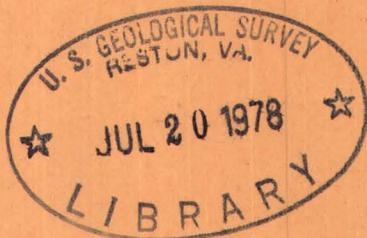


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# Bibliography and index of U.S. Geological Survey trace elements and related reports through June 1956

Compiled by Paul E. Soister, Dora R. Conklin, and Mary D. Bowman



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*Trace Elements Investigations Report 600*

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Geology and Mineralogy

UNITED STATES DEPARTMENT OF THE INTERIOR  
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BIBLIOGRAPHY AND INDEX OF  
U. S. GEOLOGICAL SURVEY TRACE ELEMENTS AND RELATED REPORTS  
THROUGH JUNE 1956\*

Compiled by

Paul E. Soister, Dora R. Conklin, and Mary D. Bowman

December 1956

Trace Elements Investigations Report 600

This preliminary report is distributed without editorial and technical review for conformity with official standards and nomenclature. It is not for public inspection or quotation.

\*This report concerns work done on behalf of the Division of Raw Materials and Division of Research of the U. S. Atomic Energy Commission.

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BIBLIOGRAPHY AND INDEX OF U. S. GEOLOGICAL SURVEY TRACE ELEMENTS AND  
RELATED REPORTS THROUGH JUNE 1956

Compiled by Paul E. Soister, Dora R. Conklin, and Mary D. Bowman

INTRODUCTION

This bibliography supersedes TEI-500, "U. S. Geological Survey Trace Elements and related reports through 1954."

Part I is a numerical list of U. S. Geological Survey Trace Elements Investigations and Memorandum reports<sup>1/</sup>. This part lists reports that have been transmitted to the U. S. Atomic Energy Commission and also reports in preparation (followed by an asterisk) for which tentative titles were available on June 30, 1956. If a report or part of a report has been published, the fact is indicated by the abbreviation of the medium of publication. (See also Part II.)

Part II is a reference guide to Trace Elements and related reports that are available to the public. (Part II supersedes Part I of Bulletin 1019-B.) These reports are grouped according to type of publication or release. If a report or part of a report has been published in more than one form, cross-references indicate the other forms of publication. Publications in preparation or in press on June 30, 1956, are designated by an asterisk.

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<sup>1/</sup> Reports prepared by the Geologic Division of the Geological Survey on behalf of the Division of Raw Materials and the Division of Research of the U. S. Atomic Energy Commission.

Part III is an author index. The words "with" and "and" are used to indicate seniority of authorship. For example, a listing of Black and White indicates that Black is the senior author. A listing of Black with White indicates that White is the senior author.

Part IV is an index for finding reports on specific areas or subjects. Information for the index was taken from titles, tables of contents, and abstracts of unpublished reports and from titles of published reports. The index in TEI-500 was used as a guide.

The following abbreviations have been used:

- B - Bulletin
- C - Circular
- J - Journal
- MC - Maps and charts
- MFO - Microcard form only of TE report at AEC depository libraries
- NSA - Nuclear Science Abstracts
- OF - Open file
- P - Professional Paper
- RME - Division of Raw Materials Exploration report
- TEI - Trace Elements Investigations report
- TEM - Trace Elements Memorandum report
- TIE - Technical Information Service Extension release

## PART I. NUMERICAL LIST OF TRACE ELEMENTS REPORTS

(\* Indicates report is in preparation. Title subject to change).

Abbreviations used: B, Bulletin; C, Circular; J, Journal; MC, Maps and charts; MFO, Microcard form only of TE report at AEC depository libraries; NSA, Nuclear Science Abstracts; OF, Open file; P, Professional Paper; TIE, Technical Information Service Extension.

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3. RME Reports

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3015. Hansen, L. A. and White, A. M., Monazite placers on South Muddy Creek, McDowell County, and Silver Creek, Burke County, North Carolina: (Official use only). March 1954. (TIE; RME-3115, TIE\*).
3016. Hansen, L. A. and Cuppels, N. P., Monazite placer on the First Broad River and its tributaries, Cleveland County, North Carolina: (Official use only). August 1954. (TIE; RME-3116, TIE).
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3018. Hansen, L. A. and Caldwell, D. W., Monazite placers on Rabon Creek, Laurens County, and Big Generostee Creek, Anderson County, South Carolina: (Official use only). February 1955. (TIE; RME-3118, TIE\*).
3019. Hansen, L. A. and Theobald, P. K., Jr., Monazite placers of the Broad River and Thicketty Creek, Cherokee County, South Carolina: (Official use only). May 1955. (TIE; RME-3126, TIE\*).

## PART II. TRACE ELEMENTS AND RELATED REPORTS

## AVAILABLE TO THE PUBLIC

Many U. S. Geological Survey Trace Elements / and related reports have been made available to the public, either by open-file release, reproduction and distribution by Technical Information Service Extension (referred to as TIE), U. S. Atomic Energy Commission, or publication by the Geological Survey or in a scientific journal.

The following list has been compiled as a reference guide to Geological Survey Trace Elements reports on radioactive raw materials that have been made available to the public, through June 30, 1956. These reports are listed according to the type of publication or release. Some reports have been released in more than one form, for which cross-references are indicated in parentheses. The abbreviations for the form of publication have been explained under Introduction.

1. Reports released in open file

(\* Indicates report is in preparation)

Reports released in open file may be consulted at the U. S. Geological Survey Library, Room 1033, GSA Building, Washington 25, D. C., and at various depositories, whose addresses are indicated after the date of open file, either by symbol or complete address. Symbols are used for the following depositories:

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/ Reports prepared by the Geologic Division of the Geological Survey on behalf of the Division of Raw Materials and the Division of Research of the U. S. Atomic Energy Commission. (TEI - Trace Elements Investigations Report; TEM - Trace Elements Memorandum Report; reports with no TE designation are not numbered in the Trace Elements Reports Series.)

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- B - Office of the Director, Montana Bureau of Mines and Geology, Butte, Montana
- BA - Atomic Energy Commission, Butte Suboffice, Butte, Montana
- D - Geological Survey Public Inquiries Office, Room 468, New Customhouse, Denver, Colorado
- DA - Atomic Energy Commission, Denver Area Office, Denver Federal Center, Denver, Colorado
- GJ - Geological Survey, Grand Junction, Colorado
- GJA - Atomic Energy Commission, Grand Junction Operations Office, Grand Junction, Colorado
- IM - Idaho Bureau of Mines and Geology, Moscow, Idaho
- LA - Geological Survey Public Inquiries Office, Room 1030, Bartlett Building, Los Angeles, California
- R - Atomic energy Commission, Rapid City Suboffice, "Prep" Bldg., South Dakota School of Mines and Technology, Rapid City, South Dakota
- SF - Geological Survey Public Inquiries Office, Room 724, Appraisers Building, San Francisco, California
- SL - Geological Survey Public Inquiries Office, Room 504, Federal Building, Salt Lake City, Utah
- SIA - Atomic Energy Commission, Salt Lake Area Office, Salt Lake City, Utah
- T - Arizona Bureau of Mines, University of Arizona, Tucson, Arizona
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a. Trace Elements Investigations Reports

TEI

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- 71. Hinrichs, E. N., The pegmatites of the Errington-Thiel mine, Elko County, Nevada: Dec. 28, 1949; Office of Director, Nevada Bureau of Mines, Reno, Nev.; Cornell University Library, Ithaca, N. Y.
- 104. Fletcher, M. H., May, Irving, and Slavin, Morris, A transmission fluorimeter for use in the fluorimetric method of analysis for uranium: Oct. 12, 1950. (B-1006, Pt. 11).
- 109. Fischer, R. P., The Uravan mineral belt: July 7, 1951: GJ; SL. (B-988-A).
- 118. Silverman, S. R., Fuyat, R. K., and Weiser, J. D., The quantitative determination of calcite associated with carbonate-bearing apatites: Oct. 19, 1951: D; SL; T. (TIE; J-208).
- 120. Fletcher, M. H. and May, Irving, An improved fluorimeter for the determination of uranium in fluoride melts: Oct. 12, 1950. (TIE; B-1006, Pt. 10).

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125. Sims, P. K., Tooker, E. W., and Osterwald, F. W., Radioactive deposits in Eureka Gulch area, Central City district, Gilpin County, Colorado (3 geologic maps only): Feb. 15, 1954: D. (B-1032-A).
127. Stieff, L. R. and Stern, T. W., The preparation of nuclear-track plates and stripping films for the study of radioactive minerals: Feb. 26, 1951. (J-235).
129. Stern, T. W., A catalog of study material of radioactive minerals: Oct. 19, 1951: D; SL; T. (TIE).
133. Fletcher, M. H., May, Irving, and Anderson, J. W., The design of the Model V transmission fluorimeter: Oct. 19, 1951: D; SL; T. (TIE; B-1006, Pt. 12).
138. Staatz, M. H. and Trites, A. F., Jr., Geology of Quartz Creek pegmatite district, Gunnison County, Colorado: July 15, 1952: D; SL; Columbia University Library, New York, N. Y. (P-265).
139. Thurston, W. R., Pegmatites of the Crystal Mountain district, Larimer County, Colorado: July 15, 1952: D; SL; Columbia University Library, New York, N. Y. (B-1011).
144. Phair, George and Onoda, Kiyoko, Hydrothermal uranothorite in fluorite breccias from the Blue Jay mine, Jamestown, Boulder County, Colorado: Oct. 19, 1951: D; SL; T. (TIE; J-188).
- 148A. Rabbitt, J. C., Summary of the research work of the Trace Elements Section, Geochemistry and Petrology Branch, for the period April 1, 1948 -- December 31, 1950: Oct. 19, 1951: D; SL; T. (TIE).
151. Rabbitt, J. C., Summary of the research work of the Trace Elements Section, Geochemistry and Petrology Branch, for the period January 1 -- March 31, 1951: Oct. 19, 1951: D; SL; T. (TIE).
152. Cuttitta, Frank, A photometric method for the estimation of the oil yield of oil shale: Oct. 19, 1951: D; SL; T. (TIE; B-992).
168. Kaiser, E. P., King, R. U., Wilmarth, V. R., Stugard, Frederick, Jr., Wyant, D. G., Gott, G. B., and others, Selected papers on uranium deposits in the United States: June 10, 1952: D. (C-220; J-103, 127, 129, 241, 273, 275).
176. Wilmarth, V. R. and Vickers, R. C., The Robinson and Weatherly uraniumiferous pyrobitumen deposits near Placerville, San Miguel County, Utah: Sept. 16, 1953: D; GJ.
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246. Swanson, R. W., McKelvey, V. E., and Sheldon, R. P., Progress report on investigations of western phosphate deposits: June 21, 1953: D; IM; SL; W; Geol. Survey, Montpelier, Idaho. (C-297).
254. Stugard, Frederick, Jr., Physical exploration for uranium during 1951 in the Silver Reef district, Washington County, Utah: Jan. 11, 1954: D; SL.
258. Cressman, E. R., Geology of the Dry Valley quadrangle, Idaho: Aug. 25, 1952: IM; SL; W. (B-1015-I).
259. Meyers, W. B., Geology and mineral deposits of the northwest quarter Willis quadrangle and adjacent Brown's Lake area, Beaverhead County, Montana: July 28, 1952: B; IM; W.
260. Gulbrandsen, R. A., McLaughlin, K. P., Honkala, F. S., Clabaugh, S. E., and Krauskopf, K. B., Geologic map and structure sections of the Johnson Creek quadrangle, Caribou County, Idaho: Aug. 25, 1952: IM; SL; W. (B-1042-A\*).
261. Gillerman, Elliot and Whitebread, D. H., The uranium-bearing nickel-cobalt-native silver deposits in the Black Hawk district, Grant County, New Mexico (Fig. 3 only -- "Geologic map of the Black Hawk mining district, Grant County, New Mexico): July 14, 1954: D; IA; SF; SL; T; Bur. of Mines, Mineral Resources, Socorro, N. Mex. (B-1009-K).
263. McKelvey, V. E., Swanson, R. W., and Sheldon, R. P., The Permian phosphorite deposits of western United States: Mar. 30, 1953: D; SL; W. (J-154).
265. Cathcart, J. B., Blade, L. V., Davidson, D. F., and Ketner, K. B., The geology of the Florida land-pebble phosphate deposits: Mar. 30, 1953: D; SL. (J-41).
271. McKelvey, V. E., Cathcart, J. B., Altschuler, Z. S., Swanson, R. W. and Lutz, Katharine, Domestic phosphate deposits: Mar. 30, 1953: D; SL; W; Geol. Survey, Plant City, Fla. (J-150).
279. Shoemaker, E. M. and Luedke, R. G., Map of the uranium region of the Colorado Plateau: Mar. 30, 1953: D; GJ; SL; T; N. Mex. Bur. of Mines & Mineral Resources, Socorro, N. Mex.
282. Becraft, G. E., Meschter, D. Y., and Gross, E. B., Geologic map of the Comet area, Jefferson City quadrangle, Jefferson County, Montana: Oct. 8, 1952: B; SL; W. (C-277).
287. Finch, W. I., Geology of the Shinarump No. 1 uranium mine, Seven Mile Canyon area, Grand County, Utah: Jan. 11, 1954: GJ; SL. (C-336).

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304. Sims, P. K., Drake, A. A., and Moench, R. H., Preliminary geologic and vein maps of part of the Central City district, Gilpin and Clear Creek Counties, Colorado: Jan. 11, 1954: D.
312. Lowell, W. R., Geologic map and structure sections of the southwest quarter Willis quadrangle, Beaverhead County, Montana: Mar. 30, 1953: B; IM; W; Dept. of Geology, Indiana University, Bloomington, Ind.
323. Honkala, F. A., Preliminary report on geology of the phosphate deposits in the Centennial Range, Montana-Idaho: June 22, 1953: B; IM; SL; U; W; Wyoming Geol. Survey, Laramie, Wyo. (J-116).
345. Troyer, M. L., McKay, E. J., Soister, P. E., and Wallace, S. R., Summary of investigations of uranium deposits in the Pumpkin Buttes area, Johnson and Campbell Counties, Wyoming (Fig. 1 only -- "Geologic map of the east-central part of the Pumpkin Buttes area, Campbell County, Wyoming"): Aug. 20, 1954: D; LA; SF; SL; Geol. Survey offices at Geology Hall, Univ. of Wyo., Laramie, Wyo.; 1214 Big Horn Ave., Worland, Wyo.; and 315 Federal Bldg., Billings, Mont.; Bur. of Mines, Rapid City, S. Dak.; DA; R; AEC Casper Suboffice, Casper, Wyo. (C-338).
353. Olson, J. C. and Wallace, S. R., Thorium in the Powderhorn district, Gunnison County, Colorado (Fig. 3 only -- "Geologic map of the Little Johnnie thorium deposit, Gunnison County, Colorado," by S. R. Wallace, J. C. Olson, and J. E. Roadifer): July 19, 1954: D; GJ; SL.
354. Christman, R. E., Brock, M. R., Pearson, R. C., and Singewald, Q. D., Wet Mountains, Colorado, thorium investigations, 1952-1954 (Part I): March 31, 1955: D; SL; DA. (MG-55).
356. Tschanz, C. M., Fuller, G. W., and Laub, D. C., The copper and uranium deposits of the Coyote district, Mora County, New Mexico (Paper entitled "Copper and uranium mineralization in the Coyote mining district, Mora County, New Mexico," by D. C. Laub): July 28, 1954. (B-1030-1\*)
387. Moxham, R. M., Airborne radioactivity surveys for phosphate in Florida: Apr. 2, 1954: D; GJ; SL; Geol. Survey Offices at Menlo Park, Calif.; Custer, S. Dak.; Casper and Worland, Wyo.; Bldg. 211, Camp Roosevelt, Ocala, Fla.; Dinner Key, S. Bayshore Drive, Miami, Fla.; New Dining Hall Bldg., Fla. State Univ., Tallahassee, Fla.; Bur. of Mines, Rapid City, S. Dak.; BA; DA; GJA; R; SLA; AEC Buying Stations at Shiprock, N. Mex., and Monticello, Utah; AEC Suboffices at Casper, Wyo.; Albuquerque, N. Mex.; Phoenix, Arizona; Ishpeming, Mich. (C-230).
462. Sheldon, R. P., Physical stratigraphy of the Phosphoria formation in northwestern Wyoming: June 13, 1955. (B-1042-B; J-202).

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477. Pipiringos, G. N., Uranium-bearing coal in the central part of the Great Divide Basin, Sweetwater County, Wyoming: May 18, 1956. (J-191).
520. Parshall, E. E. and Rader, L. F., Diagrams for construction of Model #54 transmission and reflection fluorimeter (Figs. 1, 2, 3, 4, 5, 6, 7, and 8): Dec. 6, 1955: D; SF. (B-1036\*).
586. Pommer, A. M., Oxidation and state of some vanadium ores and the relation of woody material to their deposition: June 25, 1956: D; Geological Survey Office, Menlo Park, Calif.

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549. Scott, J. M., Photogeologic map, Circle Cliffs-3 quadrangle, Garfield County, Utah: July 23, 1953: D; GJ; SL. (MC-93).
550. Hemphill, W. R., Photogeologic map, Stinking Spring Creek-7 quadrangle, Emery County, Utah: June 22, 1953: D; GJ; SL.
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586. Scott, J. M., Photogeologic map, Circle Cliffs-1 quadrangle, Garfield County, Utah: August 17, 1953: D; SJ; SL. (MC-91).

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596. Hackman, R. J., Photogeologic map, Mt. Pennell-5 quadrangle, Garfield County, Utah: Aug. 17, 1953: D; GJ; SL. (MC-185).
597. Scott, J. M., Photogeologic map, Mt. Pennell-12 quadrangle, Garfield County, Utah: July 23, 1953: D; GJ; SL. (MC-187).
598. Hosley, V. M., Photogeologic map, Moab-15 quadrangle, Grand County, Utah: Aug. 17, 1953: D; GJ; SL. (MC-174).
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613. Hackman, R. J., Photogeologic map, Mt. Pennell-14 quadrangle, Garfield and Kane Counties, Utah: Oct. 19, 1953: D; GJ; SL. (MC-189).
614. Hackman, R. J., Photogeologic map, Circle Cliffs-16 quadrangle, Garfield and Kane Counties, Utah: Sept. 16, 1953: D; GJ; SL. (MC-106).
615. Scott, J. M., Photogeologic map, Mt. Pennell-13 quadrangle, Garfield and Kane Counties, Utah: Sept. 16, 1953: D; GJ; SL. (MC-188).
616. Bates, C. E., Photogeologic map, Moab-10 quadrangle, Grand County, Utah: Sept. 16, 1953: D; GJ; SL. (MC-169).
617. Orkild, P. P., Photogeologic map, Tidwell-16 quadrangle, Emery and Grand Counties, Utah: Dec. 21, 1953: D; GJ; SL. (MC-236)
618. Condon, W. H., Photogeologic map, Orange Cliffs-10 quadrangle, Wayne and Garfield Counties, Utah: Sept. 16, 1953: D; GJ; SL.

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620. Scott, J. M., Photogeologic map, Navajo Mountain-6 quadrangle, San Juan and Kane Counties, Utah: Dec. 21, 1953: D; GJ; SL. (MC-195).
621. Hackman, R. J., Photogeologic map, Navajo Mountain-3 quadrangle, Kane and San Juan Counties, Utah: Oct. 19, 1953: D; GJ; SL. (MC-192).
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634. Scott, J. M., Photogeologic map, Circle Cliffs-4 quadrangle, Garfield County, Utah: Dec. 21, 1953: D; GJ; SL. (MC-94).
635. Scott, J. M., Photogeologic map, Circle Cliffs-5 quadrangle, Garfield County, Utah: Oct. 19, 1953: D; GJ; SL. (MC-95).
636. Hackman, R. J., Photogeologic map, Circle Cliffs-11 quadrangle, Garfield County, Utah: Oct. 19, 1953: D; GJ; SL. (MC-101).
637. Hackman, R. J., Photogeologic map, Circle Cliffs-14 quadrangle, Garfield and Kane Counties, Utah: Oct. 19, 1953: D; GJ; SL. (MC-104).
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639. Hosley, V. M., Photogeologic map, Moab-12 quadrangle, Grand County, Utah: Oct. 19, 1953: D; GJ; SL. (MC-171).
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Lafayette, Purdue University Library

IOWA

Ames, Iowa State College Library

KENTUCKY

Lexington, University of Kentucky Library

LOUISIANA

Baton Rouge, Louisiana State University Library

MASSACHUSETTS

Cambridge, Harvard University Library

Cambridge, Massachusetts Institute of Technology Library

MICHIGAN

Ann Arbor, University of Michigan Library

Detroit, Detroit Public Library

MINNESOTA

Minneapolis, University of Minnesota Library

MISSOURI

Kansas City, Linda Hall Library

St. Louis, Washington University Library

MONTANA

\*Helena, Helena Public Library

NEVADA

\*Las Vegas, Las Vegas Public Library

NEW JERSEY

Princeton, Princeton University Library

NEW MEXICO

Albuquerque, University of New Mexico Library

\*Socorro, New Mexico Institute of Mining and Technology Library

## NEW YORK

Buffalo, Lockwood Memorial Library  
Ithaca, Cornell University Library  
New York, Atomic Industrial Forum  
New York, Columbia University Library  
New York, New York Public Library  
Troy, Rensselaer Polytechnic Institute

## NORTH CAROLINA

Durham, Duke University Library  
Raleigh, North Carolina State College Library

## OHIO

Cincinnati, University of Cincinnati Library  
Cleveland, Cleveland Public Library  
Columbus, Ohio State University Library  
Toledo, University of Toledo Library

## OKLAHOMA

Stillwater, Oklahoma Agricultural and Mechanical College Library

## OREGON

Corvallis, Oregon State College Library

## PENNSYLVANIA

Philadelphia, University of Pennsylvania Library  
Pittsburgh, Carnegie Library of Pittsburgh  
University Park, Pennsylvania State University, Pattee Library

## SOUTH CAROLINA

Columbia, University of South Carolina, McKissick Memorial Library

## TENNESSEE

Knoxville, University of Tennessee Library  
Nashville, Joint University Libraries

## TEXAS

Austin, University of Texas Library  
\*El Paso, El Paso Public Library  
\*Houston, University of Houston Library

## UTAH

\*Moab, Grand County Public Library  
\*Provo, Brigham Young University Library  
Salt Lake City, University of Utah Library  
\*Salt Lake City, Salt Lake City Free Public Library  
\*Vernal, Utah Field House of Natural History

## WASHINGTON

Seattle, University of Washington Library

## WISCONSIN

Madison, University of Wisconsin Library

## WYOMING

\*Casper, Natrona County Public Library  
\*Cheyenne, Wyoming State Library

ARGENTINA

Buenos Aires, Comision Nacional de Energia Atomica

AUSTRALIA

Canberra, Australian National Library  
Coogee, New South Wales, Australian Atomic Energy Commission

AUSTRIA

Vienna, Institut fur Radiumforschung der Oesterreichischen  
Akademie der Wissenschaften

BURMA

Rangoon, Union of Burma Applied Research Institute

CANADA

Ottawa, National Research Council Library

DENMARK

Copenhagen, Atomic Energy Commission, c/o Institute of Theoretical Physics

EGYPT

Cairo, Atomic Energy Commission

ENGLAND

Birmingham, Birmingham Central Library  
Liverpool, Lancashire County Council Library  
London, Science Museum Library  
Manchester, Manchester Central Library  
Nottingham, Nottingham Central Library  
Sheffield, Sheffield Central Library

FINLAND

Helsinki, Teknillisen Korkeakoulun Kirjasto

FORMOSA (TAIWAN)

Taipei, National Tsing Hua University Library

FRANCE

Gif-sur-Yvette, Centre d'Etudes Nucleaires de Saclay

GREECE

Athens, Greek Atomic Energy Commission

HAITI

Port au Prince, National Library

INDIA

Bombay, Department of Atomic Energy

ISRAEL

Tel Aviv, Israel Atomic Energy Commission

ITALY

Rome, Istituto Nazionale delle Ricerche

JAPAN

Tokyo, Science Section, Diet Library

LEBANON

Beirut, American University

NETHERLANDS

Utrecht, Stichting Reactor Centrum

PAKISTAN

Karachi, Atomic Energy Commission

PERU

Lima, Biblioteca Nacional

PHILIPPINE REPUBLIC

Manila, American Embassy

Manila, Interdepartmental Committee on Atomic Energy, c/o National Economic Council

PORTUGAL

Lisbon, Junta de Energia Nuclear

SCOTLAND

Glasgow, Corporation of Glasgow Library's Department "Mitchell"

SPAIN

Madrid, Junta de Energia Nuclear

SWEDEN

Stockholm, Atomenergi AB

SWITZERLAND

Geneva, United Nations Library

UNION OF SOUTH AFRICA

Pretoria, Library and Information Division,

South African Council for Scientific and Industrial Research

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- 31C. Grimaldi, F. S., The determination of very small amounts of uranium in rocks and minerals: 1946; AECD-2631. (B-1006, Pt. 3).
- 31D. Fahey, J. J. and Foster, M. D., The determination of small amounts of thorium in rocks and minerals: 1946; AECD-2629. (B-1006, Pt. 19).
- 31E. Grimaldi, F. S. and Fairchild, J. G., The determination of very small amounts of thorium in naturally occurring materials: 1946; AECD-2632. (B-1006, Pt. 18).
- 31H. Fleischer, Michael and Harder, J. O., Geochemistry of indium: 1946; MDDC-646.
- 31I. Fleischer, Michael and Harder, J. O., Geochemistry of germanium: 1946; MDDC-645.
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- (K)\* Guilinger, R. R. and Theobald, P. K., Jr., Uranium deposits in oolitic limestone near Mayoworth, Johnson County, Wyoming. (TEM-293).
- \* Moore, F. B., Cavender, W. S., and Kaiser, E. P., Geology and uranium deposits of the Caribou area, Boulder County, Colorado. (TEI-228).
- \* Tschanz, C. M., Fuller, G. W., and Laub, D. C., Copper and uranium deposits of the Coyote district, Mora County, New Mexico. (TEI-356).

1032. Geology and ore deposits, Clear Creek, Gilpin and Larimer Counties, Colorado.  
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- (A) Sims, P. K., Tooker, E. W., and Osterwald, F. W., Uranium deposits in the Eureka Gulch area, Central City district, Gilpin County, Colorado; Nov. 1955. (TEI-125) 50¢  
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(B-1032 continued)

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1032. **Geology and ore deposits, Clear Creek, Gilpin and Larimer Counties, Colorado. (Continued)**

(B)\* Harrison, J. E. and Wells, J. D., Geology and ore deposits of the Freeland-Lamartine district, Clear Creek County, Colorado. (TEI-295) (J-109).

\* Drake, A. A., Geology of the Wood and East Calhoun mines, Central City district, Gilpin County, Colorado. (TEI-175).

\* Sims, P. K. and Phair, George, Geology of the Copper King mine, Larimer County, Colorado. (TEI-424).

1036. **Contributions to geochemistry.**

(Issued only in separate chapters)

(E) Waring, C. L., Franck, Mona, and Sherwood, A. M., An application of spectrographic microphotometric scanning: March 1956. (TEI-444) 15¢.

(F) Waring, C. L. and Worthington, H. W., A spectrographic method for determining the hafnium-zirconium ratio in zircon: May 1956. (TEI-502) 15¢.

(G)\* Frondel, Clifford, Riska, D. D., and Frondel, J. W., X-ray powder data for uranium and thorium minerals. (TEI-575).

(H)\* Deul, Maurice and Ansell, C. S., The occurrence of minor elements in the ash of low-rank coals from Texas, Colorado, North Dakota, and South Dakota. (TEI-284) (J-28).

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(A)\* Gulbrandsen, R. A., McLaughlin, K. P., Honkala, F. S., and Clabaugh, S. E., Geology of the Johnson Creek quadrangle, Caribou County, Idaho. (TEI-183 and -260) (OF; J-208).

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- \* Armstrong, F. C., The Dismal Swamp placer deposit, Elmore County, Idaho. (TEM-928).
  - \* Dryden, Lincoln, Monazite in part of the southern Atlantic Coastal Plain. (TEI-566).
  - \* Heyl, A. V., Zoning of the Bitter Creek vanadium deposits, Montrose County, Colorado. (TEI-443).
  - \* Stugard, Frederick, Jr., Pegmatites of the Middletown area, Connecticut. (TEI-233).

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- (A)\* Gott, G. B., Inferred relationship between some uranium deposits and calcium carbonate cement in the southern Black Hills, South Dakota. (TEM-1000).
- (B)\* McKeown, F. A. and Klemic, Harry, Rare-earth-bearing apatite at Mineville, Essex County, New York. (TEI-383).
- \* Armstrong, F. C. and Weis, P. L., Uranium-bearing minerals in placer deposits of the Red River Valley, Elk City district, Idaho County, Idaho. (TEI-562).
- \* Becraft, G. E., Uranium in carbonaceous rocks in the Townsend and Helena Valleys, Montana. (TEI-581).
- \* Klepper, M. R. and Wyant, D. G., Notes on the geology of uranium. (TEI-529) (J-132).
- \* Lovering, T. G. and Beroni, E. P., Preliminary study of radioactive limonite localities in Colorado, Utah, and Wyoming. (TEI-427).
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- (A)\* Denson, N. M., Introduction to investigations of uranium in coal of the Western States.

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1055. Uranium in coals of the western United States. (Continued)

- (B)\* Denson, N. M., Bachman, G. O., and Zeller, H. D., Uranium-bearing lignite and its relation to the White River and Arikaree formations in northwestern South Dakota and adjacent states. (TEI-467) (MC-263, 264, and 265).
- (C)\* Zeller, H. D., Results of exploratory drilling for uranium-bearing lignite deposits in Harding and Perkins Counties, South Dakota and Bowman County, North Dakota. (TEI-238).
- (D)\* Gill, J. R. and Zeller, H. D., Results of core drilling for uranium-bearing lignite, Mendenhall area, Harding County, South Dakota. (TEI-456).
- (E)\* Moore, G. W., Melin, R. E., and Kepferle, R. C., Uranium-bearing lignite in southwestern North Dakota. (TEI-463) (MC-267).
- (F)\* Gill, J. R., Reconnaissance for uranium-bearing lignite in the Ekalaka lignite field, Carter County, Montana. (TEI-452).
- (G)\* Masursky, Harold and Pipiringos, G. N., Preliminary report on uranium-bearing coal in the Red Desert, Great Divide Basin, Sweetwater County, Wyoming. (TEI-332 and TEM-601).
- (H)\* Mapel, W. J. and Hail, W. J., Jr., Tertiary geology of the Goose Creek district, Cassia County, Idaho, Boxelder County, Utah, and Elko County, Nevada. (TEI-339 and -438).
- (I)\* Vine, J. D., Geology and uranium deposits in carbonaceous rocks of the Fall Creek area, Bonneville County, Idaho. (TEI-451).
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- \* Ketner, K. B. and McGreevy, L. J., Stratigraphy of the area between Hernando and Hardee Counties, Florida. (TEI-524).

## 5. Professional papers

For sale by the Superintendent of Documents,  
U. S. Government Printing Office  
Washington 25, D. C., at the price indicated.

(\* Indicates professional paper is in preparation)

## P. No.

227. Hanley, J. B., Heinrich, E. W., and Page, L. R., Pegmatite investigations in Colorado, Wyoming, and Utah, 1942-44: 1950. \$1.50.
228. Hunt, C. B., assisted by Averitt, Paul and Miller, R. L., Geology and geography of the Henry Mountains region, Utah: 1953. \$6.25.
261. Olson, J. E., and others, Rare-earth mineral deposits of the Mountain Pass district, San Bernardino County, California: (Includes TEI-251) 1955. \$3.00 (NSA).
265. Staatz, M. H. and Trites, A. F., Jr., Geology of the Quartz Creek pegmatite district, Gunnison County, Colorado: 1955. \$3.00 (TEI-138) (OF; NSA).
279. Hunt, C. B., Cenozoic geology of the Colorado Plateau: 1956, 75¢.
- 297-A\*. Sheridan, D. M., Stephens, H. G., Staatz, M. H., and Norton, J. J., Geology and beryl deposits of the Peerless pegmatites, Pennington County, South Dakota. (TEI-226).
300. Page, L. R., Stocking, H. B., and Smith, H. B., compiled by, Contributions to the geology of uranium and thorium by the United States Geological Survey and Atomic Energy Commission for the United Nations International Conference on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 1955: 1956. \$6.00.

Listed below are the papers published in Prof. Paper 300. Many of these papers, some in condensed form, were published in Proceedings of the International Conference on the Peaceful Uses of Atomic Energy, v. 6, 1956, United Nations, New York, \$9.00, and are shown by (IC). Organizational affiliation is shown for authors who are not employees of the Geological Survey. Papers are listed alphabetically by senior author.

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- Altschuler, Z. S., Jaffe, E. B., and Cuttitta, Frank, The aluminum phosphate zone of the Bone Valley formation, Florida, and its uranium deposits. (IC, p. 507-513).
- Becraft, G. E., Uranium deposits of the Boulder batholith, Montana. (IC, p. 270-274).
- Bell, Henry, III, Gott, G. B., Post, E. V., and Schnabel, R. W., Lithologic and structural controls of uranium deposition in the southern Black Hills, South Dakota. (IC, p. 407-411).
- Bell, K. G., Uranium in precipitates and evaporites. (IC, p. 520-524).
- Black, R. A., Geophysical exploration for uranium on the Colorado Plateau. (IC, p. 766-771).
- Boardman, R. L., Ekren, E. B., and Bowers, H. E., Sedimentary features of upper sandstone lenses of the Salt Wash member and their relation to uranium-vanadium deposits in the Uravan district, Montrose County, Colorado. (IC, p. 331-334).
- Breger, I. A. and Deul, Maurice, The organic geochemistry of uranium. (IC, p. 418-421).
- Brown, Andrew, Uranium in the Chattanooga shale of eastern Tennessee. (IC, p. 439-444).
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- Butler, A. P., Jr., and Schnabel, R. W., Distribution and general features of uranium occurrences in the United States. (IC, p. 224-230).
- Cannon, H. L. and Kleinhamper, F. J., Botanical methods of prospecting for uranium. (IC, p. 801-805).
- Cathcart, J. B., Distribution and occurrence of uranium in the calcium phosphate zone of the land-pebble phosphate district of Florida. (IC, p. 514-519).
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- Coats, R. R., Uranium and certain other trace elements in felsic volcanic rocks of Cenozoic age in Western United States. (IC, p. 248-251).

- Conant, L. C., Environment of accumulation of the Chattanooga shale. (IC, p. 435-438).
- Davis, D. L. (AEC) and Hetland, D. L. (AEC), Uranium in clastic rocks of the Basin and Range province. (IC, p. 387-391).
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- Denson, N. M. and Gill, J. R., Uranium-bearing lignite and its relation to volcanic tuffs in eastern Montana and North and South Dakota. (IC, p. 464-467).
- Denson, N. M., Zeller, H. D., and Stephens, J. G., Water sampling as a guide in the search for uranium deposits and its use in evaluating widespread volcanic units as potential source beds for uranium. (IC, p. 794-800).
- Derzay, R. C. (AEC), Geology of the Los Ochos uranium deposit, Saguache County, Colorado. (IC, p. 468-472).
- Dodd, P. H. (AEC), Examples of uranium deposits in the Upper Jurassic Morrison formation of the Colorado Plateau. (IC, p. 615-633).
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- Finch, W. I., Uranium in terrestrial sedimentary rocks in the United States exclusive of the Colorado Plateau. (IC, p. 600-604).
- Fischer, R. P., Uranium-vanadium-copper deposits on the Colorado Plateau. (IC, p. 605-614).
- Fix, P. F., Hydrogeochemical exploration for uranium. (IC, p. 788-791).
- Foote, R. S. (AEC) and Page, L. R., Techniques for prospecting for uranium and thorium--a summary.
- Fronzel, Clifford (USGS and Harvard University), Mineralogy of thorium. (IC, p. 568-577).
- Gabelman, J. W. (AEC), Uranium deposits in paludal black shales, Dakota sandstone, San Juan Basin, New Mexico. (IC, p. 422-429).
- Gabelman, J. W. (AEC), Uranium deposits in limestone. (IC, p. 338-345).

- Grimaldi, F. S., The analytical chemistry of uranium and thorium.
- Gruner, J. W. (University of Minnesota), A comparison of black uranium ore deposits in Utah, New Mexico, and Wyoming. (IC, p. 530-532).
- Grutt, E. W., Jr. (AEC), Uranium deposits in Tertiary sedimentary rocks in Wyoming and northern Colorado. (IC, p. 392-402).
- Hail, W. J., Jr., Myers, A. T., and Horr, C. A., Uranium in asphalt-bearing rocks of the Western United States. (IC, p. 489-493).
- Hilpert, L. S. and Freeman, V. L., Guides to uranium deposits in the Morrison formation, Gallup-Laguna area, New Mexico. (IC, p. 346-349).
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- Jobin, D. A., Regional transmissivity of the exposed sediments of the Colorado Plateau as related to distribution of uranium deposits. (IC, p. 317-320).
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- Kerr, P. F. (Columbia University), Rock alteration criteria in the search for uranium. (IC, p. 679-684).
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- King, J. W. (AEC) and Young, H. B. (AEC), High-grade uraniferous lignites in Harding County, South Dakota. (IC, p. 473-483).
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- Pitman, R. K. (AEC), Dodd, P. H. (AEC), and Tom, C. W. (AEC), Subsurface techniques for outlining favorable zones by widely spaced core drilling. (IC, p. 695-700).
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- Shawe, D. R., Significance of roll ore bodies in genesis of uranium-vanadium deposits on the Colorado Plateau. (IC, p. 335-337).
- Shoemaker, E. M., Occurrence of uranium in diatremes on the Navajo and Hopi Reservations, Arizona, New Mexico, and Utah. (IC, p. 412-417).
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- Sims, P. K. and Tooker, E. W., Pitchblende deposits in the Central City district and adjoining areas, Gilpin and Clear Creek Counties, Colorado. (IC, p. 265-269).
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- Vickers, R. C., Geology and monazite content of the Goodrich quartzite, Palmer area, Marquette County, Michigan. (IC, p. 597-599).
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- Weeks, A. D., Mineralogy and oxidation of the Colorado Plateau uranium ores. (IC, p. 525-529).
- Witkind, I. J., Channels and related swales at the base of the Shinarump conglomerate, Monument Valley, Arizona. (IC, p. 368-370).
- Wood, H. B. (AEC), Relations of the origin of host rocks to uranium deposits and ore production in Western United States. (IC, p. 307-316).
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6. Maps and charts

(\* Indicates publication is in preparation)

If copies are available, they may be purchased from the U. S. Geological Survey, Washington 25, D. C., or the Distribution Section, U. S. Geological Survey, Denver Federal Center, Denver, Colorado.

a. Geologic quadrangle maps

1. Anderson Mesa, Montrose and San Miguel Counties, Colorado. Geology of, by F. W. Cater, Jr., with a section on "The Mines" by C. F. Withington: GQ 77, 1956. \$1.00 (TEM-690).
2. Atkinson Creek, Montrose County, Colorado. Geology of, by E. J. McKay: GQ 57, 1955. \$1.00 (TEM-691) (NSA) (MC-48).
3. Bull Canyon, Montrose and San Miguel Counties, Colorado. Geology of, by F. W. Cater, Jr.: GQ 33, 1954. \$1.00 (TEM-692).
4. Calamity Mesa, Mesa County, Colorado. Geology of, by F. W. Cater, Jr., with a section on "The Mines" by H. K. Stager: GQ 61, 1955. \$1.00 (TEM-693) (NSA) (MC-29).
5. Davis Mesa, Montrose County, Colorado. Geology of, by F. W. Cater, Jr., with a section on "The Mines" by Leonid Bryner: GQ 71, 1955. \$1.00 (TEM-694) (MC-30).
6. Egnar, Dolores, and San Miguel Counties, Colorado. Geology of, by F. W. Cater, Jr., with a section on "The Mines" by A. L. Bush and Henry Bell, III: GQ 68, 1955. \$1.00 (TEM-695) (NSA) (MC-31).
7. Gateway, Mesa County, Colorado. Geology of, by F. W. Cater, Jr.: GQ 55, 1955. \$1.00 (TEM-696) (NSA).
8. Gypsum Gap, San Miguel County, Colorado. Geology of, by F. W. Cater, Jr.: GQ 59, 1955. \$1.00 (TEM-697) (NSA) (MC-32).
9. Hamm Canyon, San Miguel County, Colorado. Geology of, by F. W. Cater, Jr.: GQ 69, 1955. \$1.00 (TEM-698) (NSA) (MC-33).
10. Horse Range Mesa, San Miguel County, Colorado. Geology of, by F. W. Cater, Jr., with a section on "The Mines" by A. L. Bush, Henry Bell, III, and C. F. Withington: GQ 64, 1955. \$1.00 (TEM-699) (NSA) (MC-34).
11. Joe Davis Hill, Dolores, and San Miguel Counties, Colorado. Geology of, by F. W. Cater, Jr., and Henry Bell, III: GQ 66, 1955. \$1.00 (TEM-700) (NSA) (MC-35).
12. Juanita Arch, Mesa County, Colorado. Geology of, by E. M. Shoemaker: GQ 81, 1955. \$1.00 (TEM-701) (MC-53).

13. Naturita NW, Montrose and San Miguel Counties, Colorado. Geology of, by F. W. Cater, Jr., with a section on "The Mines" by J. D. Vogel: GQ 65, 1955. \$1.00 (TEM-702) (NSA) (MC-36).
14. Paradox, Montrose County, Colorado. Geology of, by C. F. Withington: GQ 72, 1955. \$1.00 (TEM-703) (MC-59).
15. Pine Mountain, Mesa County, Colorado. Geology of, by F. W. Cater, Jr., GQ 60, 1955. \$1.00 (TEM-704) (MC-37; MFO).
16. Red Canyon, Montrose County, Colorado. Geology of, by E. J. McKay, with a section on "The Mines" by D. A. Jobin: GQ 58, 1955. \$1.00 (TEM-705) (NSA) (MC-49).
17. Roc Creek, Montrose County, Colorado. Geology of, by E. M. Shoemaker: GQ 83, 1956. \$1.00 (TEM-706) (MC-54).
18. Uravan, Montrose County, Colorado. Geology of, by F. W. Cater, Jr., A. P. Butler, Jr., and E. J. McKay, with a section on "The Mines" by R. L. Boardman: GQ 78, 1955. \$1.00 (TEM-707) (MC-38).

## b. Geophysical investigations maps

19. Johnson, R. W., Airborne radioactivity survey of part of Moffat County, Colorado (Sunny Peak NW and NE quadrangles): GP 125, 1955. 50¢ (NSA).
20. Johnson, R. W., Airborne radioactivity survey of part of Moffat County, Colorado (Sunny Peak SW and SE, and Craig SW and SE quadrangles): GP 126: 1955, 50¢ (NSA).
21. Johnson, R. W., Airborne radioactivity survey of the Myton area, Duchesne and Uintah Counties, Utah: GP 127, 1955, 50¢ (NSA).
22. Meuschke, J. L., Airborne radioactivity survey of the Edisto Island area, Berkeley, Charleston, Colleton, and Dorchester Counties, South Carolina: GP 123, 1955. 50¢.
23. Meuschke, J. L., Airborne radioactivity survey of the Fort Myers area, Charlotte and Lee Counties, Florida: GP 121, 1955. 50¢ (NSA).
24. Meuschke, J. L., Airborne radioactivity survey of the Gardner area, DeSoto, Hardee, Manatee, and Sarasota Counties, Florida: GP 122; 1955. 50¢.
25. Meuschke, J. L., Airborne radioactivity survey of the Painted Desert area, Coconino and Navajo Counties, Arizona: GP 120, 1955. 50¢.
26. Meuschke, J. L., Airborne radioactivity survey of the Pinto-Chinle area, Apache County, Arizona: GP 124, 1955. 50¢.
27. Moxham, R. M., Airborne radioactivity survey in the Folkston area, Charlston County, Georgia, and Nassau County, Florida: GP 119, 1955. 50¢.

c. Mineral investigations field studies  
and preliminary maps and reports

28. Braddock, W. A., Map showing distribution and occurrences of uranium deposits in part of Edgemont mining district, Fall River County, South Dakota: MF-39, 1955. 50¢ (TEI-355) (NSA).
29. Cater, F. W., Jr., Geology of the Calamity Mesa quadrangle, Mesa County, Colorado, with a section on "The Mines" by H. K. Stager: MF 32, 1955. 25¢ (TEM-693) (NSA) (MC-4).
30. Cater, F. W., Jr. and McKay, E. J., Geology of the Davis Mesa quadrangle, Mesa County, Colorado, with a section on "The Mines" by Leonid Bryner: MF 31, 1955. 25¢ (TEM-694) (NSA) (MC-5).
31. Cater, F. W., Jr., Geology of the Egnar quadrangle, Dolores and San Miguel Counties, Colorado, with a section on "The Mines" by A. L. Bush and Henry Bell, III: MF 26, 1955. 25¢ (TEM-695) (NSA) (MC-6).
32. Cater, F. W., Jr., Geology of the Gypsum Gap quadrangle, San Miguel County, Colorado: MF 19, 1955. 25¢ (TEM-697) (NSA) (MC-8).
33. Cater, F. W., Jr., Geology of the Hamm Canyon quadrangle, San Miguel County, Colorado: MF 21, 1955. 25¢ (TEM-698) (NSA) (MC-9).
34. Cater, F. W., Jr., Geology of the Horse Range Mesa quadrangle, Colorado, with a section on "The Mines" by A. L. Bush, Henry Bell, III, and C. F. Withington: MF 29, 1955. 25¢ (TEM-699) (MC-10).
35. Cater, F. W., Jr., Geology of the Joe Davis Hill quadrangle, Dolores and San Miguel Counties, Colorado, with a section on "The Mines" by Henry Bell, III: MF 27, 1955. 25¢ (TEM-700) (NSA) (MC-11).
36. Cater, F. W., Jr., Geology of the Naturita NW quadrangle, Montrose and San Miguel Counties, Colorado, with a section on "The Mines" by J. D. Vogel: MF 30, 1955. 25¢ (TEM-702) (NSA) (MC-13).
37. Cater, F. W., Jr., Geology of the Pine Mountain quadrangle, Mesa County, Colorado: MF 20, 1954. 25¢ (TEM-704) (MC-15; MFO).
38. Cater, F. W., Jr., Butler, A. P., Jr., and McKay, E. J., Geology of the Uravan quadrangle, Montrose County, Colorado, with a section on "The Mines" by R. L. Boardman: MF 24, 1955. 50¢ (TEM-707) (NSA) (MC-18).
39. Chew, R. T., III, Uranium and vanadium deposits of the Colorado Plateau that produced more than 1,000 tons of ore through June 30, 1955: MF 54\* (TEI-344).

40. Finch, W. I., Preliminary geologic map showing the distribution of uranium deposits and principal ore-bearing formations of the Colorado Plateau region: MF 16, 1955. 50¢.
41. Finnell, T. L. and Parrish, I. S., Uranium deposits and principal ore-bearing formations of the central Cordilleran Foreland region: MF 120 \*. (TEM-953).
42. Fischer, R. P., Stokes, W. L., and Smith, L. E., Geology of the Rifle Creek vanadium area, Garfield County, Colorado: U. S. Geological Survey Strategic Minerals Investigations Preliminary Report (Mimeographed-limited distribution) 1. 1944.
43. Fischer, R. P., Vanadium region of southwestern Colorado and southeastern Utah: U. S. Geological Survey Strategic Minerals Investigations Preliminary Map (with text). 1944 (Second edition issued as Minerals Investigations Preliminary Map 3-226, 1949. 30¢).
44. Knechtel, M. M. and Patterson, S. H., Bentonite deposits of the northern Black Hills district, Montana, Wyoming, and South Dakota: MF 36, 1956. \$1.50.
45. Gott, G. B. and Schnabel, R. W., Preliminary geologic map of the northwestern part of the Edgemont NE quadrangle, Custer and Fall River Counties, South Dakota: MF 55\*. (OF-10).
46. Gott, G. B. and Schnabel, R. W., Preliminary geologic map of the northeastern part of the Edgemont NE quadrangle, Custer and Fall River Counties, South Dakota: MF 56\*. (OF-10).
47. Gott, G. B. and Schnabel, R. W., Preliminary geologic map of the west-central part of the Edgemont NE quadrangle, Fall River County, South Dakota: MF 58\*. (OF-10).
48. McKay, E. J., Preliminary geologic map of the Atkinson Creek quadrangle, Colorado: MF 18, 1954. 25¢ (TEM-691) (NSA) (MC-2).
49. McKay, E. J., Preliminary geologic map of the Red Canyon quadrangle, Colorado: MF 17, 1954. 25¢ (TEM-705) (NSA) (MC-16).
50. Deleted.
51. Sharp, W. N. and Pray, L. C., Geologic map of the bastnaesite deposits of the Birthday claims, San Bernardino County, California: MF 4, 1952. 75¢.
52. Sharp, W. N. and White, A. M., Preliminary geologic map of the Pumpkin Buttes area, showing location of uranium occurrences, Campbell and Johnson Counties, Wyoming: MF 98 \* (TEM-899).

53. Shoemaker, E. M., Geology of the Juanita Arch quadrangle, Mesa County, Colorado: MF 23, 1955. 50¢ (TEM-701) (NSA) (MC-12).
54. Shoemaker, E. M., Geology of the Roc Creek quadrangle, Montrose County, Colorado: MF 23, 1955. 50¢ (TEM-706) (NSA) (MC-17).
55. Singewald, Q. D., Christman, R. A., Brock, M. R., Swinney, C. M., Pearson, R. C., Calkins, J. A., and Heyman, A. M., Geologic and radiometric maps of the McKinley Mountain area, Wet Mountains, Colorado: MF 37, 1956. \$1.00 (Figs. 2 and 3 from TEI-354).
56. Deleted.
57. Stokes, W. L., Russell, R. T., Fischer, R. P., and Butler, A. P., Jr., Geologic map of the Gateway area, Mesa County, Colorado and adjoining part of Grand County, Utah: U. S. Geological Survey Strategic Minerals Investigations Preliminary Map (with text). 3-173, 1945. 25¢.
58. Deleted.
59. Withington, C. F., Preliminary geologic map of the Paradox quadrangle, Colorado: MF 22, 1955. 25¢ (TEM-703) (NSA) (MC-14).
60. Zeller, H. D., Soister, P. E., and Hyden, H. J., Preliminary geologic map of the Gas Hills uranium district, Fremont and Natrona Counties, Wyoming: MF 83 \* (Figures and tables from TEI-560).

## d. Miscellaneous geologic investigations maps

61. Aneth-1 quadrangle, San Juan County, Utah and Montezuma County, Colorado, photogeologic map, by R. J. Hackman: I 90, 1955. 50¢ (TEM-452) (OF; NSA).
62. Aneth-2 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 91, 1955. 50¢ (TEM-364) (OF; NSA).
63. Aneth-3 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 92, 1955. 50¢ (TEM-365) (OF; NSA).
64. Aneth-4 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 93, 1955. 50¢ (TEM-366) (OF).
65. Aneth-5 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 94, 1955. 50¢ (TEM-393) (OF; NSA).
66. Aneth-6 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 95, 1955. 50¢ (TEM-400) (OF; NSA).
67. Aneth-7 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 96, 1955. 50¢ (TEM-367) (OF; NSA).
68. Aneth-8 quadrangle, San Juan County, Utah and Montezuma County, Colorado, photogeologic map, by R. J. Hackman: I 97, 1955. 50¢ (TEM-368) (OF; NSA).
69. Bluff-1 quadrangle, San Juan County, Utah, photogeologic map, by C. F. Miller: I 64, 1955. 50¢ (TEM-369A) (NSA).
70. Bluff-3 quadrangle, San Juan County, Utah, photogeologic map, by C. H. Marshall: I 181\* (TEM-795) (OF).
71. Bluff-4 quadrangle, San Juan County, Utah, photogeologic map by J. N. Platt: I 59, 1955. 50¢ (TEM-818) (OF; NSA).
72. Bluff-5 quadrangle, San Juan County, Utah, photogeologic map, by P. P. Orkild: I 60, 1955. 50¢ (TEM-824) (OF; NSA).
73. Bluff-6 quadrangle, San Juan County, Utah, photogeologic map, by P. P. Orkild: I 53, 1955. 50¢ (TEM-814) (OF; NSA).
74. Bluff-8 quadrangle, San Juan County, Utah, photogeologic map, by C. F. Miller: I 61, 1955. 50¢ (TEM-370A) (OF; NSA).
75. Bluff-11 quadrangle, San Juan County, Utah, photogeologic map, by C. F. Miller: I 54, 1955. 50¢ (TEM-796) (OF; NSA).
76. Bluff-12 quadrangle, San Juan County, Utah, photogeologic map, by P. P. Orkild: I 80, 1955. 50¢ (TEM-848) (NSA).

77. Carlisle-1 quadrangle, San Juan County, Utah, photogeologic map, by G. E. Tolbert: I 180 \* (TEM-372).
78. Carlisle-2 quadrangle, San Juan County, Utah, photogeologic map, by J. S. Detterman: I 67, 1955. 50¢ (TEM-667) (OF; NSA).
79. Carlisle-3 quadrangle, San Juan County, Utah, photogeologic map, by C. E. Bates: I 68, 1955. 50¢ (TEM-592) (OF; NSA).
80. Carlisle-4 quadrangle, Wayne and San Juan Counties, Utah, photogeologic map, by V. H. Sable: I 69, 1955. 50¢ (TEM-547) (OF; NSA).
81. Carlisle-5 quadrangle, Wayne and San Juan Counties, Utah, photogeologic map, by V. H. Sable: I 70, 1955. 50¢ (TEM-544) (OF; NSA).
82. Carlisle-6 quadrangle, San Juan County, Utah, photogeologic map, by C. E. Bates: I 71, 1955. 50¢ (TEM-587) (OF; NSA).
83. Carlisle-7 quadrangle, San Juan County, Utah, photogeologic map, by V. H. Sable: I 72, 1955. 50¢ (TEM-733) (OF; NSA).
84. Carlisle-10 quadrangle, San Juan County, Utah, photogeologic map, by J. S. Detterman: I 73, 1955. 50¢ (TEM-669) (OF; NSA).
85. Carlisle-11 quadrangle, San Juan County, Utah, photogeologic map, by J. N. Platt: I 74, 1955. 50¢ (TEM-763) (OF; NSA).
86. Carlisle-12 quadrangle, Wayne, San Juan, and Garfield Counties, Utah, photogeologic map, by J. N. Platt: I 75, 1955. 50¢ (TEM-793) (NSA).
87. Carlisle-13 quadrangle, San Juan and Garfield Counties, Utah, photogeologic map, by J. N. Platt: I 2, 1955. 50¢ (TEM-753) (OF).
88. Carlisle-14 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 6, 1955. 50¢ (TEM-752) (OF; NSA).
89. Carlisle-15 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 76, 1955. 50¢ (TEM-668) (OF; NSA).
90. Castle Dale-16 quadrangle, San Juan County, Utah, photogeologic map, by G. E. Tolbert: I 124, 1956. 50¢ (TEM-768) (OF).
91. Circle Cliffs-1 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 17, 1955. 50¢ (TEM-586) (OF; NSA).
92. Circle Cliffs-2 quadrangle, Garfield County, Utah, photogeologic map, by R. J. Hackman: I 18, 1955. 50¢ (TEM-548) (OF; NSA).
93. Circle Cliffs-3 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 19, 1955. 50¢ (TEM-549) (OF; NSA).
94. Circle Cliffs-4 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 20, 1955. 50¢ (TEM-634) (OF; NSA).

95. Circle Cliffs-5 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 21, 1955. 50¢ (TEM-635) (OF; NSA).
96. Circle Cliffs-6 quadrangle, Garfield County, Utah, photogeologic map, by R. J. Hackman: I 22, 1955. 50¢ (TEM-585) (OF).
97. Circle Cliffs-7 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 23, 1955. 50¢ (TEM-590) (OF).
98. Circle Cliffs-8 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 24, 1955. 50¢ (TEM-595) (OF).
99. Circle Cliffs-9 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 25, 1955. 50¢ (TEM-529) (OF; NSA).
100. Circle Cliffs-10 quadrangle, Garfield County, Utah, photogeologic map, by R. J. Hackman: I 26, 1955. 50¢ (TEM-531) (OF; NSA).
101. Circle Cliffs-11 quadrangle, Garfield County, Utah, photogeologic map, by R. J. Hackman: I 27, 1955. 50¢ (TEM-636) (OF; NSA).
102. Circle Cliffs-12 quadrangle, Garfield County, Utah, photogeologic map, by R. J. Hackman: I 52, 1955. 50¢ (TEM-821) (OF; NSA).
103. Circle Cliffs-13 quadrangle, Garfield and Kane Counties, Utah, photogeologic map, by B. H. Kent: I 28, 1955. 50¢ (TEM-797) (OF; NSA).
104. Circle Cliffs-14 quadrangle, Garfield and Kane Counties, Utah, photogeologic map, by R. J. Hackman: I 29, 1955. 50¢ (TEM-637) (OF; NSA).
105. Circle Cliffs-15 quadrangle, Garfield and Kane Counties, Utah, photogeologic map, by R. J. Hackman: I 30, 1955. 50¢ (TEM-641) (OF; NSA).
106. Circle Cliffs-16 quadrangle, Garfield and Kane Counties, Utah, photogeologic map, by R. J. Hackman: I 31, 1955. 50¢ (TEM-614) (OF; NSA).
107. Clay Hills-1 quadrangle, San Juan and Garfield Counties, Utah, photogeologic map, by C. H. Marshall: I 51, 1955. 50¢ (TEM-816) (OF; NSA).
108. Clay Hills-7 quadrangle, San Juan County, Utah, photogeologic map, by C. H. Marshall: I 62, 1955. 50¢ (TEM-825) (NSA).
109. Clay Hills-8 quadrangle, San Juan County, Utah, photogeologic map, by C. H. Marshall: I 58, 1955. 50¢ (TEM-820) (OF; NSA).
- 109a. Clay Hills-9 quadrangle, San Juan County, Utah, photogeologic map, by P. P. Orkild: I 79, 1955. 50¢ (TEM-851) (NSA).

110. Clay Hills-10 quadrangle, San Juan County, Utah, photogeologic map, by C. H. Marshall: I 78, 1955. 50¢ (TEM-841) (NSA).
111. Clay Hills-11 quadrangle, San Juan County, Utah, photogeologic map, by C. H. Marshall: I 65, 1955. 50¢ (TEM-840) (NSA).
112. Desert Lake-1 quadrangle, Emery and Carbon Counties, Utah, photogeologic map, by J. S. Detterman: I 99, 1955. 50¢ (TEM-762) (OF; NSA).
113. Desert Lake-2 quadrangle, Emery and Carbon Counties, Utah, photogeologic map, by C. F. Miller: I 100, 1955. 50¢ (TEM-760) (OF; NSA).
114. Desert Lake-6 quadrangle, Emery County, Utah, photogeologic map, by C. F. Miller: I 101, 1955. 50¢ (TEM-756) (OF; NSA).
115. Desert Lake-7 quadrangle, Emery County, Utah, photogeologic map, by W. H. Condon and C. F. Miller: I 102, 1955. 50¢ (TEM-758) (OF; NSA).
116. Desert Lake-8 quadrangle, Emery County, Utah, photogeologic map, by P. P. Orkild: I 4, 1955. 50¢ (TEM-761) (OF).
117. Desert Lake-9 quadrangle, Emery County, Utah, photogeologic map, by J. T. Cass: I 103, 1955. 50¢ (TEM-737) (OF; NSA).
118. Desert Lake-10 quadrangle, Emery County, Utah, photogeologic map, by W. H. Condon: I 104, 1955. 50¢ (TEM-767) (OF; NSA).
119. Desert Lake-11 quadrangle, Emery County, Utah, photogeologic map, by B. H. Kent: I 105, 1955. 50¢ (TEM-658) (OF; NSA).
120. Desert Lake-12 quadrangle, Emery County, Utah, photogeologic map, by C. F. Miller: I 106, 1955. 50¢ (TEM-764) (OF; NSA).
121. Desert Lake-13 quadrangle, Emery County, Utah, photogeologic map, by C. H. Marshall: I 154, 1956. 50¢ (TEM-766).
122. Desert Lake-14 quadrangle, Emery County, Utah, photogeologic map, by B. H. Kent: I 120, 1956. 50¢ (TEM-651) (OF).
123. Desert Lake-15 quadrangle, Emery County, Utah, photogeologic map, by W. R. Hemphill and C. R. Lewis: I 121, 1956. 50¢ (TEM-666) (OF).
124. Desert Lake-16 quadrangle, Emery County, Utah, photogeologic map, by C. H. Marshall: I 122, 1956. 50¢ (TEM-735) (OF).
125. Elk Ridge-1 quadrangle, San Juan County, Utah, photogeologic map, by C. F. Miller: I 82, 1955. 50¢ (TEM-410A) (NSA).
126. Elk Ridge-2 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 7, 1955. 50¢ (TEM-794) (OF; NSA).

127. Elk Ridge-3 quadrangle, San Juan County, Utah, photogeologic map, by C. L. Pillmore, Jr.: I 125, 1956. 50¢ (TEM-846).
128. Elk Ridge-4 quadrangle, San Juan County, Utah, photogeologic map, by J. S. Detterman and J. N. Platt: I 151, 1956. 50¢ (TEM-844).
129. Elk Ridge-5 quadrangle, San Juan County, Utah, photogeologic map, by V. H. Sable: I 152, 1956. 50¢ (TEM-894).
130. Elk Ridge-6 quadrangle, San Juan County, Utah, photogeologic map, by J. S. Detterman and J. C. Reed, Jr., I 98, 1955. 50¢ (TEM-847) (NSA).
131. Elk Ridge-7 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 32, 1955. 50¢ (TEM-810) (OF; NSA).
132. Elk Ridge-8 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 126, 1955. 50¢ (TEM-407A) (OF).
133. Elk Ridge-9 quadrangle, San Juan County, Utah, photogeologic map, by C. F. Miller: I 127, 1955. 50¢ (TEM-453A).
134. Elk Ridge-10 quadrangle, San Juan County, Utah, photogeologic map, by H. S. Bennett: I 55, 1955. 50¢ (TEM-822) (OF; NSA).
135. Elk Ridge-11 quadrangle, San Juan County, Utah, photogeologic map, by J. C. Reed, Jr., I 56, 1955. 50¢ (TEM-819) (OF; NSA).
136. Elk Ridge-14 quadrangle, San Juan County, Utah, photogeologic map, by C. F. Miller: I 8, 1955. 50¢ (TEM-798) (OF; NSA).
137. Elk Ridge-15 quadrangle, San Juan County, Utah, photogeologic map, by H. S. Bennett: I 35, 1955. 50¢ (TEM-812) (OF; NSA).
138. Elk Ridge-16 quadrangle, San Juan County, Utah, photogeologic map, by H. S. Bennett: I 63, 1955. 50¢ (TEM-377A) (NSA).
139. Emery-1 quadrangle, Emery County, Utah, photogeologic map, by P. P. Orkild: I 166, 1956. 50¢ (TEM-591) (OF)
140. Emery-2 quadrangle, Emery County, Utah, photogeologic map, by J. S. Detterman: I 9, 1955. 50¢ (TEM-792) (NSA).
141. Emery-7 quadrangle, Emery County, Utah, photogeologic map, by H. S. Bennett: I 10, 1955. 50¢ (TEM-791) (OF; NSA).
142. Emery-8 quadrangle, Emery County, Utah, photogeologic map, by W. H. Condon: I 177\* (TEM-593) (OF).
143. Emery-10 quadrangle, Emery County, Utah, photogeologic map by H. S. Bennett: I 11, 1955. 50¢ (TEM-790) (OF; NSA).

144. Emmett Wash NE quadrangle, Coconino County, Arizona, photogeologic map, by J. S. Detterman: I 190 \* (TEM-913).
145. Emmett Wash NW quadrangle, Coconino County, Arizona, photogeologic map, by J. P. Minard: I 192 \* (TEM-955).
146. Fredonia NW quadrangle, Coconino County, Arizona, photogeologic map, by W. R. Hemphill: I 133, 1956. 50¢ (TEM-879).
147. Fredonia SW quadrangle, Mohave County, Arizona, photogeologic map, by C. H. Marshall: I 160, 1956. 50¢ (TEM-912).
148. Heaton Knolls NW quadrangle, Mohave County, Arizona, photogeologic map, by C. H. Marshall: I 143, 1956. 50¢ (TEM-875).
149. House Rock Spring SE quadrangle, Coconino County, Arizona, photogeologic map, by Kathleen McQueen: I 198 \* (TEM-965).
150. House Rock Spring NE quadrangle, Coconino County, Arizona, photogeologic map, by J. P. Minard: I 199 \* (TEM-968).
151. Jacob Lake NE quadrangle, Coconino County, Arizona, photogeologic map, by C. H. Marshall: I 194 \* (TEM-959).
152. Johnson SW quadrangle, Kane County, Utah, photogeologic map, by J. S. Detterman: I 164, 1956. 50¢ (TEM-905).
153. Kaiparowits Peak-1 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 134, 1956. 50¢ (TEM-890).
154. Kaiparowits Peak-2 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 135, 1956. 50¢ (TEM-877).
155. Kaiparowits Peak-7 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 136, 1956. 50¢ (TEM-859).
156. Kaiparowits Peak-8 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 14, 1955. 50¢ (TEM-661) (OF; NSA).
157. Kaiparowits Peak-9 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 15, 1955. 50¢ (TEM-663) (OF; NSA).
158. Kanab SE quadrangle, Kane County, Utah, photogeologic map, by J. S. Detterman: I 137, 1956. 50¢ (TEM-892).
159. Kanab SW quadrangle, Kane County, Utah, photogeologic map, by C. L. Pillmore: I 138, 1956. 50¢ (TEM-893).
160. Lees Ferry SE quadrangle, Coconino County, Arizona, photogeologic map, by Kathleen McQueen: I 169, 1956. 50¢ (TEM-956).

161. Lees Ferry SW quadrangle, Coconino County, Arizona, photogeologic map, by J. S. Detterman: I 189 \* (TEM-914).
162. Lees Ferry NW quadrangle, Coconino County, Arizona, photogeologic map, by Kathleen McQueen: I 196 \* (TEM-954).
163. Lost Spring Mountain NW quadrangle, Mohave County, Arizona, photogeologic map, by C. H. Marshall: I 146, 1956. 50¢ (TEM-852).
164. Lost Spring Mountain SE quadrangle, Mohave County, Arizona, photogeologic map, by C. H. Marshall: I 144, 1956. 50¢ (TEM-856).
165. Lost Spring Mountain NE quadrangle, Mohave County, Arizona, photogeologic map, by C. H. Marshall: I 145, 1956. 50¢ (TEM-857).
166. Moab-4 quadrangle, Grand County, Utah, photogeologic map, by J. S. Detterman: I 85, 1955. 50¢ (TEM-829) (NSA).
167. Moab-5 quadrangle, Grand County, Utah, photogeologic map, by J. S. Detterman: I 57, 1955. 50¢ (TEM-823) (OF; NSA).
168. Moab-6 quadrangle, Grand County, Utah, photogeologic map, by J. S. Detterman: I 86, 1955. 50¢ (TEM-826) (NSA).
169. Moab-10 quadrangle, Grand County, Utah, photogeologic map, by C. E. Bates: I 116, 1955. 50¢ (TEM-616) (OF; NSA).
170. Moab-11 quadrangle, Grand County, Utah, photogeologic map, by C. E. Bates: I 107, 1955. 50¢ (TEM-652) (OF; NSA).
171. Moab-12 quadrangle, Grand County, Utah, photogeologic map, by V. H. Sable: I 117, 1955. 50¢ (TEM-639) (OF; NSA).
172. Moab-13 quadrangle, Grand County, Utah, photogeologic map, by W. E. Berquist: I 118, 1955. 50¢ (TEM-731) (OF; NSA).
173. Moab-14 quadrangle, Grand County, Utah, photogeologic map, by V. H. Sable: I 119, 1956. 50¢ (TEM-584) (OF; NSA).
174. Moab-15 quadrangle, Grand County, Utah, photogeologic map, by V. H. Sable: I 128, 1956. 50¢ (TEM-598) (OF).
175. Moab-16 quadrangle, Grand County, Utah, photogeologic map, by W. R. Hemphill: I 83, 1955. 50¢ (TEM-845) (NSA).
176. Mt. Peale-1 quadrangle, Grand and San Juan Counties, Utah and Montrose County, Colorado, photogeologic map, by R. J. Hackman: I 165, 1956. 50¢ (TEM-467) (OF).
177. Mt. Peale-4 quadrangle, Grand and San Juan Counties, Utah, photogeologic map, by R. J. Hackman: I 172 \* (TEM-527) (OF).

178. Mt. Peale-6 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 173\* (TEM-379B).
179. Mt. Peale-7 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 183\* (TEM-466) (OF).
180. Mt. Peale-8 quadrangle, Utah-Colorado, photogeologic map, by R. J. Hackman: I 174\* (TEM-465) (OF).
181. Mt. Peale-9 quadrangle, San Juan County, Utah and Montrose and San Miguel Counties, Colorado, photogeologic map, by R. J. Hackman: I 157, 1956. 50¢ (TEM-450A) (OF).
182. Mt. Peale-10 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 158, 1956. 50¢ (TEM-451A) (OF).
183. Mt. Peale-11 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman and G. E. Tolbert: I 159, 1956. 50¢ (TEM-380B) (OF).
184. Mt. Peale-16 quadrangle, Utah-Colorado, photogeologic map by R. J. Hackman: I 176\* (TEM-448) (OF).
185. Mt. Pennell-5 quadrangle, Garfield County, Utah, photogeologic map, by R. J. Hackman: I 46, 1955. 50¢ (TEM-596) (OF; NSA).
186. Mt. Pennell-11 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 47, 1955. 50¢ (TEM-633) (OF; NSA).
187. Mt. Pennell-12 quadrangle, Garfield County, Utah, photogeologic map, by J. S. Detterman: I 48, 1955. 50¢ (TEM-597) (OF; NSA).
188. Mt. Pennell-13 quadrangle, Garfield and Kane Counties, Utah, photogeologic map, by J. S. Detterman: I 49, 1955. 50¢ (TEM-615) (OF; NSA).
189. Mt. Pennell-14 quadrangle, Garfield and Kane Counties, Utah, photogeologic map, by R. J. Hackman: I 50, 1955. 50¢ (TEM-613) (OF; NSA).
190. Navajo Mountain-1 quadrangle, San Juan County, Utah, photogeologic map, by A. B. Olson: I 229 \* (TEM-940).
191. Navajo Mountain-2 quadrangle, Kane and San Juan Counties, Utah, photogeologic map, by H. S. Bennett: I 66, 1955. 50¢ (TEM-827) (NSA).
192. Navajo Mountain-3 quadrangle, Kane and San Juan Counties, Utah, photogeologic map, by R. J. Hackman: I 42, 1955. 50¢ (TEM-621) (OF; NSA).

193. Navajo Mountain-4 quadrangle, Kane County, Utah, photogeologic map, by J. S. Detterman: I 43, 1955. 50¢ (TEM-619) (OF; NSA):
194. Navajo Mountain-5 quadrangle, Kane and San Juan Counties, Utah, photogeologic map, by H. S. Bennett: I 44, 1955. 50¢ (TEM-734) (OF; NSA).
195. Navajo Mountain-6 quadrangle, San Juan and Kane Counties, Utah, photogeologic map, by J. S. Detterman: I 41, 1955. 50¢ (TEM-620) (OF; NSA).
196. Navajo Mountain-7 quadrangle, San Juan and Kane Counties, Utah, photogeologic map, by H. S. Bennett: I 77, 1955. 50¢ (TEM-843) (NSA).
197. Navajo Mountain-10 quadrangle, San Juan County, Utah, photogeologic map, by R. J. Hackman: I 233 \* (TEM-934).
198. Navajo Mountain-12 quadrangle, Kane and San Juan Counties, Utah, photogeologic map, by H. S. Bennett: I 45, 1955. 50¢ (TEM-736) (OF; NSA).
199. Navajo Mountain-13 quadrangle, San Juan and Kane Counties, Utah, photogeologic map, by R. J. Hackman: I 184 \* (TEM-526A).
200. Navajo Mountain-15 quadrangle, San Juan County, Utah and Navajo County, Arizona, photogeologic map, by R. J. Hackman: I 185 \* (TEM-935).
201. Notom-15 quadrangle, Garfield County, Utah, photogeologic map, by R. J. Hackman and G. E. Tolbert: I 34, 1955. 50¢ (TEM-640) (OF; NSA).
202. Orange Cliffs-11 quadrangle, Wayne and Garfield Counties, Utah, photogeologic map, by R. G. Ray: I 187 \* (TEM-523A).
203. Orange Cliffs-13 quadrangle, Garfield County, Utah; photogeologic map, by R. G. Ray: I 178 \* (TEM-500A).
204. Orange Cliffs-16 quadrangle, Garfield and San Juan Counties, Utah, photogeologic map, by J. N. Platt: I 16, 1955. 50¢ (TEM-738) (OF; NSA).
205. Orderville Canyon NW quadrangle, Kane and Washington Counties, Utah, photogeologic map, by C. L. Pillmore: I 188 \* (TEM-911).
206. Paria Plateau NW quadrangle, Coconino County, Arizona, photogeologic map, by J. P. Minard: I 171 \* (TEM-963).
207. Paria Plateau SE quadrangle, Coconino County, Arizona, photogeologic map, by C. H. Marshall: I 191 \* (TEM-937).

208. Paria Plateau NE quadrangle, Coconino County, Arizona, photogeologic map, by Kathleen McQueen: I 182 \* (TEM-964).
209. Shinarump NW quadrangle, Coconino County, Arizona, photogeologic map, by R. H. Morris: I 139, 1956. 50¢ (TEM-850).
210. Short Creek NE quadrangle, Mohave County, Arizona, photogeologic map, by C. L. Pillmore: I 142, 1956. 50¢ (TEM-858).
211. Short Creek SE quadrangle, Mohave County, Arizona, photogeologic map, by C. H. Marshall: I 153, 1956. 50¢ (TEM-908).
212. Short Creek NW quadrangle, Mohave County, Arizona, photogeologic map, by C. H. Marshall and C. L. Pillmore: I 141, 1956. 50¢ (TEM-876).
213. Short Creek SW quadrangle, Mohave County, Arizona, photogeologic map, by C. H. Marshall: I 140, 1956. 50¢ (TEM-891).
214. Springdale NE quadrangle, Kane County, Utah, photogeologic map, by C. L. Pillmore: I 148, 1956. 50¢ (TEM-854).
215. Springdale SE quadrangle, Kane County, Utah, photogeologic map, by C. L. Pillmore: I 131, 1956. 50¢ (TEM-855).
216. Springdale SW quadrangle, Washington and Kane Counties, Utah, photogeologic map, by C. L. Pillmore: I 132, 1956. 50¢ (TEM-878).
217. Straight Cliffs-1 quadrangle, Kane County, Utah, photogeologic map, by V. H. Sable: I 40, 1955. 50¢ (TEM-638) (OF; NSA).
218. Straight Cliffs-2 quadrangle, Kane County, Utah, photogeologic map, by J. S. Detterman: I 37, 1955. 50¢ (TEM-662) (OF; NSA).
219. Straight Cliffs-3 quadrangle, Kane County, Utah, photogeologic map, by B. H. Kent: I 13, 1955. 50¢ (TEM-799) (OF; NSA).
220. Straight Cliffs-7 quadrangle, Kane County, Utah, photogeologic map, by B. H. Kent: I 39, 1955. 50¢ (TEM-765) (OF; NSA).
221. Straight Cliffs-8 quadrangle, Kane County, Utah, photogeologic map, by B. H. Kent: I 81, 1955. 50¢ (TEM-769) (NSA).
222. Straight Cliffs-9 quadrangle, Kane County, Utah, photogeologic map, by J. C. Reed, Jr.: I 38, 1955. 50¢ (TEM-757) (OF; NSA).
223. Tanner Wash NW quadrangle, Coconino County, Arizona, photogeologic map, by J. P. Minard: I 193 \* (TEM-939).
224. Tidwell-1 quadrangle, Grand County, Utah, photogeologic map, by V. H. Sable: I 87, 1955. 50¢ (TEM-828) (NSA).

225. Tidwell-2 quadrangle, Emery and Grand Counties, Utah, photogeologic map, by V. H. Sable: I 162, 1956. 50¢ (TEM-842).
226. Tidwell-3 quadrangle, Emery County, Utah, photogeologic map, by C. H. Marshall: I 88, 1955. 50¢ (TEM-759) (NSA).
227. Tidwell-4 quadrangle, Emery County, Utah, photogeologic map, by P. P. Orkild: I 112, 1955. 50¢ (TEM-655) (NSA).
228. Tidwell-5 quadrangle, Emery County, Utah, photogeologic map, by P. P. Orkild: I 113, 1955. 50¢ (TEM-642) (NSA).
229. Tidwell-6 quadrangle, Emery County, Utah, photogeologic map, by H. S. Bennett: I 108, 1955. 50¢ (TEM-755) (NSA).
230. Tidwell-7 quadrangle, Emery and Grand Counties, Utah, photogeologic map, by V. H. Sable: I 12, 1955. 50¢ (TEM-815) (OF; NSA).
231. Tidwell-8 quadrangle, Grand and Emery Counties, Utah, photogeologic map, by V. H. Sable: I 89, 1955. 50¢ (TEM-811) (NSA).
232. Tidwell-9 quadrangle, Emery and Grand Counties, Utah, photogeologic map, by C. E. Bates and V. H. Sable: I 144, 1955. 50¢ (TEM-660) (NSA).
233. Tidwell-10 quadrangle, Emery County, Utah, photogeologic map, by A. B. Olson: I 186 \* (TEM-932).
234. Tidwell-12 quadrangle, Emery County, Utah, photogeologic map, by C. F. Miller: I 3, 1955. 50¢ (TEM-750) (OF; NSA).
235. Tidwell-15 quadrangle, Emery County, Utah, photogeologic map, by V. H. Sable: I 109, 1955. 50¢ (TEM-656) (NSA).
236. Tidwell-16 quadrangle, Emery and Grand Counties, Utah, photogeologic map, by P. P. Orkild: I 115, 1955. 50¢ (TEM-617) (NSA).
237. Virgin NE quadrangle, Washington County, Utah, photogeologic map, by C. H. Marshall: I 161, 1956. 50¢ (TEM-907).
238. Virgin NW quadrangle, Washington County, Utah, photogeologic map, by C. H. Marshall: I 149, 1956. 50¢ (TEM-853).
239. Virgin SW quadrangle, Washington County, Utah, photogeologic map, by C. H. Marshall: I 147, 1956. 50¢ (TEM-849).
240. Virgin SE quadrangle, Washington County, Utah, photogeologic map, by C. L. Pillmore: I 179 \* (TEM-909).
241. White Canyon-1 quadrangle, San Juan and Garfield Counties, Utah, photogeologic map, by J. C. Reed, Jr.: I 33, 1955. 50¢ (TEM-817) (OF; NSA).

242. White Canyon-2 quadrangle, San Juan and Garfield Counties, Utah, photogeologic map, by J. C. Reed, Jr.: I 36, 1955. 50¢ (TEM-813) (OF; NSA).
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244. White Canyon-4 quadrangle, Garfield and San Juan Counties, Utah, photogeologic map, by P. P. Orkild: I 170 \* (TEM-933).
245. White Canyon-7 quadrangle, San Juan County, Utah, photogeologic map, by P. P. Orkild: I 163, 1956. 50¢ (TEM-910).
246. White Canyon-8 quadrangle, San Juan County, Utah, photogeologic map, by P. P. Orkild: I 150, 1956. 50¢ (TEM-906).
247. Woodside-4 quadrangle, Emery and Carbon Counties, Utah, photogeologic map, by V. H. Sable: I 110, 1955. 50¢ (TEM-751) (NSA; OF).
248. Woodside-5 quadrangle, Emery County, Utah, photogeologic map, by P. P. Orkild: I 5, 1955. 50¢ (TEM-754) (OF; NSA).
249. Woodside-12 quadrangle, Emery County, Utah, photogeologic map, by P. P. Orkild: I 111, 1955. 50¢ (TEM-730) (NSA; OF).
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252. Huddle, J. W. and McCann, F. T., Geologic map of the Duchesne River area, Wasatch and Duchesne Counties, Utah: No. 75, 1947. 60¢.
253. Huddle, J. W., Mapel, W. J., and McCann, F. T., Geology of the Moon Lake area, Duchesne County, Utah: OM 115, 1951. 50¢.
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255. Kinney, D. M., Geology of the Uinta River and Brush Creek-Diamond Mountain area, Duchesne and Uintah Counties, Utah: OM 123, 1951. 75¢.
256. Love, J. D., Henbest, L. G., and Denson, N. M., Stratigraphy and paleontology of Paleozoic rocks, Hartville area, eastern Wyoming: OC 44, 1953. 2 sheets. \$1.00 per set.
257. Stokes, W. L. and Phoenix, D. A., Geology of the Egnar-Gypsum Valley area, San Miguel and Montrose Counties, Colorado: No. 93, 1948. 50¢.
258. Strobell, J. D., Jr., Geology of the Carrizo Mountains area in north-eastern Arizona and northwestern New Mexico (with text): OM 160, 1956. \$1.00 (TEM's-415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, and 430).
259. Van Houten, F. B. and Weitz, J. L., Geologic map of the eastern Beaver Divide--Gas Hills area, Fremont and Natrona Counties, Wyoming: OM 180, 1956. 50¢.

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264. Denson, N. M., Bachman, G. O., and Zeller, H. D., Geologic map of the Slim Buttes area, Harding County, South Dakota: C-35, 1955. 50¢ (TEI-467) (NSA).
265. Denson, N. M., Bachman, G. O., Zeller, H. D., Gill, J. R., Moore, G. W., and Melin, R. E., Uraniferous coal beds in parts of North Dakota, South Dakota, and Montana: C-33, 1955. 50¢ (TEI-467) (NSA).
266. Moore, G. W. and Gill, J. R., Geologic map of southern part of Slim Buttes area, Harding County, South Dakota: C-36, 1955. 50¢ (TEI-411) (NSA).
267. Moore, G. W., Melin, R. E., and Kepferle, R. C., Preliminary geologic map of the Chalky Buttes area, Slope County, North Dakota: C-38, 1956. 50¢ (TEI-463).
268. O'Sullivan, R. B., Preliminary geologic map of the Naschitti quadrangle, San Juan and McKinley Counties, New Mexico: C-31, 1955. 50¢.
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7. Publications in scientific journals

Exclusive of "Nuclear Science Abstracts"

(Publications are listed alphabetically by authors)

1. Adams, J. W., Uranium in the Golden Gate Canyon and Ralston Creek areas, Jefferson County, Colorado (abs.): Geol. Soc. Am. Bull., v. 64, no. 12, pt. 2, p. 1539, 1953. (TEM-154) (C-320).
2. Altschuler, Z. S., Cisney, E. A., and Barlow, I. H., X-ray evidence of the nature of the carbonate-apatites (abs.): Geol. Soc. Am. Bull., v. 63, no. 12, pt. 2, p. 1230, 1952; (abs.): in Proc. 19th Int. Geol. Congress, 11th Section, Algeria, p. 9, 1953.
3. Altschuler, Z. S., Clarke, R. S., Jr., and Young, E. J., Uranium in apatite (abs.): Geol. Soc. Am. Bull., v. 65, no. 12, pt. 2, p. 1225, 1954.
4. Antkiw, Stephen, Waesche, H. H., and Senftle, F. E., Surface absorption of Cs<sup>137</sup> ions on quartz crystals: Am. Mineralogist, v. 41, p. 363-366, nos. 3 and 4, 1956. (TEM-862).
5. Archbold, N. L., Relationships of calcium carbonate to lithology and vanadium-uranium deposits in the Salt Wash sandstone member of the Morrison formation (abs.): Geol. Soc. Am. Bull., v. 66, no. 12, pt. 2, p. 1526, 1955.
6. Armstrong, F. C., Generalized composite stratigraphic section for the Soda Springs quadrangle and adjacent areas in southeastern Idaho (map only): in Intermountain Assoc. of Petroleum Geologists, Fourth Annual Field Conference, "Guide to the geology of northern Utah and southeastern Idaho," 1953, in pocket.
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Under many subjects such as "Structure" or "Guides to uranium deposits," the reports listed are only those in which these subjects seem to be of major interest. Examples of subjects listed under "Rocks and materials containing uranium, thorium, or high radioactivity," are "Sandstone," "Veins," and "Metallic ore deposits (base or precious metals)."

Following is a list of most of the major headings used:

- Analytical methods and research
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- Mineralogy, crystallography, and petrography
- Reconnaissance or prospecting for radioactive materials
- State
  - Airborne radioactivity surveys
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Rocks and materials containing uranium,  
vanadium, thorium, beryl, or high radioactivity (Continued)

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Stratigraphic units containing uranium, vanadium,  
thorium, beryl, or high radioactivity (Continued)

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Stratigraphy (Continued)

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| Orange Cliffs-3          | 594            | Tidwell-3         | 759            |
| Orange Cliffs-4          | 664            | Tidwell-4         | 655            |
| Orange Cliffs-5          | 525            | Tidwell-5         | 642            |
| Orange Cliffs-6          | 599            | Tidwell-6         | 755            |
| Orange Cliffs-7          | 612            | Tidwell-7         | 815            |
| Orange Cliffs-8          | 654            | Tidwell-8         | 811            |
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Stratigraphy (Continued)

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Stratigraphy (Continued)

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|   |  |
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