



AEC/MED INVOLVEMENT AT SITE

Control

- AEC/MED managed operations
- AEC/MED responsible for accountability
- AEC/MED overviewed operations
- Contractor had total control
- unknown

- Health Physics Protection
  - Little or None
  - AEC/MED responsibility
  - Contractor responsibility

MATERIALS HANDLED:

Type (on basis of records reviewed)

- No Radioactive
- Natural Radioactive from Feed Materials Production
  - Ore
  - Refined Source Material
  - Residue
- Natural Radioactive Material from Non-Nuclear Activities
- Man-Made
- Other

Comment The Laboratory Continue Ore treatment experiment  
Similar to commercial operations

Quantities (on the basis of records reviewed)

- None
- Production Quantities
- Small Amounts

Comment This Facility was a process

OTHER PERTINENT FACTS:

- Facility was Licensed
  - During AEC/MED-Related Operations
  - For Similar Activities
  - For Other Activities

Comment \_\_\_\_\_

Commercial Production Involving Radioactive Material during AEC/MED Operations

Facility was Decontaminated and Released

Availability of Close Out Records

- None
- Some
- Sufficient

Radioactive Status:

	YES	MAYBE	PROBABLY NOT	NOT
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Contaminated Potential for Exposure (accessible)	---	---	<input checked="" type="checkbox"/>	---
	---	---	<input checked="" type="checkbox"/>	---

QUANTITY OF RECORDS AVAILABLE:

- Very Little
- Some
- Sufficient

PROBABILITY OF FINDING ADDITIONAL RECORDS:

- Low
- Possible
- High

RECOMMENDATIONS:

- Eliminate
- Consider for Remedial Action
- Collect More Data

Comment Denver Equipment was contracted to apply perme process development  
laboratory to treatment studies on carbon like ore. This work is  
similar to work conducted commercially and involved low concentrations and

REFERENCES: Small quantities of uranium. Elimination recommended.

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SUMMARY

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This document consists of <sup>162</sup>~~157~~ pages  
Copy No. 3 of 4 Series B

SUMMARY PART OF CONTENTS

MANHATTAN DISTRICT HISTORY  
BOOK VII, FEED MATERIALS, SPECIAL PROCUREMENT AND GEOGRAPHICAL EXPLORATION  
VOLUME 2, GEOGRAPHICAL EXPLORATION

CLASSIFICATION CANCELLED  
OR CHANGED TO-----  
BY AUTHORITY OF DOE/DPC  
JOHN K. BLOOMOCK  
REVIEWED BY *[Signature]* DATE 9/4/24

~~SECRET~~

~~RESTRICTED DATA~~  
ATOMIC ENERGY ACT 1946  
SPECIFIC RESTRICTED DATA  
CLEARANCE REQUIRED

MED  
History

Book VII  
Vol. 2

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the close of 1943, preliminary testing of the Uruvan type of ore had been completed and the preliminary testing of the other types of ore from the region was in progress. A research investigation, directed toward the development of suitable processes for obtaining pitchblende concentrate from Jamestown, Colorado, fluorite ores, was completed in 1944. (App. B-5: 5.) In addition, toward the end of the contract, work was done on nearly every type of uranium ore occurring throughout the world. The metallurgical research staff comprised two of Union Mines' engineers and a varying number of Denver Equipment Company Laboratory personnel as required. (Reports of all studies are listed in Appendix B-5.) The metallurgical research work by Union Mines should be considered as of a somewhat preliminary nature but the results of this work may prove to be of some help in future studies of beneficiation and metallurgical processes for uranium ores.

b. The division was activated in September 1943 with the appointment of Mr. W. W. Handley, formerly metallurgist and director of research for Union Miniere du Haut Katanga, as chief of the division. Mr. Carl W. Sawyer, formerly metallurgist for the United States Vanadium Corporation, was employed on 12 December to assist Mr. Handley. Work of the division proceeded as follows:

(1) By 1<sup>st</sup> October a working agreement had been reached with the Denver Equipment Co., Denver, Colo., whereby the research investigations of the division would be made in the laboratories of that company, which had complete facilities for the accomplishment of the investigations contemplated. Moreover, the company's laboratories were

relatively near the Colorado Plateau Region, and the agreement provided that all the investigations would be under the direct supervision and control of Union Lines personnel.

(1) The working agreement with Denver Equipment was replaced on 1 November 1944 by a contract which included provisions to the effect that Union Mines had permission to use all the batch laboratory facilities that Denver Equipment maintained for ore treatment studies; that any new equipment needed would be obtained on request of Union Mines and at its expense; that as many of Denver Equipment's staff of trained technicians as could be spared would be assigned to the work, but Union Mines could accept or reject the services of such personnel as it deemed advisable; and that Union Mines could assign its own employees to the work if it so desired. The contract also expressed assurance that the necessity for secrecy would be respected, and that all patentable developments would be entirely the property of Union Mines.

(2) Arrangements were made by Union Mines with W. S. Burlingame, an assayer in Denver, Colo., for the chemical analysis of test products, as required by the division.

(3) Actual ore-testing investigations in the laboratories of Denver Equipment were begun on 9 November.

(4) Four separate reports on the development of concentration methods for magnetite ores were prepared by the division and submitted by Union Mines. (App. B-5: 1, 2, 3, 4.)

(5) Laboratory tests on the Craven type of ore were completed on 17 June.

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(7) In 1944 a preliminary report on the development of suitable processes for concentrating carnotite ores from the Colorado Plateau Region was submitted by the Contractor. Concentration tests were made on heavy concentrates from the Witwatersrand, Union of South Africa, and on other products submitted by field engineers, results of which are given in reports listed in Appendix B-5. In the instance of the Witwatersrand it was indicated that concentration of uranium was feasible.

(8) In early 1945 concentration tests began on ores from the Urgeirica and Reboleiro mines in Portugal, Shinkolobwa Mine (Belgian Congo), and from the White Signal District, (New Mexico.) Results of these investigations completed in early 1946 are described in reports listed in Appendix B-5.

1-8. General Summary of Worldwide Uranium and Thorium Resources.

The productive possibilities of the various countries, as indicated by the results of field reconnaissance and exploration in the countries and literature search, are presented below:

a. Uranium

<u>Country</u>	<u>Uranium Production Possibilities</u>	<u>Remarks</u>
Belgian Congo	Excellent	High-grade ore (over 2% U <sub>3</sub> O <sub>8</sub> ). World's most important producer. Represents 80% or more of the entire world's high grade resources.