Salt Lake City 1, Utah
June 15, 1954

Memorandum

To: A. H. Koschmann, Field Team, Region IV

From: R. W. Osterstock, for R. J. Roberts

Subject: DMEA Docket 3235 (Tungsten), Willden & Petty, Brown Queen Group, Millard County, Utah.

Enclosed are nine copies of a geologic report on the Brown Queen group, DMEA docket 3235, by R. W. Osterstock and C. G. Tillman, geologists, U. S. Geological Survey.

Willden and Petty applied for a DMEA loan to aid in exploration for scheelite on their Brown Queen claims in Millard County, Utah.

Scheelite occurs as pods and disseminations in tactite zones which are localized by favorable beds in the Cambrian Orr and Weeks limestones and shales. The tactite zones become thicker and more abundant lower in the section indicating proximity to a concealed intrusive. The nearest exposed intrusive mass is in Antelope Valley about 1/2 mile to the south of the mine area.

It is recommended that the modified exploration program consisting of three diamond drill holes be approved for DMEA assistance.

Ralph J. Roberts

By: _____
R. W. Osterstock

RWO/rs

Reviewed by
DMEA OPERATING COMMITTEE
8-23-54
(date)

INTRODUCTION

On January 3, 1954 Earl B. Willden, Al Willden, and Lionel A. Petty applied for a DMEA loan, Docket No. 3235, to aid in exploration for tungsten on the Brown Queen claims in Millard County, Utah. The property was examined May 20, 1954 by R. W. Osterstock and G. G. Tillman, geologists, U. S. Geological Survey. The owners were present during the examination.

Location and Accessibility

The eight claims comprising the Brown Queen group are probably in unsurveyed Sec. 30, T. 18 S., R. 14 W., SLB&M in Bird Canyon, House Range, Millard County, Utah. The property is reached by driving 9.8 miles southeasterly from Delta, Utah on paved U. S. Highway 6, thence 35.2 miles westerly on "old" Highway 6, thence southerly 2.4 miles on an unmarked dirt road to the mine.

History and Production

Prior to the staking by the applicants in 1951 there was no recorded production for this area. The owners report in their application that development operations have thus far produced and shipped about 260 tons of ore averaging 2 percent WO_3. Although no settlement sheets were available for inspection, the applicants recalled that two shipments of 30 and 54 tons of ore to Bishop, California assayed 2.28 and 2.67 percent WO_3 respectively; a third shipment of 56 tons of ore to Barstow, California assayed 1 percent WO_3.

GEOLOGY

The sedimentary rocks in the Brown Queen mine area are interbedded limestones and shales of the Weeks and Orr formations of Cambrian age. The thick Cambrian section, of which these strata are a part, forms a typical basin-range block known as the House Range. The rocks are intruded

by an irregular granite stock of Tertiary age which has affected very little deformation of the strata.

The nearest exposed contact between sediments and granite is at the northern edge of Amazaa Valley about 1/2 mile to the south of the mine area. It is reported that several small dike-like bodies are exposed in the hills surrounding the mine, however, these were not observed.

In the Brown Queen mine area the sedimentary rocks strike north and dip gently to the east. There has been very little faulting in the mine area.

Where the Amazaa Valley granite body is in contact with limestone, tactite zones have developed particularly along certain favorable beds. It is noted that the tactite zones become less frequent or more selective away from the intrusive body.

ORE DEPOSITS

Tungsten mineralization in the Brown Queen mine area is confined exclusively to tactite zones developed in limestone strata. The tactite zones follow and are localized by the bedding, and certain beds are replaced in preference to others. As a result the section is characterized by "layers" of dark red-brown to green tactite separated by bleached beds of limestone which may have a considerable tremolite content or may be re-crystallized.

The tactite beds are commonly less than 2 feet thick and may average 8 inches. In the area of the mine they make up no more than 20 percent of the section while upward they become increasingly rare and generally thinner.

Major tungsten production in Amazaa Valley, about 1 1/2 miles south of the Brown Queen area, has come from tactites localized in a few favorable

limestone beds very close to or on the granite contact. Tactites are contact phenomena and rarely extend far from the intrusive mass. Certain rock types, however, are more susceptible to such changes and may form contact-type rocks at greater distances from the intrusive mass.

There are two very gentle (flanks dip 12°-15°) anticlinal flexures, whose axes strike and plunge southeasterly, superimposed on the north striking, east dipping beds in the most southerly of the mine workings. It is doubtful that such structures have exercised any ore control as the scheelite pods and lenses do not appear to be either larger or more abundant on the flexures. One small west striking, north dipping normal fault near the portal of the northernmost adit has offset the beds and tactite zones less than 5 feet. Minor scheelite found in the fault probably was dragged in.

The tungsten minerals are scheelite and minor powellite, they occur as pods, lenses and disseminations in the tactite zones which are localized by bedding in the original sedimentary limestones. Gangue minerals are garnet, diopside, epidote, manganesiderite (?), calcite, and some quartz both as a clear to smoky crystalline type and a fine grained chalcedonic gray to red type. Although particular zones of tactite within the mine area are remarkably persistent the emplacement of tungsten minerals within these zones has been highly selective with the consequent result that some zones are entirely barren of ore minerals.

ORE RESERVES

The applicants have estimated that 500 tons of ore averaging 2 percent WO_3 is in sight. Probably this estimate is somewhat high in grade and should be classified as inferred rather than proven.

PROPOSED EXPLORATION

In setting up the application for a DMEA loan the applicants have placed undue emphasis on the existence of the small steeply north dipping, east striking normal fault. It was their contention that this fault, being the only near vertical structure in the area of the mine, must have served as an access channelway for rising tungsten-rich solutions. On this basis they believed a 300-foot shaft with a suitable amount of drifting would be the most advantageous method of exploring the tungsten potential at depth.

It is now believed more suitable to diamond drill the area in order to explore at depth for tactite zones of greater thickness than those noted in the mine workings, the primary target being the tactite zone immediately on the intrusive contact. This zone in the Amazon Valley region has proven to be more productive than the thinner tactites developed in the limestone beds at greater distances from the contact. It is assumed that the present mine workings are in this latter tactite zone.

The following exploration program consisting of diamond drill holes is suggested in lieu of the applicant's proposal; this program has been discussed with and approved by the applicants.

DD Hole #1: A 300-foot drill hole inclined 60° to the west. This hole will explore the limestone and tactite units with penetration of the maximum stratigraphic section.

DD Hole #2: A 250-foot drill hole inclined 50° to the south. This hole is designated to explore at depth for limestone and tactite units in a direction in which the intrusive mass is known to exist.

DD Hole #3: A 250-foot hole inclined 60° N. 65° E. This hole will explore the limestone and tactite units under the best showing in the mine workings, it will also cut the fault exposed on the surface. If scheelite bearing tactite beds are encountered, this third hole will provide data for accurate location and description and projection of the plane of the tactite zone.

In the event that intrusive rocks are encountered in the drill holes before their assigned footages are completed, the drill holes should be continued no more than 25 feet thus ensuring penetration of the main intrusive body rather than a dike or sill.

CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the scheelite bearing tactite zones exposed in the underground workings and on the surface in the Brown Queen mine area are stratigraphically above the most productive zones on the intrusive contact noted in the Annapa Valley district to the south.

It is recommended that DMEA enter into a contract with the applicants to explore at depth by the suggested diamond drilling program for scheelite bearing tactite zones on or near the intrusive contact.

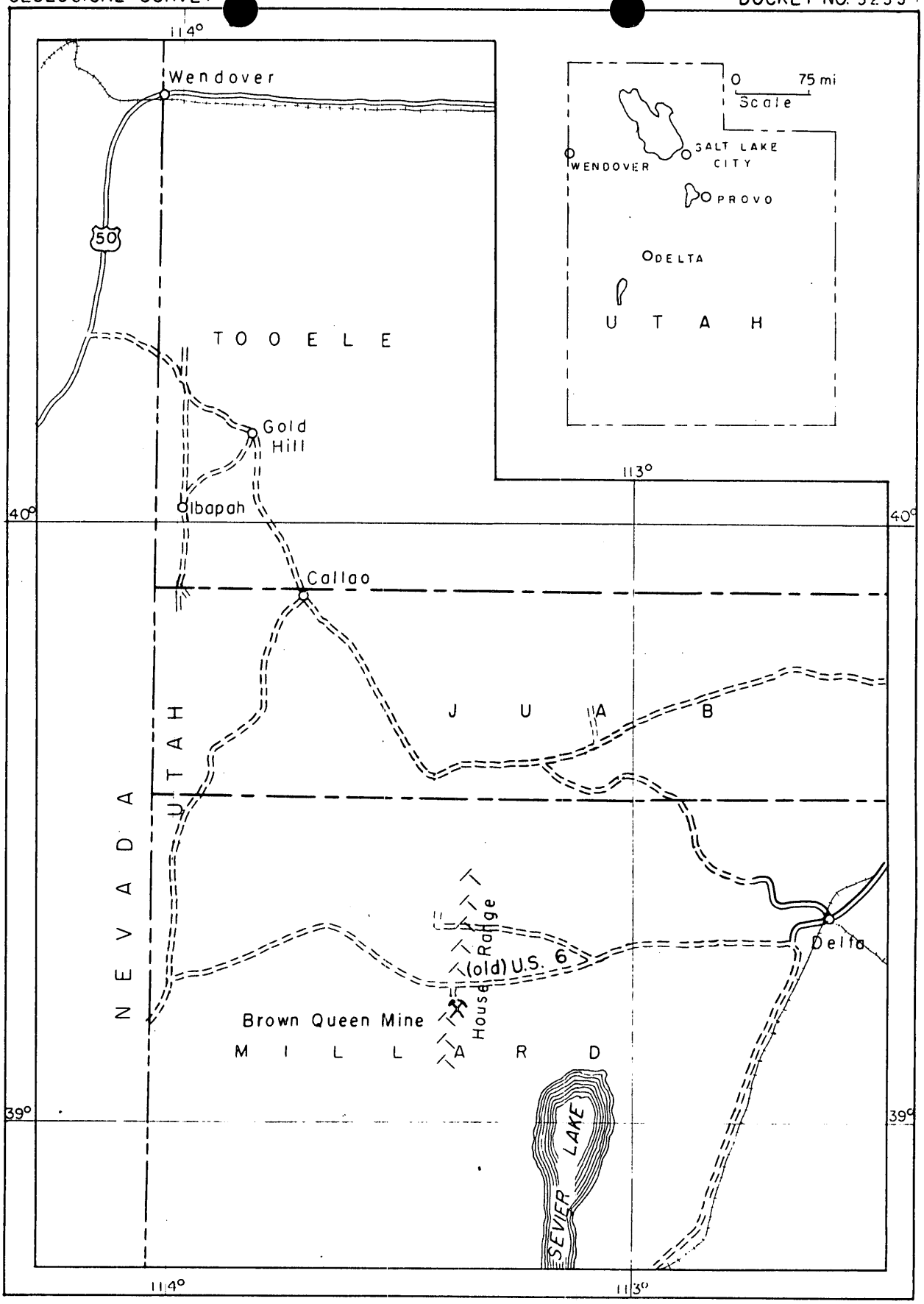

FIG. 1 INDEX MAP OF WESTERN UTAH

0 5 10 15 20 Miles
Scale

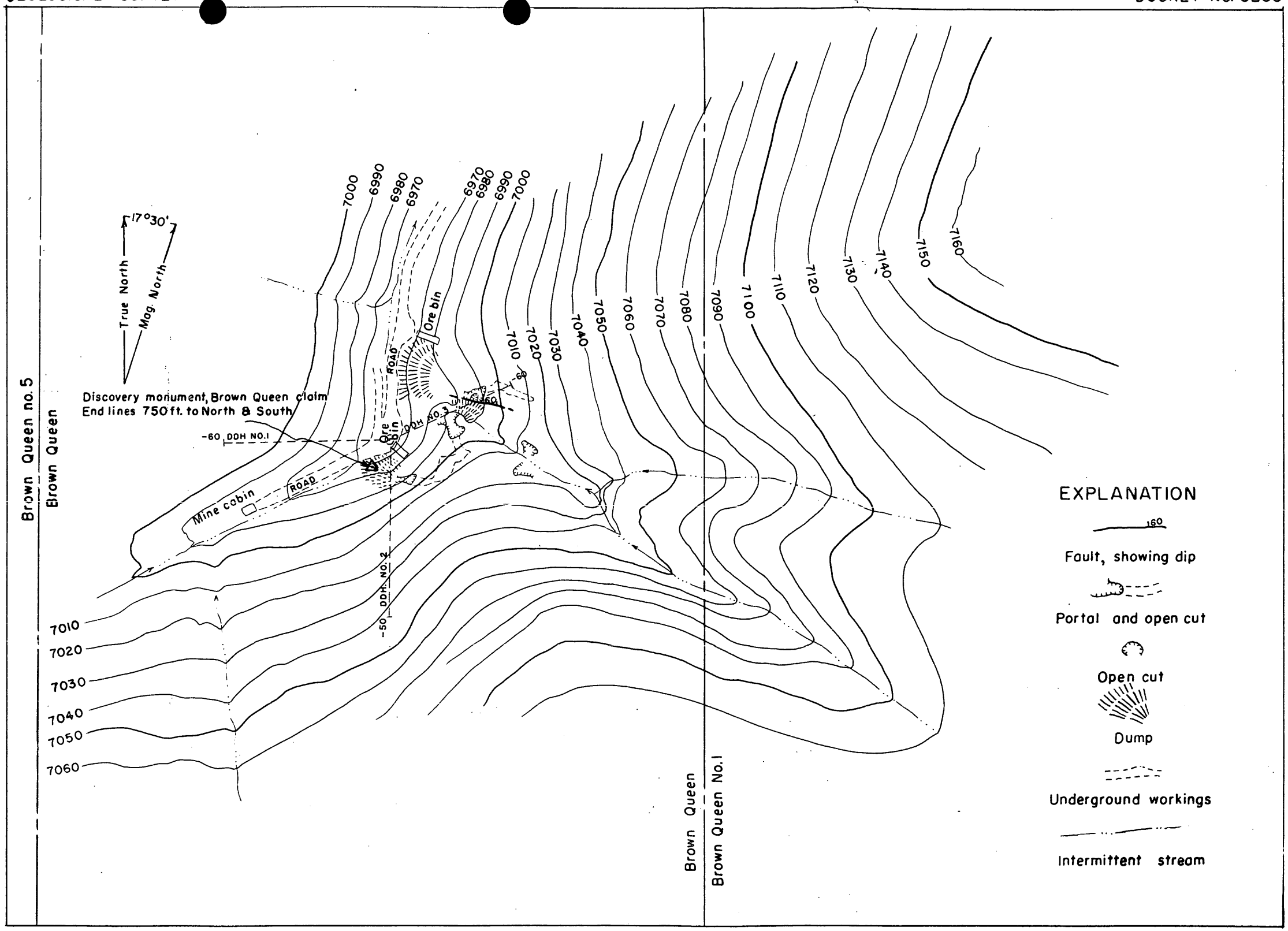

FIG. 2

MAP OF BROWN QUEEN MINE AREA
HOUSE RANGE, MILLARD COUNTY, UTAH

0 100 200 300
Scale

Contour interval 10 ft.; Datum assumed

By R. W. Osterstock and C. G. Tillman May 1954

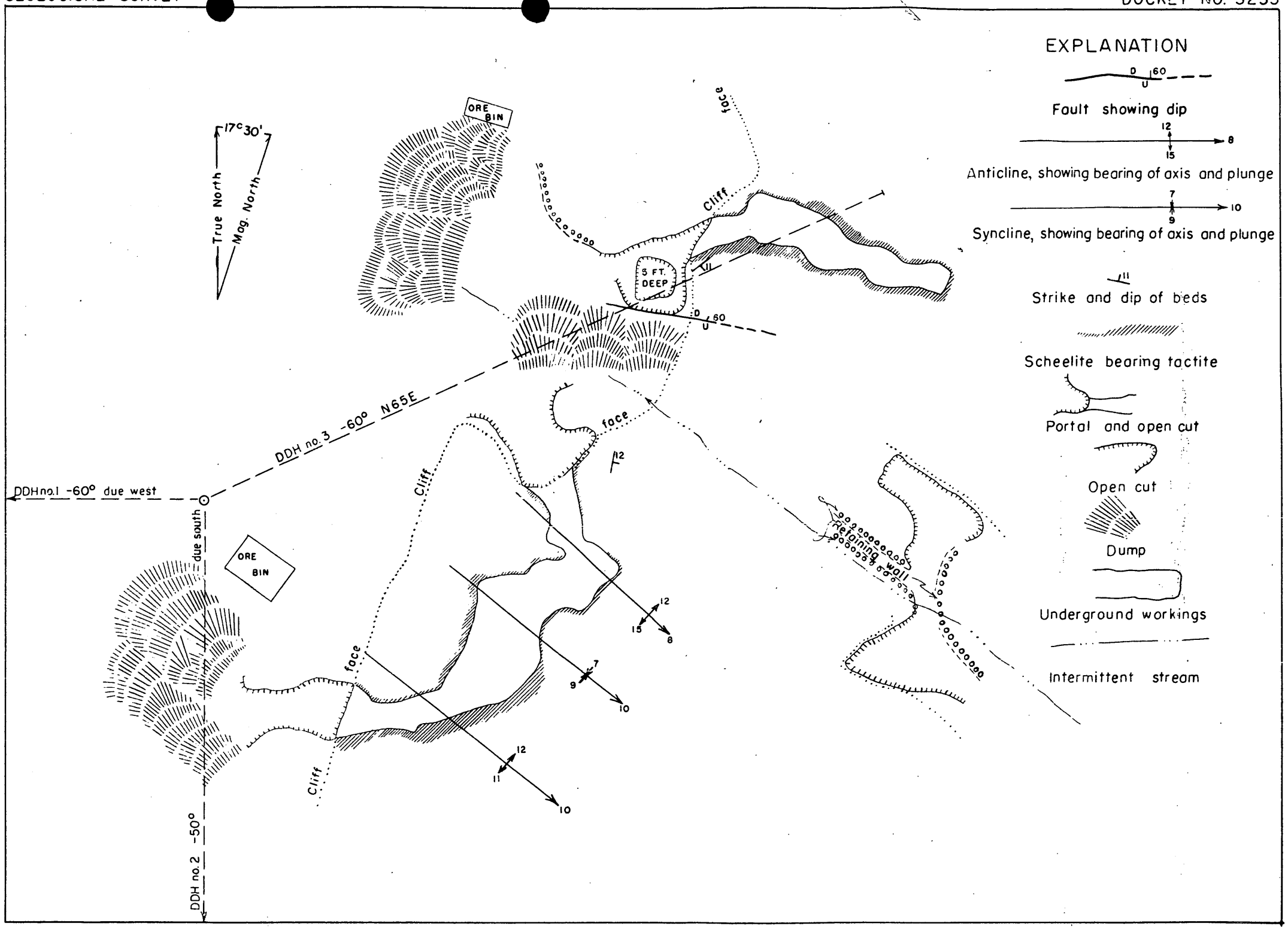

FIG. 3

MAP OF BROWN QUEEN MINE
HOUSE RANGE, MILLARD COUNTY, UTAH

0 20 40 60 ft.
Scale

By R. W. Osterstock and C. G. Tillman May, 1954

WILLDEN AND PETTY, BROWN QUEEN GROUP
MILLARD COUNTY, UTAH
DMEA-3235
Tungsten

Engineering Report

By M. H. Hewes
Mining engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
8-23-54
(date)

WILLIAM AND PETTY, BROWN QUEEN GROUP
MILLARD COUNTY, UTAH

CONTENTS

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Geology	4
Ore reserves	5
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Proposed exploration	7
Estimated costs	8
Conclusions and recommendations	8

ILLUSTRATIONS

Fig. 1 Location map, Brown Queen group, Millard County, Utah
Fig. 2 Claim map
Fig. 3 Location of mine workings
Fig. 4 Plan of underground workings

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Application for a DMEA loan of $20,095.27 has been made by the partnership of Willden and Petty for an exploratory project on the Brown Queen group of claims, Millard County, Utah. The property was appraised in April and May 1954 by members of the Bureau of Mines and Geological Survey.

Sedimentary rocks in the area consist of limestones and shales of Upper Cambrian age. These rocks have been intruded by a quartz monzonite stock called the Notch Peak intrusive, the north side of which outcrops about 3/4 mile south of the property. Tungsten ores occur in parallel, scheelite-bearing tactite zones, which lie along, and in proximity to, the limestone-intrusive contact. The stronger and thicker zones generally occur near the stock.

The claims are reported to have produced 260 tons of ore averaging 2 percent WO_3 from a tactite zone of 2-1/2 feet average thickness. Inferred ore reserves are estimated to be from 2,000 to 3,000 tons, averaging 0.73 percent WO_3.

The field examiners believe that a diamond drilling program is the most suitable method to explore for tungsten-bearing tactite zones below the present mine workings.

It is recommended that the applicant be granted a loan of $6,160 to conduct diamond drilling exploration as outlined in this report.

INTRODUCTION

The partnership of Willden and Petty, Delta, Utah, has made application for Government aid in a tungsten exploratory project on the Brown Queen group of claims under docket No. DMEA-3235. The proposed project, consisting of 300 feet of shaft sinking, 100 feet of drifting, and 600 feet of diamond drilling, is estimated to cost $20,095.27.

The property was examined in April and May 1954 by M. H. Howes, Bureau of Mines, and C. G. Tillman and R. W. Osterstock, Geological Survey, to appraise the feasibility of the project.

LOCATION, TOPOGRAPHY AND CLIMATE

The Brown Queen claims are situated in the southeast part of T. 18 S., R. 14 W., S.L.B. & M. (unsurveyed) (fig. 1). The claims lie on the east side of Bird Canyon, in the rugged terrain of the House Range, 2 miles south of Marjum Pass and about 3/4 mile north of Amassa Valley, Millard County, Utah. Delta, Utah, on the main line of the Union Pacific Railroad, is approximately 50 miles east of the property. Delta is the nearest rail shipping point and a source of manpower and supplies.

A custom tungsten mill approximately 11 miles west of the property has recently started operations.

The climate is arid. Summers are hot and dry and winters are cold, with moderate snow.

HISTORY AND PRODUCTION

The property was located originally by the present owners in the spring of 1951. The tungsten deposit was discovered by tracing scheelite float to the outcrop with ultraviolet light.

The applicant reports that 260 tons of ore that averaged 2 percent WO_3 has been produced and shipped from the property to date. The applicant also estimates that a reserve of approximately 500 tons of ore of the same grade is present on the property.

OWNERSHIP AND EXTENT

Earl B. Willden, Al Willden, and Lionel A. Petty, all of Delta, Utah, doing business as Willden and Petty, a partnership, Delta, Utah, located and hold the following eight unpatented lode mining claims (figs. 2 and 3), which are recorded at the Millard County Courthouse, Fillmore, Utah:

Claim	Recording Date	Book	Page
Brown Queen	Mar. 29, 1951	12 of M.L.	476
Brown Queen No. 1	Apr. 2, 1951	12 of M.L.	484
Brown Queen No. 2	Apr. 2, 1951	12 of M.L.	484
Brown Queen No. 3	Apr. 2, 1951	12 of M.L.	485
Brown Queen No. 4	Apr. 2, 1951	12 of M.L.	485
Brown Queen No. 5	Apr. 23, 1951	12 of M.L.	494
Brown Queen No. 6	Apr. 23, 1951	12 of M.L.	495
Brown Queen No. 7	Dec. 19, 1953	13 of M.L.	258

GEOLOGY

Sedimentary rocks in the House Range, in the area of Amasa Valley and Marjum Pass, consist of interbedded limestones and shales of Upper Cambrian age, which have a general north-south strike and easterly low-

angle dip. These rocks have been intruded by a quartz monzonite stock, called the Notch Peak intrusive. Adjacent to the stock the sedimentary beds dip outward in all directions, and are generally concordant with the intrusive. A number of scheelite-bearing tactite zones, ranging from a few inches in thickness to several feet, occur in limestone beds adjacent to and in the proximity of the stock, the stronger and thicker zones generally occurring near the intrusive.

Limestones are the principal rocks in the vicinity of the Brown Queen group. The beds strike in a northerly direction and dip gently to the east. The north side of the Notch Peak intrusive outcrops in Amasa Valley, about 3/4 mile south of the property. Several comparatively thin tactite zones, separated by altered limestones, were observed in and near the mine workings. The tungsten ores occur as erratic concentrations of scheelite and powellite in parts of the tactite zones.

ORE RESERVES

The tactite zone, which was followed by the underground workings, is the thickest and richest of the zones encountered in the mine area. The following eight samples (fig. 3) were taken along this zone and analyzed:

Sample	Cut	Percent WO_3	Percent Mo
W1 1/	Selected	2.86	6.24
W2	1'	1.65	0.07
W3	1'	<0.01	<0.01
W4	1'	0.12	<0.01
W5	5'	0.47	0.07
W6	4'	0.13	<0.01
W7	2-1/2'	2.89	0.02
W8	3'	0.33	<0.01
Weighted average		0.73	0.03

1/ Results not included in weighted average values.

The above tactite zone has been exposed 120 feet along the strike and 40 feet down dip with an average thickness of 2-1/2 feet. Assuming that the zone will continue along the strike and down dip for similar distances, an inferred reserve estimate of between 2,000 and 3,000 tons of 0.73 percent ore would result.

PRESENT STATUS

Present workings on the property (fig. 3) consist of a 40-foot adit or flat incline, a 70-foot irregular tunnel, a 5-foot shaft, and about 400 square feet of open cuts (fig. 4).

The only building on the property is a 10' x 15', roughly built, one-room cabin. Two ore bins of about 15 tons capacity each, have been constructed near the portals of the adit and tunnel. In addition to a few hand tools, the only mining equipment on the property is an Ingersoll-Rand, 5-1/2-inch bore, 5-inch stroke, 875-r.p.m. compressor, powered by an 8-cylinder Waukesha gasoline engine and mounted on a flatrack Ford truck.

PROPOSED EXPLORATION

The applicant has proposed sinking a 300-foot shaft (deepening the present 5-foot shaft), drifting 100 feet, and drilling 600 feet of diamond drill holes.

An alternate proposal recommended by the field examiners and concurred in by the applicant consists of drilling three diamond drill holes from a point in the bottom of the canyon approximately N. 33° E., 30 feet from the discovery monument of Brown Queen claim (figs. 3 and 4) as follows:

D. D. hole No. 1: Drill west, -60°, 300 feet maximum, or not more than 25 feet penetration of the quartz monzonite.

D. D. hole No. 2: Drill south, -50°, 250 feet maximum, or not more than 25 feet penetration of the quartz monzonite.

D. D. hole No. 3: Drill N. 65° E., -60°, 250 feet maximum, or not more than 25 feet penetration of the quartz monzonite.

The diamond drilling program is planned to explore for tungsten-bearing tactite zones below the present mine workings, the principal one of which is along the limestone-intrusive contact. Hole No. 1 will be drilled at near right angles to the limestone beds and should present a good stratigraphic section, as well as explore for favorable tactite zones. Hole No. 2 will be drilled toward the known position of the intrusive stock. Hole No. 3 will explore the limestone under the best showings in the mine workings.

Eight hundred feet of diamond drill holes at 32 feet per day will require 25 days for completion.

ESTIMATED COSTS

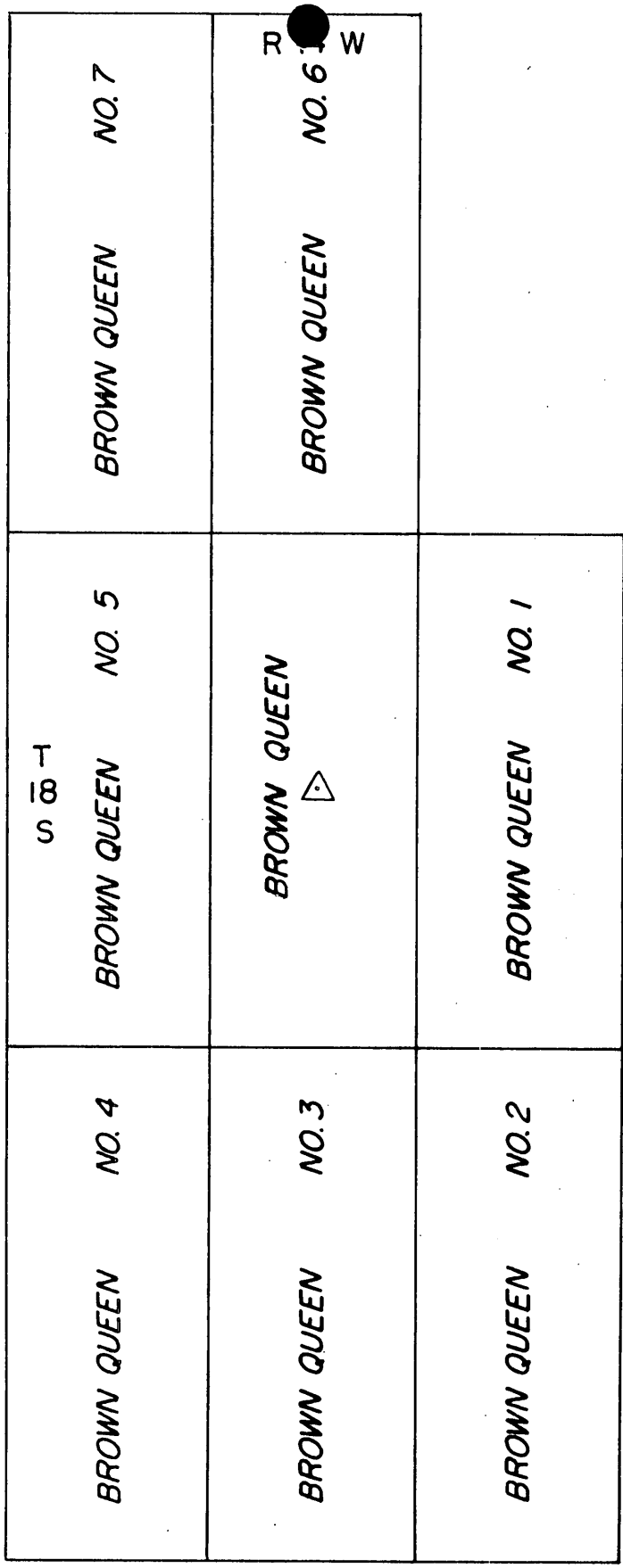
Diamond drilling, 800 feet of holes, 7/8-inch core, at $6.00 per foot (including reaming and casing)	$4,800.00
Drayage	100.00
Water haulage	500.00
Core boxes, 20 at $3.00 each	60.00
Assaying	200.00
Supervision	500.00
Total cost	$6,160.00
Total cost per foot	7.70
Government's share (75 percent)	4,620.00
Applicant's share (25 percent)	1,540.00

The applicant reports that he is prepared to furnish equipment, labor, and cash as his share of the estimated costs.

CONCLUSIONS AND RECOMMENDATIONS

The strong showing of tungsten mineralization encountered on the property indicates that an exploratory program is desirable. The proposed diamond drilling project is believed to be the most suitable method for the discovery of thicker and stronger ore zones, and for determining the depth to the intrusive.

It is recommended that the exploratory program, as outlined in the above-proposed plans, be approved and that a Government loan be made in accordance with DMEA regulations.

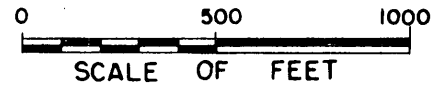


LEGEND

△ LOCATION MONUMENT

NOTE

PRESENT MINE WORKINGS ARE LOCATED IN CENTER OF BROWN QUEEN CLAIM.



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

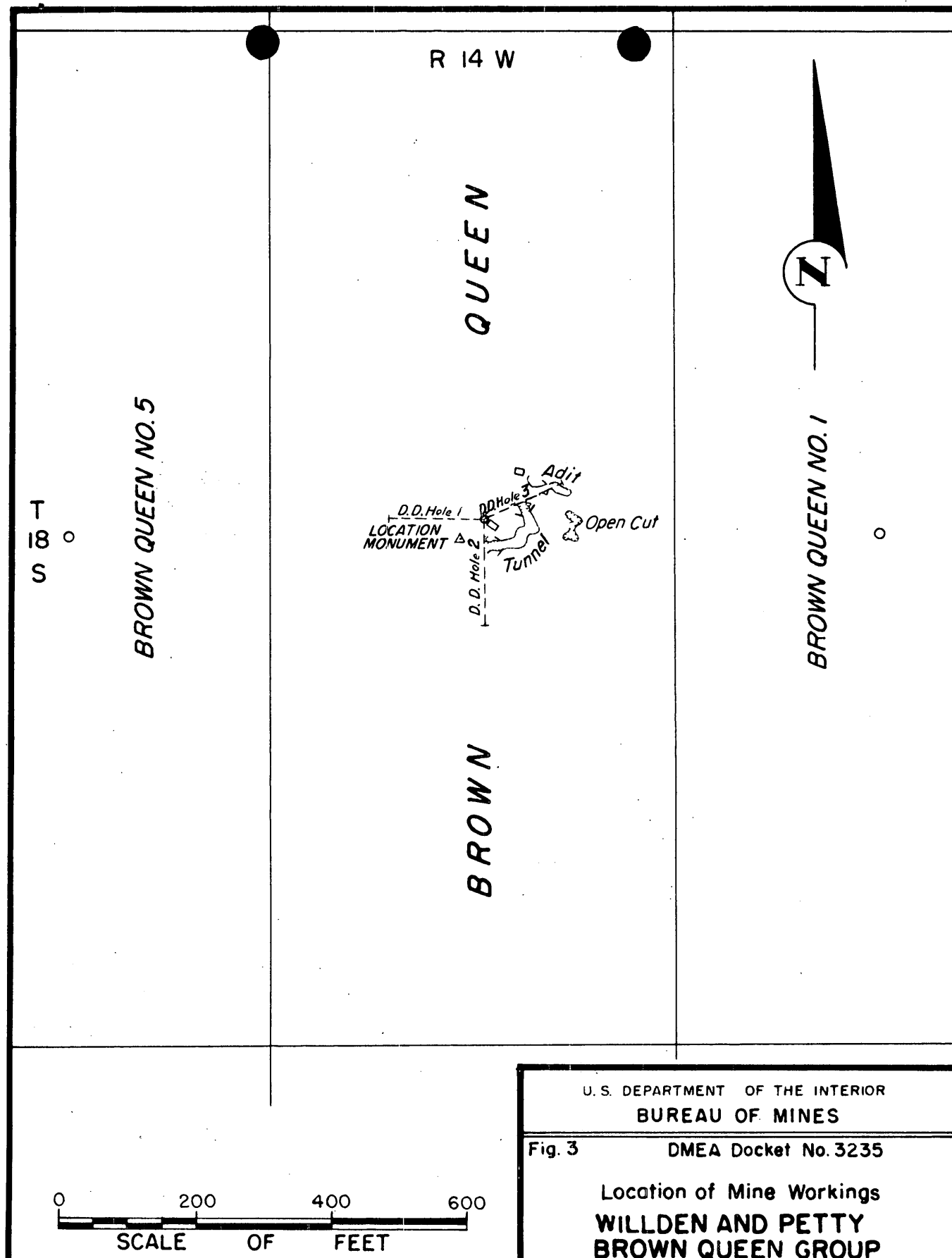
Fig. 2 DMEA Docket No. 3235

Claim Map

WILLDEN AND PETTY
BROWN QUEEN GROUP

MILLARD COUNTY, UTAH

ENGINEER: *M. H. HOWES*	DATE: JUNE 22, 1954
TRACED: JUNE, 1954; A.P.T.S.	700 - 187 - E
CHECKED:	



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

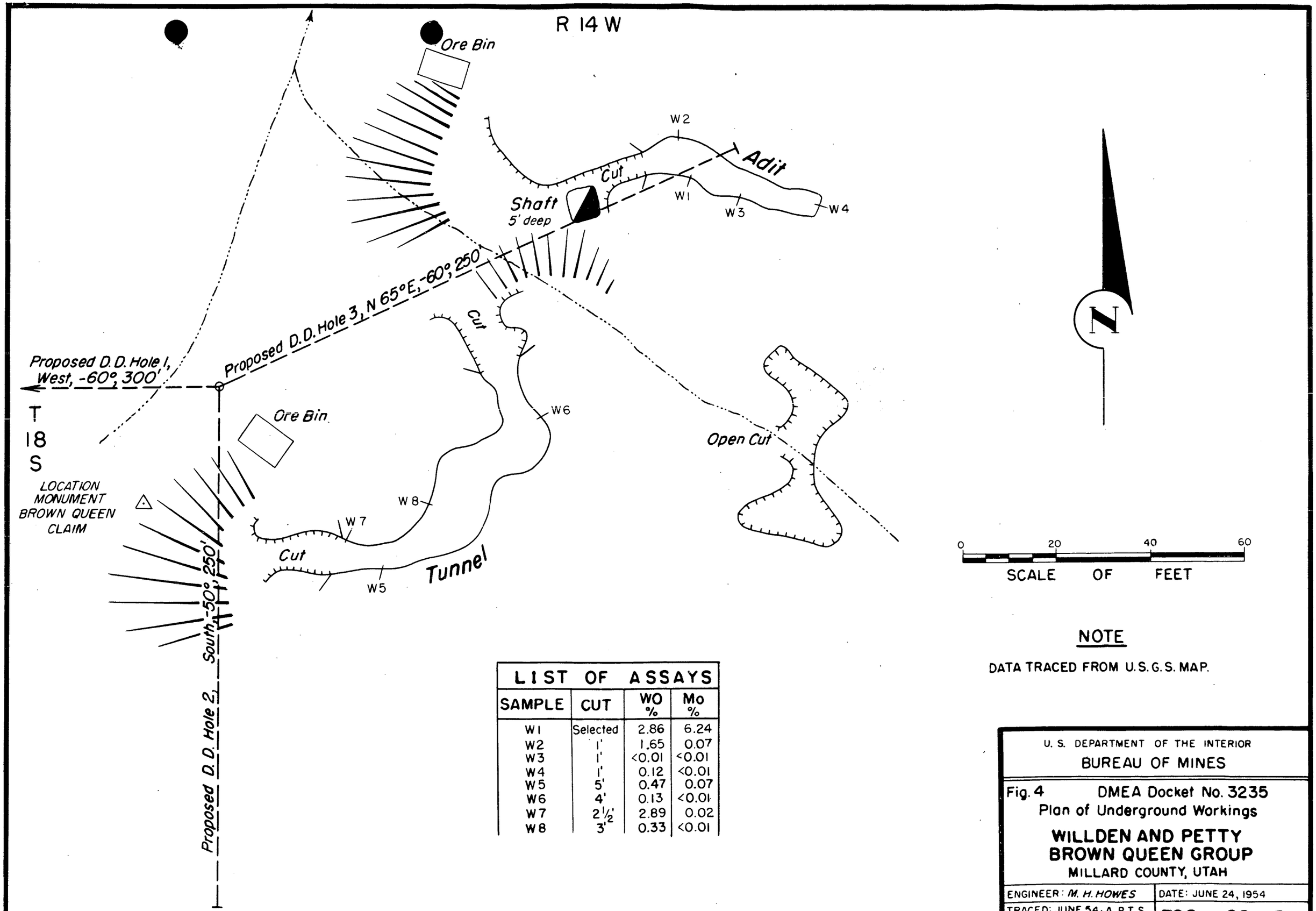
Fig. 3 DMEA Docket No. 3235

Location of Mine Workings

WILLDEN AND PETTY
BROWN QUEEN GROUP

MILLARD COUNTY, UTAH

ENGINEER: *M. H. HOWES*	DATE: JUNE 21, 1954
TRACED: JUNE, 1954; A.P.T.S.	700 - 186 - E
CHECKED:	



NOTE

DATA TRACED FROM U.S.G.S. MAP.

LIST OF ASSAYS			
SAMPLE	CUT	WO %	Mo %
W1	Selected	2.86	6.24
W2	1'	1.65	0.07
W3	1'	<0.01	<0.01
W4	1'	0.12	<0.01
W5	5'	0.47	0.07
W6	4'	0.13	<0.01
W7	2½'	2.89	0.02
W8	3'	0.33	<0.01

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 4 DMEA Docket No. 3235
Plan of Underground Workings

WILLDEN AND PETTY
BROWN QUEEN GROUP
MILLARD COUNTY, UTAH

ENGINEER: M. H. HOWES	DATE: JUNE 24, 1954
TRACED: JUNE 54; A. P. T. S.	700 - 188 - F
CHECKED:	

Omea 3235-Adm-E698- amend. #1, #2, #3,

400

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

RECEIVED
JUL - 5 1955

224 New Customhouse
Denver, Colorado

June 30, 1955

W3a4

Memorandum

To: Chairman, Operating Committee

From: Executive Officer, DMEA, Field Team, Region III

Subject: Docket 3235 (Tungsten), Contract Idm-E698, Willden and Petty, Millard County, Utah

Enclosed are the original and two copies of Amendment No. 3 to Contract Idm-E698. Also enclosed are three sets of data relevant thereto.

Copies of the amendment have been given to the operator, the Finance Office, Region III, and a copy has been retained for our files.

W. M. Traver

W. M. Traver

Enclosures

Amend 3

No. 3

RECEIVED
JUL - 5 1956

AMENDMENT OF CONTRACT: No. Idm-E698

Contract Docket No. DMEA-3235, dated August 9, 1954, between the United States of America and Willden and Petty, a partnership consisting of Earl B. Willden, Al Willden and Lionel A. Petty is hereby amended as follows, effective May 15, 1955:

> Referring to Amendment No. 2, dated April 14, 1955, item "2" change the date "May 15, 1955" to read "June 15, 1955".
>
> Referring to "Annex I", attached to Exploration Project Contract form MF-200(A) (February 1952), which is substituted in lieu of Article 6 of the contract form, further referring to "Annex I" item "b.(2)", "for a period of eleven years" is substituted "for a period of ten years".

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".

Dated JUN 30 1955

WILLDEN AND PETTY

By Earl B. Willden
Earl B. Willden, Partner

By Al Willden
Al Willden, Partner

By Lionel A. Petty
Lionel A. Petty, Partner

UNITED STATES OF AMERICA

By W. M. Traver
W. M. Traver, Executive Officer,
DMEA Field Team, Region III

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

DMEA
Date Rec'd.
JUN 16 1955
BUREAU OF MINES
Denver, Colorado

June 14, 1955

RECEIVED
JUL - 5 1955

Memorandum

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

From: Stephen R. Wilson

Subject: Docket No. DMEA-3235 (Tungsten), Contract Idm-E698, Willden and Petty, Millard County, Utah

Attached are the original and eight copies of a letter received from the subject operator requesting an extension of the recess period as allowed by Amendment No. 2. The operator's letter is dated June 2, 1955.

The inspecting engineer recommends that the recess period be extended to June 15, 1955. This period appears sufficient to allow the operator to resume diamond drilling. I concur in the recommendation made by the inspecting engineer.

Stephen R. Wilson
Stephen R. Wilson

Enclosure

cc: J. Bruce Clemmer

S. R. Wilson

June 13, 1955

M. H. Howes

RECEIVED
JUL - 5 1955

Docket No. DMEA-2225 (Tungsten), Contract Idm-2225, Willden and Petty, Millard County, Utah. Memorandum report on operator's request to extend the recess period allowed in Amendment No. 2

Amendment No. 2 of the contract states, "It is agreed that work under the Contract shall be recessed from on or about November 10, 1954, and will be resumed on or before May 15, 1955."

A letter from the operator to S. R. Wilson, dated June 2, 1955, requested that the recess period be extended, because of a delay in resuming contract work caused by difficulty in obtaining repair parts for the diamond-drill machine. The operator has reported that the parts have been received and that the drillers plan to start drilling not later than June 6, 1955.

It is recommended that the recess period be extended for 1 month or until June 15, 1955.

M. H. Howes

M. H. Howes

RECEIVED

JUL - 5 1955

Al Willden | WILLDEN BROTHERS | Earl Willden

DELTA, UTAH

June 2, 1955

S. R. Wilson
U. S. Bureau of Mines
1600 East 1st South
Salt Lake City, Utah

Dear Sir:

We have been unable to start our drilling operation on the Willden and Petty property which is under Docket DMA-3235, Contract Idm-2006 as scheduled, for the following reasons,

The drilling rig was moved onto the property on May 12. However, when drilling operations were started it was found that the rig did not work because of several parts that had become worn. The drillers upon checking in Delta for parts, were unable to ascertain them, and consequently no drilling has been done. I have been checking with the drillers and the parts for the drilling rig are now here, and drilling should commence on the property not later than June 6. The reason why I have not informed you sooner of this delay was that the drillers figured that the parts would come any day, but they did not.

We assure you that this delay was wholly unintentional and purely for mechanical failure of the drilling rig. We do not wish to jeopardize our contract with you, but we are fully aware that we have not started the drilling operation as soon as agreed upon.

If for any reason this delay has affected the terms of our contract, kindly let us know at once, as now that the rig is in working order we will complete the drilling operation as quickly as possible.

Very truly yours,

/S/ Al Willden

lh

400

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

224 New Customhouse
Denver 2, Colorado

April 14, 1955

JAR

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3235 (Tungsten), Contract Idm-E698, Willden and Petty, Millard County, Utah

Enclosed are the original and two copies of Amendment No. 2 to Contract Idm-E698 which has been executed to authorize a change in the location of holes to be drilled, authorize a recess of operations for sufficient time to resolve the matter relative to the change in work, and extends the period for completion of the project work from 6 months to one year. Also enclosed are four sets of data relevant to the amendment.

Copies of the amendment have been given to the operator, the Finance Office, Region III, and a copy has been retained for our files.

W. M. Traver

W. M. Traver

Enclosures

Amend #2

Amend #2

No. 2

AMENDMENT OF CONTRACT: No. Id.-E698

Contract Docket No. DMEA 3235, dated August 9, 1954, between the United States of America and Willden and Petty, a partnership consisting of Earl B. Willden, Al Willden and Lionel A. Petty, is hereby amended as follows, effective February 9, 1955:

1. Referring to Exhibit "A" attached to Exploration Project Contract Form MF-200(A) (February 1952), heading "Description of the Work", details of holes to be drilled, in lieu of drilling Hole No. 2 to its maximum depth of 250 feet at the location specified therefor , instead two holes will be drilled to a maximum depth of 125 feet each at the location shown on the map "Figure 4" which is attached hereto and made a part of this amendment. One hole will be drilled vertical and the other hole will be drilled on a bearing of N 30° E inclined at an angle of 60 degrees.

2. It is agreed that work under the Contract shall be recessed from on or about November 10, 1954 and will be resumed on or before May 15, 1955.

3. Referring to "Article 3. Exploration project" of Exploration Project Contract form MF-200(A), following the words "and shall bring the project to completion within a period of" delete "six (6) months" and in lieu thereof substitute "one (1) year".

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".

Dated APR 14 1955

WILLDEN AND PETTY

By Earl B. Willden
Earl B. Willden, Partner

By Al Willden
Al Willden, Partner

By Lionel A. Petty
Lionel A. Petty, Partner

UNITED STATES OF AMERICA

By W. M. Traver
W. M. Traver, Executive Officer, DMEA Field Team, Region III

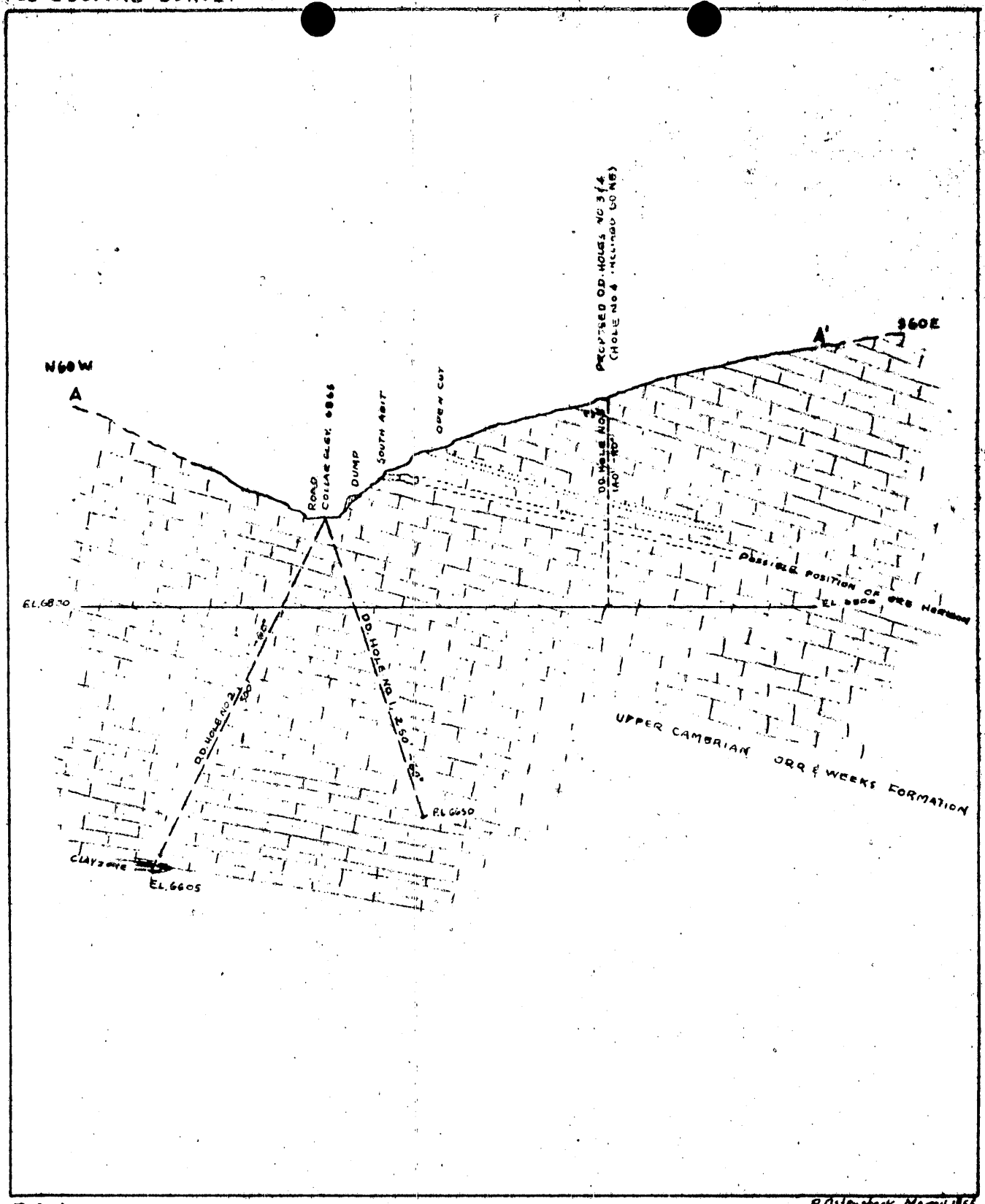


FIG. 4

R. Osterstock, March 1955

VERTICAL PROJECTION OF DIAMOND DRILL EXPLORATION OF THE BROWN QUEEN MINE AREA, MILLARD COUNTY, UTAH

LOOKING NORTHEAST

HORIZONTAL AND VERTICAL SCALE

0 100 200 300 FEET

Assumed Datum Plane

DMEA
Date Rec'd
MAR 17 1955
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

March 16, 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3235 (tungsten), Contract Idm-E 698, Willden and Petty, Brown Queen Mine, Millard County, Utah. Request for amendment.

Enclosed are the original and 8 copies of a memorandum report by R. W. Osterstock, U. S. Geological Survey, covering a request by the operators for revision of the exploration program.

The original program was designed to explore for tactite bodies in limestone stratigraphically below the known tactite-bearing horizon in the Brown Queen mine. In drilling two of the three holes authorized in the contract, data were obtained indicating that it is improbable that lower tactite-bearing horizons exist, and Osterstock concludes that the remaining drilling should be used in exploring for tungsten ore in the down-dip extension of the Brown Queen mine ore horizon.

The two short holes proposed by Osterstock have my approval.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (9)

ENHarshman:arh

222 So. West Temple, Room 208
Salt Lake City 1, Utah
March 14, 1955

Memorandum

To: E. N. Harshman, DMEA Field Team, Region III

From: R. W. Osterstock

Subject: DMEA Docket 3235 (Tungsten) William and Betty, Brown Queen Mine, Millard County, Utah.

On December 3, 1954 the subject operators requested a recess of operations through the winter months, the operators further requested a revision of the diamond drilling program as outlined under Exhibit A of contract Idm-E698. The suggested revision involves drilling for the down dip projection of the known ore bodies in the Brown Queen mine.

Two of the three originally proposed diamond drill holes have been completed; hole number 1 (formerly hole #3) to a depth of 250 feet and hole number 2 (formerly hole #1) to a depth of 300 feet (see figs. 3 and 4). The first hole drilled to the northeast under the best near-surface showings of tungsten mineralization encountered only a few very thin tactite zones, none of which contained assayable amounts of tungsten. Most of the hole was in bleached, white to light gray, thin bedded recrystallized limestone. This hole bottomed at 250 feet in pale gray recrystallized limestone. The second hole drilled was inclined 60° west for maximum stratigraphic penetration. Only a few thin tactite zones were encountered in the predominantly recrystallized pale gray to white, thin bedded, impure limestone. No assayable amounts of tungsten mineralization were present in the core. The second hole bottomed in a creamy clay zone, the origin of which is conjectural, it may be ascribed to gouge along a flat (thrust?) fault or clay-mineral alteration of an impure bed in the Cambrian section.

Summarizing the data gained in the drilling of the above two holes, it is apparent that the frequency of occurrence of the tactite zones below the present ore horizon is markedly less than had been anticipated, nor is there any other evidence of increasing proximity to a hidden intrusive body with depth. It must, therefore, be deduced that the localization of the tactite exposed in the mine workings must be due almost

entirely to the existence of particular beds which have been particularly susceptible to lime silicate replacement and alteration. It has been demonstrated that no intrusive body exists immediately below the mine workings. Consequently, it is assumed that considerable lateral migration of the mineralizing agents has taken place. The regionally persistent nearly north strike and gentle easterly dip of the strata in the mine area predicate an eastward source of the mineralizing agents in order to comply with the physical requirement of escape in a direction of decreasing pressure, ergo, up dip.

It is concluded that the extreme selectivity of lime silicate alteration will confine the potential scheelite bearing tactite zone to a thin persistent horizon which can be projected southeast of the present mine workings (see fig. 4). As was noted in the original geologic report all of the known occurrences of scheelite in the Brown Queen Mine area are confined to tactite zones and the tactite zones themselves are further confined to particular beds which have been especially amenable to lime silicate alteration. It should be pointed out that the existence of tactite does not necessarily portend the existence of scheelite.

It is recommended that an amendment to the existing contract be entered which will provide for the elimination of the 250 foot drill hole inclined 50° South and the substitution of two drill holes of 125 feet each to be located at the position noted on figure 4 accompanying this report. The new holes to be designated thus: DD Hole No. 3 - 125 feet, vertical hole. DD Hole No. 4 - 125 feet, N. 30° E. inclined 60°. These revised exploration proposals have been discussed with and approved by the applicants.

R. W. Osterstock

RWO/rs
cc: S. R. Wilson

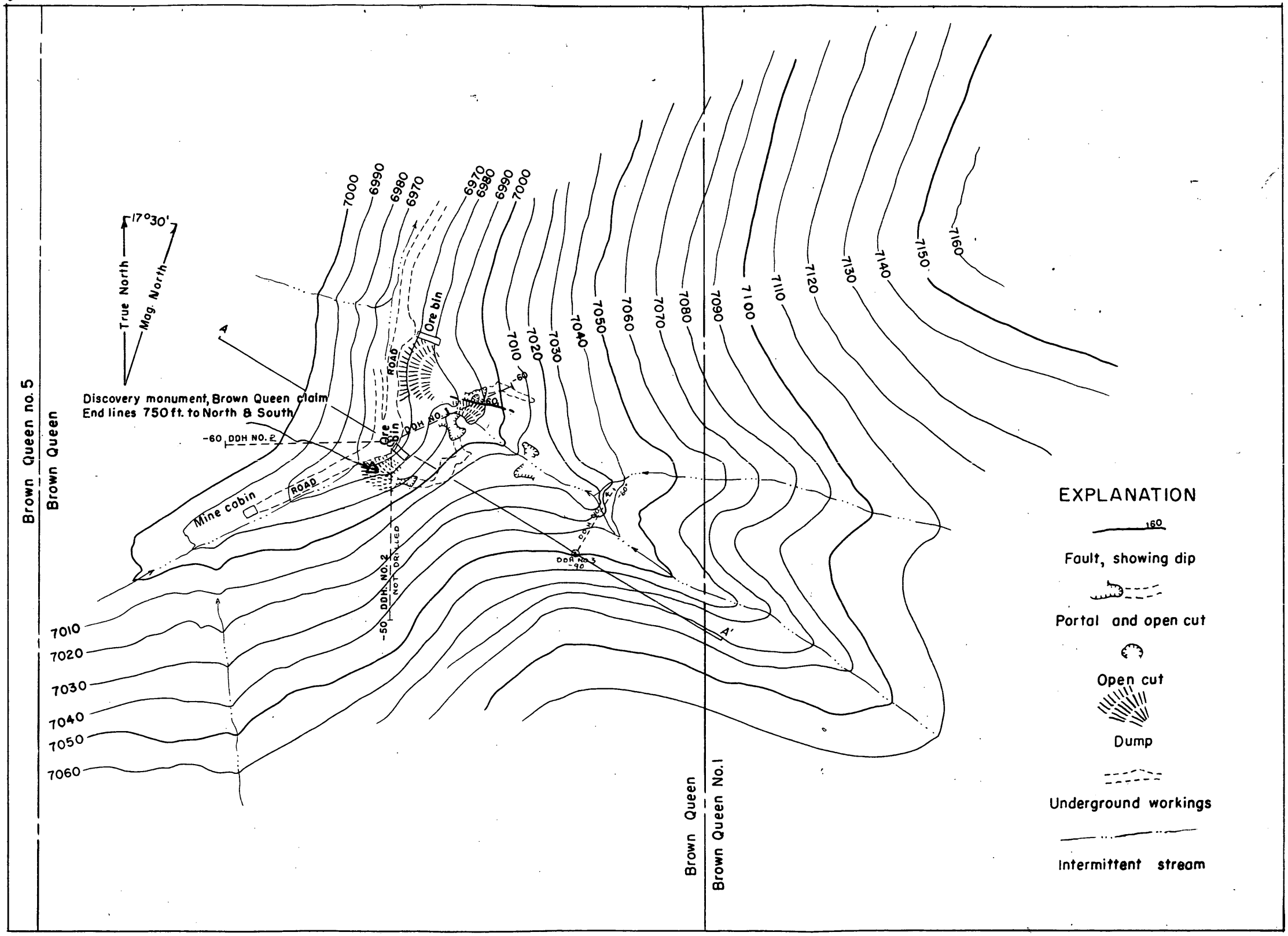


FIG. 2

By R. W. Osterstock and C. G. Tillman May 1954

MAP OF BROWN QUEEN MINE AREA
HOUSE RANGE, MILLARD COUNTY, UTAH

0 100 200 300
Scale

Contour interval 10 ft.; Datum assumed

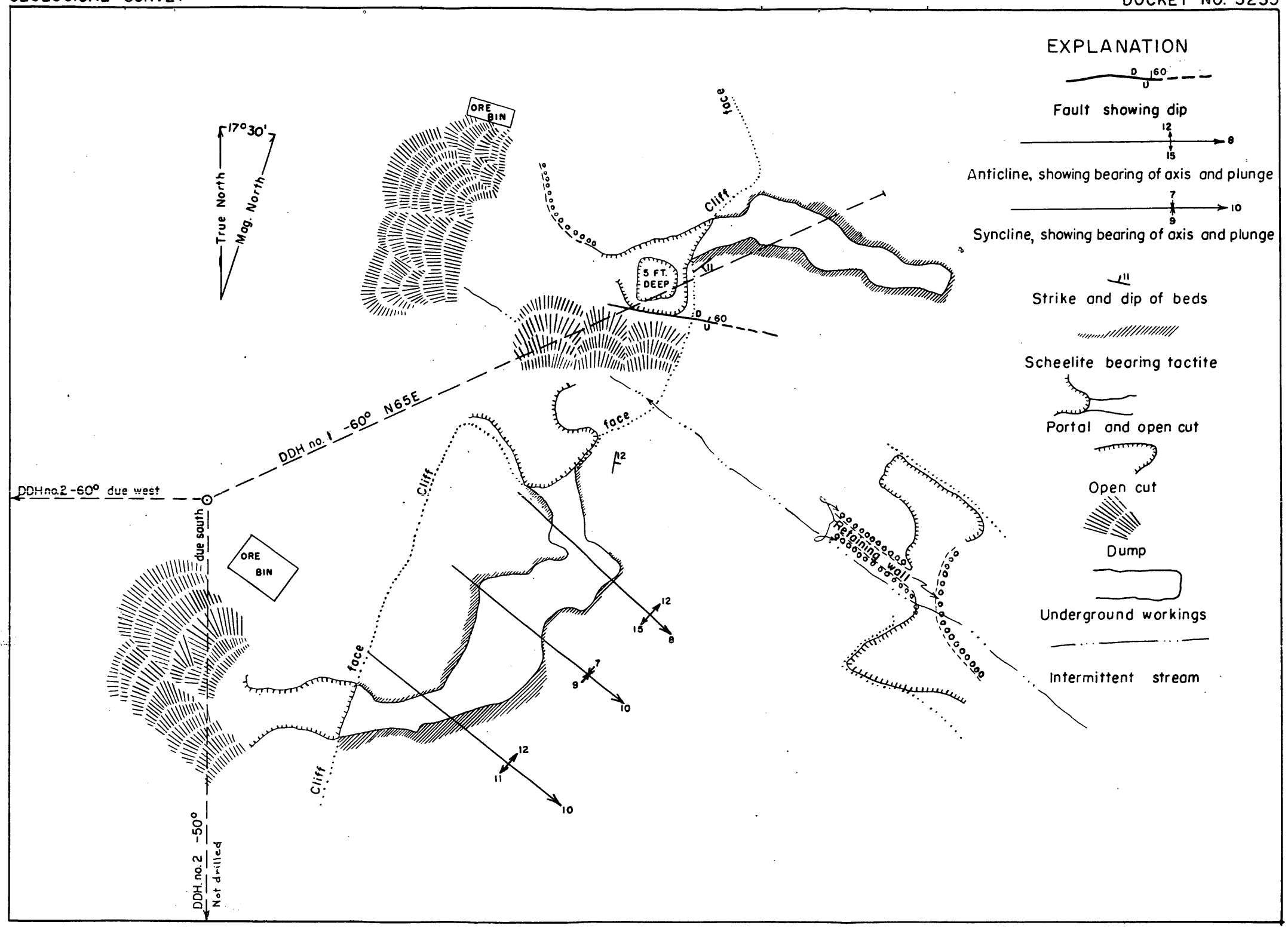


FIG. 3

MAP OF BROWN QUEEN MINE
HOUSE RANGE, MILLARD COUNTY, UTAH

0 20 40 60 ft.
Scale

By R. W. Osterstock and C. G. Tillman May, 1954

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

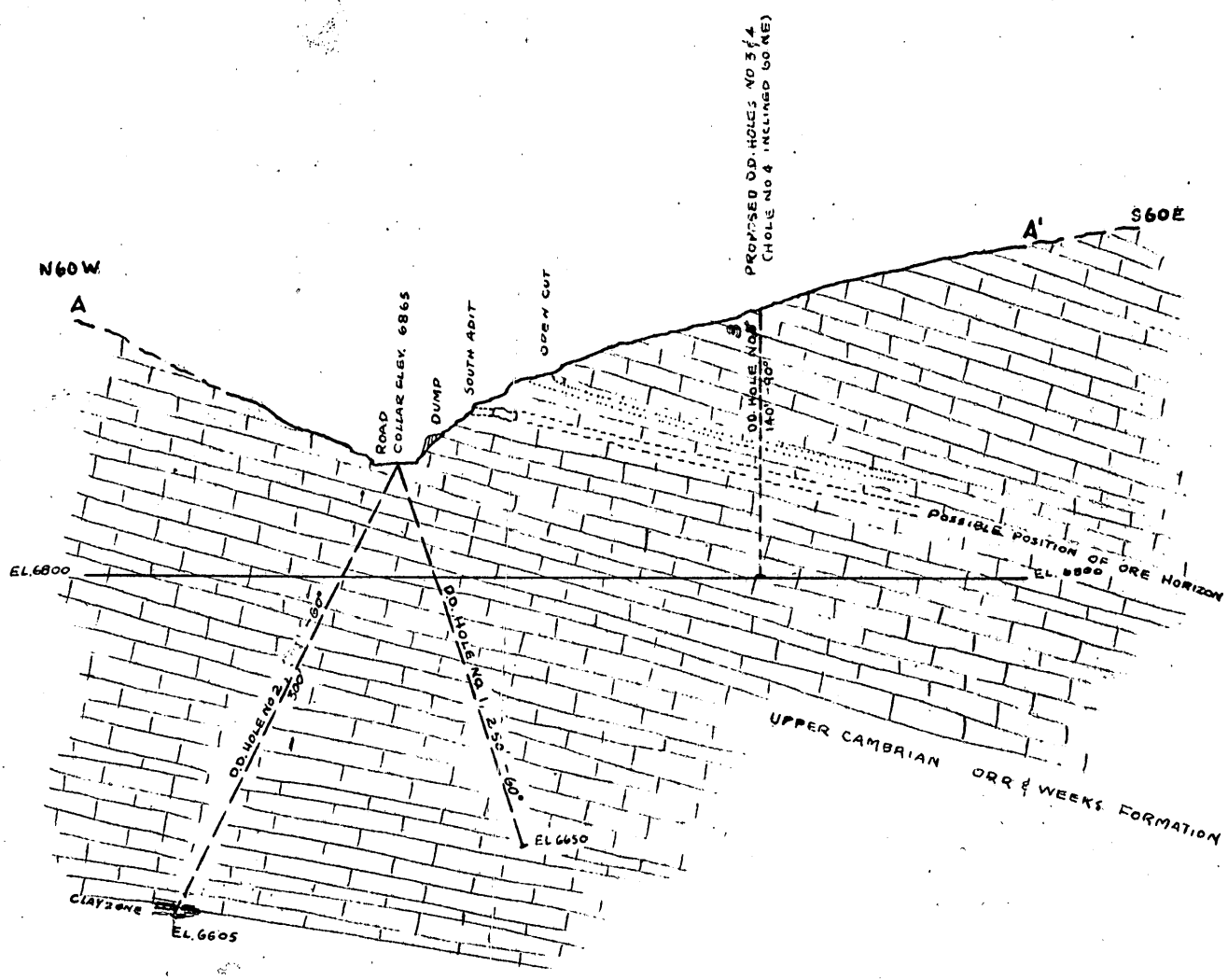


FIG. 4

R. Osterstock, MARCH 1955

VERTICAL PROJECTION OF DIAMOND DRILL EXPLORATION OF THE BROWN QUEEN MINE AREA, MILLARD COUNTY, UTAH

LOOKING NORTHEAST

HORIZONTAL AND VERTICAL SCALE

0 100 200 300 FEET

Assumed Datum Plane

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

DMEA
Date Rec'd
MAR 17 1955
BUREAU OF MINES
Denver, Colorado

March 15, 1955

Memorandum

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

From: Stephen R. Wilson

Subject: Docket No. DMEA-3125 (Tungsten), Contract Idm-2696, Willden and Petty, Millard County, Utah

Attached are eight copies of a memorandum prepared by M. E. Howes relative to an amendment request received from the subject operator. Six copies of the amendment request letter dated December 3, 1954, were transmitted to your office December 9, 1954.

The inspecting engineer recommends that the contract be amended to allow a change in location of the remaining diamond drilling. Recommendation is also made that the project be recessed to May 15, 1955, and the expiration date of the contract be extended to July 15, 1955. I concur in the recommendations.

Stephen R. Wilson
Stephen R. Wilson

Enclosure

S. R. Wilson March 15, 1955

M. H. Howes

Docket No. DMEA-3235 (Tungsten), Contract Idm-1698, Willden and Petty, Millard County, Utah. Memorandum report on request of operator to change location of last diamond drill hole, and to recess the project because of adverse weather.

Since two of the three diamond-drill test holes, namely No. 3 and No. 1, have failed to encounter any tungsten mineralization or to reach the underlying quartz monzonite, the operator believes that there is very little hope of discovery in the present proposed location of the third, or No. 2 hole. The collars of the holes were located in the bottom of the gulch, several feet below the lowest ore in the mine workings. The operator suggests that there is a greater probability of the discovery of ore and the determination of its origin by drilling from a point on the hill above the mine workings, and requests permission to do this with the remaining 250 feet of allowable drilling. He also requests that the project be recessed until late April or May, 1955.

It is recommended that the contract be amended to allow drilling the remaining contract diamond-drill footage as outlined in R. W. Osterstock's memorandum to E. N. Harshman, dated March 14, 1955. It is also recommended that the operator be permitted a recess until May 15, 1955. This will necessitate extension of the contract period from the present expiration date, February 9, 1955, to July 15, 1955, to allow sufficient time to complete the drilling.

M. H. Howes

M. H. Howes

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

December 9, 1954

Memorandum

To: W. H. King, Executive Officer, DMEA Field Team, Region IV

From: Chief, Minerals Development Branch, Mining Division, Region IV

Subject: Docket No. DMEA-3235 (Tungsten), Contract Idm-2698, Willden and Petty, Millard County, Utah

Attached are six copies of a letter from the subject operator dated December 3, 1954. The letter contains requests that the contract be amended to change the location of diamond drill holes and also that the contract period be extended. We have retained sufficient copies of the letter in this office to permit preparation of recommendations.

Stephen R. Wilson
Stephen R. Wilson

Enclosure

December 3, 1954
Delta, Utah

Mr. Stephen R. Wilson, Chief
Minerals Development Branch
1600 East First South St.
Salt Lake City 1, Utah

Re: Docket No. DMMA-3235,
Contract Ism-1690

Dear Mr. Wilson:

We find that if this project is not renewed, it will be impossible to complete the work prescribed by the expiration date of February 9, 1955 as there is now approximately six inches of snow at the mine which would make it impossible to reach the site with any kind of heavy drilling equipment. As it is so late in the season, there is little question but that the snow will remain on the ground and any storm during the winter would further hazard any contemplated drilling. Undoubtedly, work could not be commenced at the site until late April or May of 1955.

As you undoubtedly know, two of the three test holes have been drilled. One to a depth of 300 feet and the other to a depth of 250 feet, without any indication whatever of reaching granite. Both of the holes are located below the exposed ore body and as no positive indications were found, it would seem to us that a new test hole above the ore deposit would definitely tell us where the ore might have come from or whether the ore body is completely isolated. We realize that Tungsten deposits are usually patchy, but most certainly we should try every means of definitely finding out whether or not this is an economic ore body.

We will greatly appreciate your consideration of the above request. If any additional information is required kindly so inform us. If this information cannot be given by letter, we would greatly appreciate meeting with you at any time you select. We wish to thank you for your fine cooperation and attention you have given this project to date.

Very truly yours,

WILLDEN AND PATTY

Al Willden

Al Willden

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

402

224 New Customhouse
Denver 2, Colorado

November 30, 1954

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3235 (Tungsten), Contract Idm-E698, Willden and Petty, Millard County, Utah

Enclosed are the original and two copies of Amendment No. 1 to Contract Idm-E698 which was prepared in this office and has been executed to establish a unit cost for assaying to effect consistency between the recitation in Exhibit "A" and the stipulations under Article 4 of the contract form.

Copies of the amendment have been given to the operator, the Finance Office, Region IV, and a copy has been retained for our files.

W. H. King

Enclosures

Amend #1

Amend #1

No. 1

AMENDMENT OF CONTRACT: No. Idm-E698

Contract Docket No. DMEA 3235, dated August 9, 1954, between the United States of America and Willden and Petty, a partnership consisting of Earl B. Willden, Al Willden and Lionel A. Petty, is hereby amended as follows, effective as of the date of the contract:

> Referring to EXHIBIT "A" attached to Exploration Project Contract form MF-200(A) (February 1952), caption "Estimated Costs of the Project" delete the following: Assaying as required to a maximum of $200.00 and in lieu thereof substitute the following: A maximum of 40 tungsten assays at $5.00 each. Delete footnote 3/ in its entirety and in lieu thereof substitute the following: "3/ claims for reimbursement for analysis charges are to be supported with a copy of assay return showing results.

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.

Dated: NOV 30 1954

WILLDEN AND PETTY

By Earl B. Willden
Earl B. Willden, partner

By Al Willden
Al Willden, partner

By Lionel A. Petty
Lionel A. Petty, partner

UNITED STATES OF AMERICA

By W H King
W. H. King, Executive Officer
DMEA Field Team, Region IV

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

407

224 New Customhouse
Denver 2, Colorado

August 11, 1954

REGISTERED

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3255 (Tungsten), Contract Idm-E698, Willden and Petty, Millard County, Utah

Enclosed are the original and two copies of Contract Idm-E698. Copies of this contract have been given to the operator, the Fiscal Officer, Region IV, and a copy has been retained for our files.

W H King
W. H. King

Encls.

MF-200 (A)
(February 1952)

DOCKET DMEA 3235

COMMODITY Tungsten

Idm-E698

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

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this 9th day of August, 1954, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Willden and Petty, Delta, Utah, a partnership consisting of Earl B. Willden, Al Willden, and Lionel A. Petty, all of Delta, Utah

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 Utah, County of Millard, described as follows:[3] Brown Queen, Brown Queen No. 1, Brown Queen No. 2, Brown Queen No. 3, Brown Queen No. 4, Brown Queen No. 5, Brown Queen No. 6, and Brown Queen No. 7, unpatented claims all located in T-18-S, R-14-W and filed and recorded at Millard County Courthouse, Fillmore, Utah.

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: None

[redacted]

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 Thirty (30) days from the date of this contract shall commence work on a project of exploration for[5] Tungsten

in or upon the described land; and shall bring the project to completion within a period of six (6) 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 seventy-five (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 $4,620.00, which is 75 percent of $6,160.00, 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.~~ **See Annex I substituted for Article 6.**

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.

Earl Williams
Al W. Williams
Lionel A. Petty
(Operator)

By .....

THE UNITED STATES OF AMERICA

By W H King
Executive Officer, DMEA
Field Team, Region IV

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

Estimated Costs of the Project

A maximum of 800 feet of diamond core drilling at $7.45 per foot, including all costs for supervision, engineering, labor, equipment, supplies, core boxes and other costs incurred in obtaining and storing the core.....	$5,960.00	2/
Assaying as required to a maximum of $200.00...	200.00	3/
Total Estimated Cost.....	$6,160.00	
Government Participation at 75%....	$4,620.00	

2/ Reimbursement for diamond drilling will be on the basis of holes completed to their objective and charges must be supported by a certified copy of the drill logs of the hole or holes for which reimbursement is claimed.

3/ Requests for the reimbursement of the Government's portion of assaying charges is to be supported by suitable copies of assay invoices showing charges and results.

DMEA DOCKET 5235

EXHIBIT "A"

Description of the Work

Diamond drill three holes, fanned out from a point in the bottom of the canyon, approximately 30 feet N 35° E of the discovery monument of the Brown Queen claim to explore the tactite zones in the vicinity of the granite stock intrusive for occurrences of scheelite and other tungsten minerals. Location of drill holes are shown on attached maps.

The approximate attitude and maximum depth of the drill holes are to be as follows: 1/

Hole No.	Inclination	Direction	Maximum Depth
1	-60°	West	300 feet
2	-50°	South	250 feet
3	-60°	N 65° E	250 feet
		Total Maximum Footage	800 feet

All core is to be split and one-half stored in suitable core boxes and retained for the use of the Government. The mineralized portions of the remaining core are to be assayed for WO_3 content.

1/ In the event intrusive rocks are encountered in the drill holes before their maximum footages are completed, the drill holes should be continued no more than 25 feet in the intrusives in order to insure that the main intrusive body is being penetrated rather than a dike or sill.

ANNEX I

The following provisions are in lieu of 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 the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

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

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

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

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

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

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

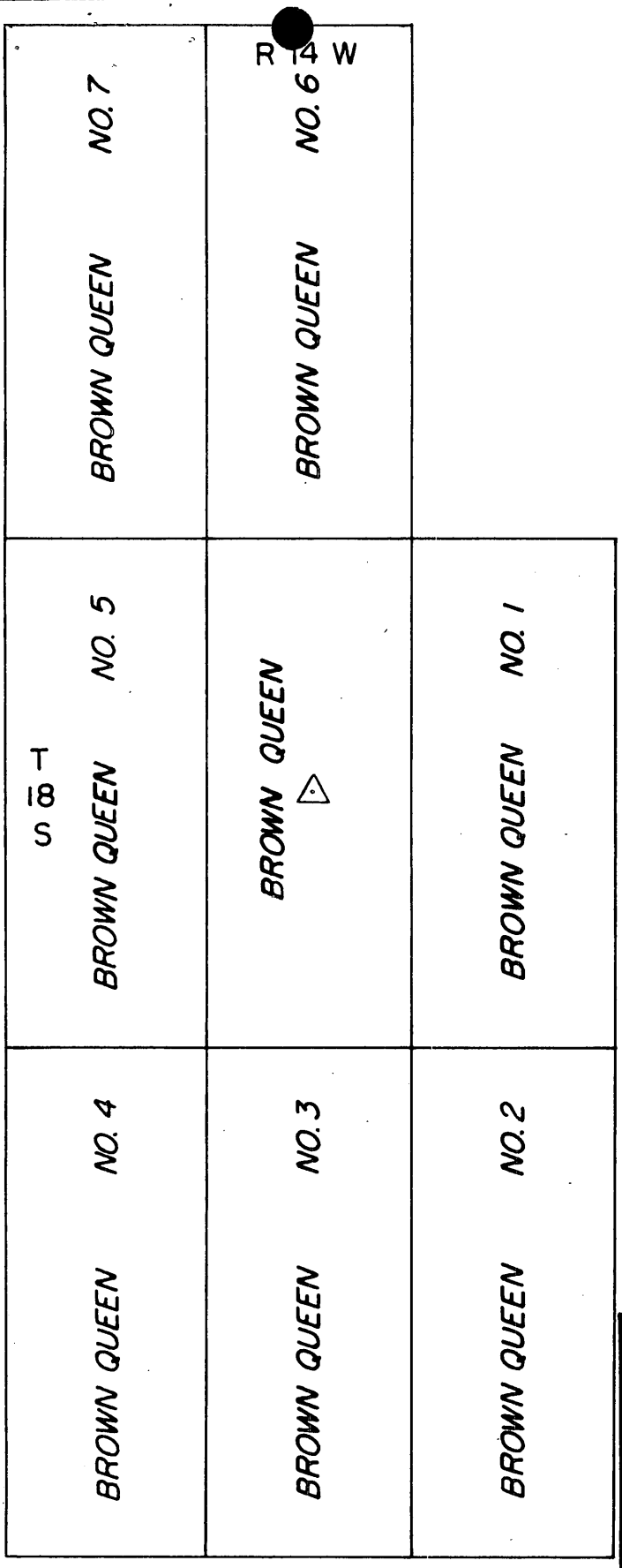
f. Lien for payment.--To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

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

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

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

58694

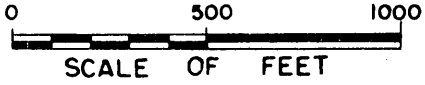


LEGEND

△ LOCATION MONUMENT

NOTE

PRESENT MINE WORKINGS ARE LOCATED IN CENTER OF BROWN QUEEN CLAIM.



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

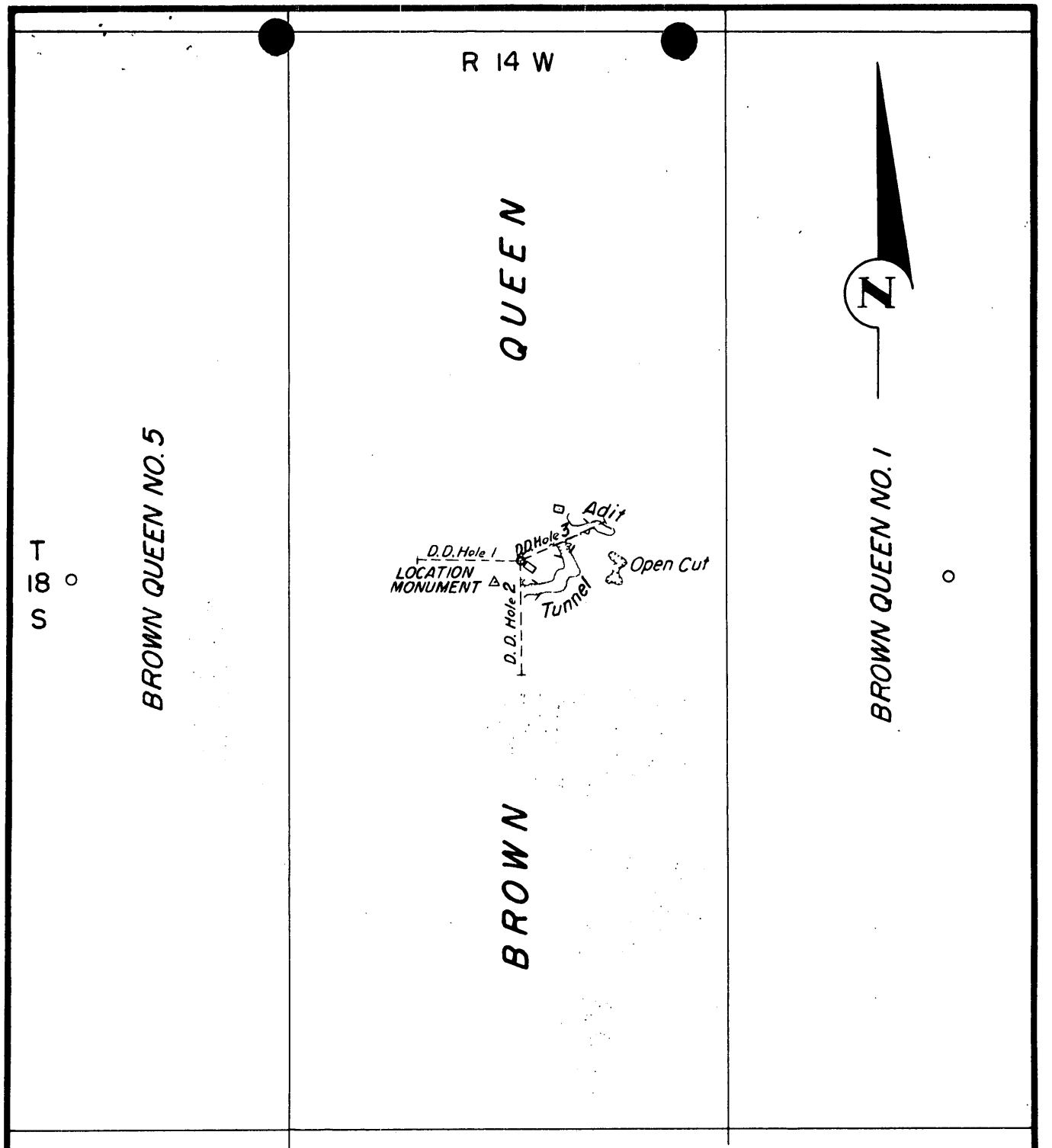
Fig. 2 DMEA Docket No. 3235

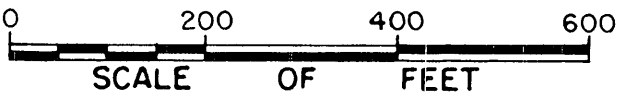
Claim Map

WILLDEN AND PETTY
BROWN QUEEN GROUP

MILLARD COUNTY, UTAH

ENGINEER: *M. H. HOWES*	DATE: JUNE 22, 1954
TRACED: JUNE, 1954; A.P.T.S.	700 - 187 - E
CHECKED:	





U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

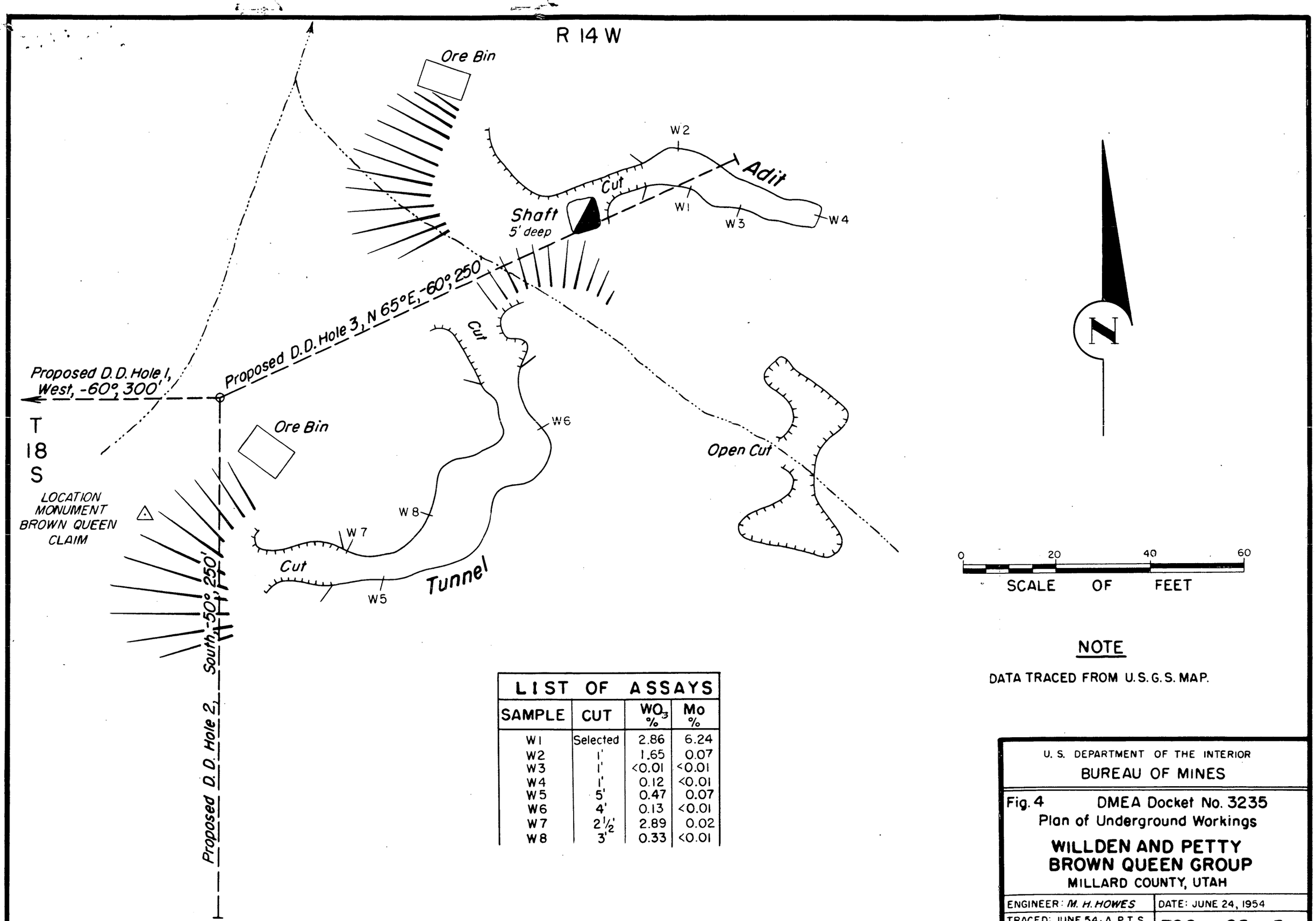
Fig. 3 DMEA Docket No. 3235

Location of Mine Workings

WILLDEN AND PETTY
BROWN QUEEN GROUP

MILLARD COUNTY, UTAH

ENGINEER: *M. H. HOWES*	DATE: JUNE 21, 1954
TRACED: JUNE, 1954; A.P.T.S.	700 - 186 - E
CHECKED:	



LIST OF ASSAYS			
SAMPLE	CUT	WO_3 %	Mo %
W1	Selected	2.86	6.24
W2	1'	1.65	0.07
W3	1'	<0.01	<0.01
W4	1'	0.12	<0.01
W5	5'	0.47	0.07
W6	4'	0.13	<0.01
W7	2½'	2.89	0.02
W8	3'	0.33	<0.01

NOTE

DATA TRACED FROM U.S.G.S. MAP.

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 4 DMEA Docket No. 3235
Plan of Underground Workings

WILLDEN AND PETTY
BROWN QUEEN GROUP
MILLARD COUNTY, UTAH

ENGINEER: *M. H. HOWES*	DATE: JUNE 24, 1954
TRACED: JUNE 54; A. P. T. S.	700 - 188 - F
CHECKED:	

MF-201
(June 1951)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

SUBORDINATION AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the undersigned is the holder of a mortgage, claim, lien, or encumbrance identified and described as follows*:

.....

.....

upon that certain parcel of ground described in a certain Exploration Project Contract dated

....., 195...., between .....

.....,

and the United States of America;

NOW, THEREFORE, the undersigned does by these presents subordinate all of his right, title, and interest in said mortgage, claim, lien, or encumbrance to the right, title, and interest of the United States of America under the provisions of said Exploration Project Contract, and agrees that the lien and claim of the United States of America under the provisions of said contract shall be prior to the undersigned's rights under the provisions of said mortgage, claim, lien, or encumbrance; and

The undersigned agrees to commit no act nor assert any right, title, or interest under said mortgage, claim, lien, or encumbrance that might contravene or conflict with the prior lien and claim of the United States of America under the provisions of said Exploration Project Contract.

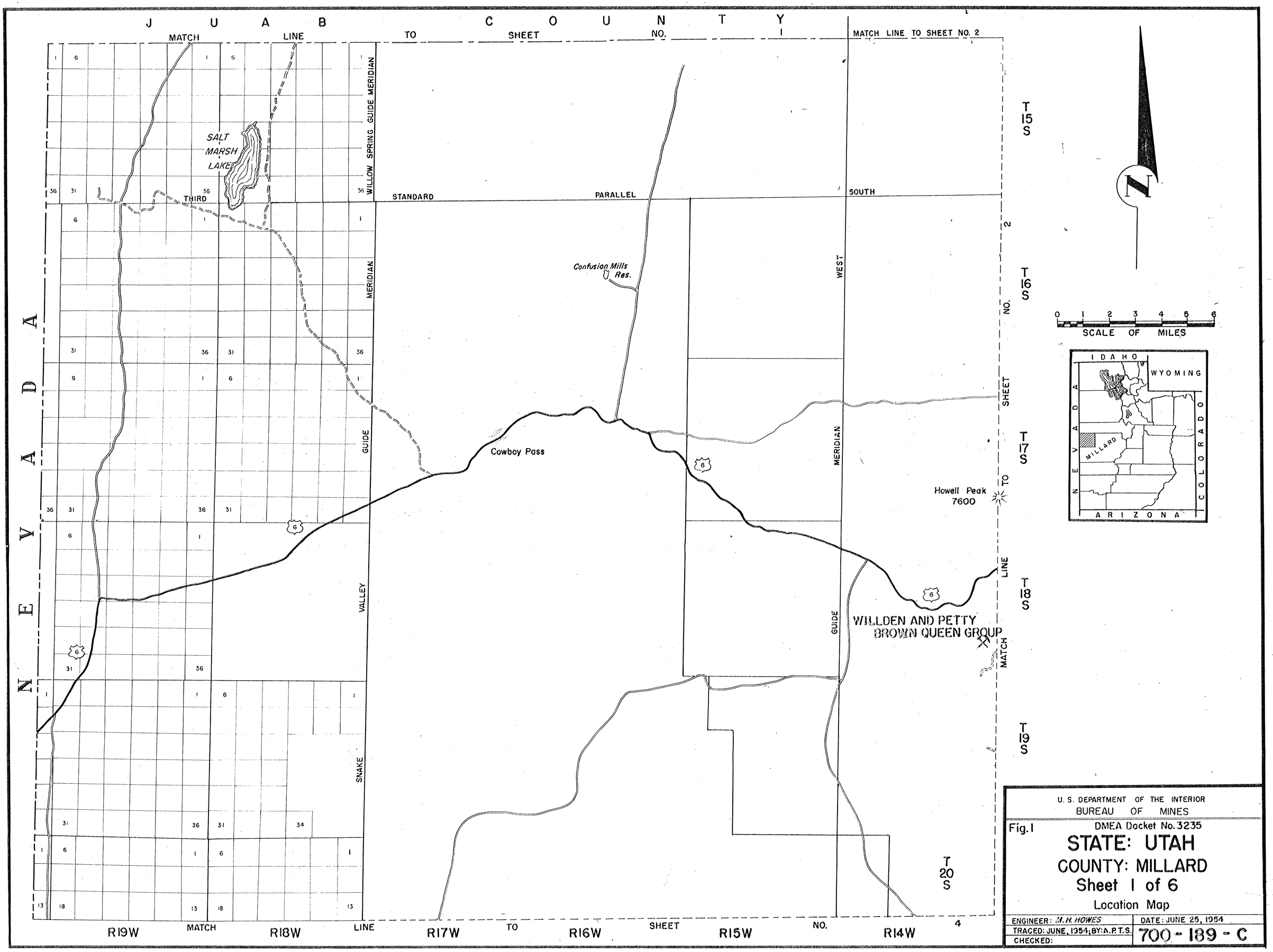
This undertaking and covenant shall be binding upon the heirs, successors, and assigns of the undersigned.

Dated this ..... day of ....., 195....

.....

*Include date of the instrument, and if recorded, book, page, and county of record.

U. S. GOVERNMENT PRINTING OFFICE 16—64581-2



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 1

DMEA Docket No. 3235

STATE: UTAH
COUNTY: MILLARD
Sheet 1 of 6
Location Map

ENGINEER: M.H. HOWES	DATE: JUNE 25, 1954
TRACED: JUNE, 1954; BY: A.P.T.S.	700 - 189 - C
CHECKED:	