

# **Bureau of Mines Publications 5018**

**Finding aid prepared by Hannah Marshall Bawden**

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April 09, 2019

Describing Archives: A Content Standard

Homestake Adams Research and Cultural Center

April 2019

Deadwood History, Inc.

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## Summary Information

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|-------------------|--|
| <b>Repository</b> | Homestake Adams Research and Cultural Center   |
| <b>Creator</b>    | United States. Bureau of Mines   |
| <b>Title</b>      | Bureau Of Mines Publications   |
| <b>Date</b>       | 1910-1997  |
| <b>Extent</b>     | 3.0 Linear feet  |
| <b>Language</b>   | English  |
| <b>Abstract</b>   | The Bureau of Mines Publications Collection consists of several types of literature published by the Bureau between 1910 and 1997. These publications were received and used by employees of the Homestake Mining Company. |

## Biographical/Historical Note

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The 1910 Organic Act established the United States Bureau of Mines (USBM). Administered by the Department of Interior, the USBM's primary function was to study mine disasters and to provide safety and health inspections. The USBM collected and analyzed information regarding mining and published their findings in reports, circulars, and bulletins.

Over five decades, the USBM's tasks expanded to include investigating mineral-related laws and regulating the production of helium during times of war. USBM built fourteen centers across the country where employees developed new processes for producing titanium and extracting radium for cancer treatments. Employees designed self-rescue equipment for miners. Construction of wetlands to limit mine pollution and minimize subsidence was also overseen by USBM.

Most safety functions carried about by USBM were transferred to the Department of Labor as a result of the passage of the 1977 Federal Mine Safety and Health Act. The USBM decreased their workforce, closed ten centers, and turned their focus to the study of mining technology and mineral studies. The centers in Denver, Pittsburgh, Minneapolis, and Spokane remained in operation until 1995, at which time Congress voted to close the USBM. Reports and circulars already in progress were completed and published until 1997. The USBM's archive of mining maps transferred to the National Mine Map Repository, an extension of the Office of Surface Mining Reclamation and Enforcement (OSMRE) and the U.S. Geological Survey publishes mineral information.

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## Scope and Contents Note

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This collection contains publications from the United States Bureau of Mines and has been arranged into six series.

**Series I Information Circulars** include information on mining and milling methods from around the United States, often with a focus on the cost. Information Circulars also include studies of minerals, human resource management, and procedural manuals for sampling as well as blasting. Please see box list for more information.

**Series II Miner's Circulars** include safety regulations and studies. The circulars contained in this collection largely focus on mine gases and barricading measures during mine fires in the United States and Canada. Please see box list for more information.

**Series III Reports and Lists of Publications** consists of yearbooks and lists put out by the Bureau of Mines, as well as contract reports and collections of reports specifically gathered together by Homestake employees.

**Series IV Technical Papers** cover a wide range of topics including extraction of minerals, explosives, buying and selling of ores, analyses of coal and saving fuel. These papers encompass studies from around the globe. Please see box list for more information.

**Series V Reports of Investigations** cover a wide range of topics but largely focus on the future of mine production, environmental effects of mining, mineral deposits in North America, and the improvement of safety for mine workers. Please see box list for more information.

**Series VI Bulletins** include information on developments in experiment stations, recovery of oil during the mining process, analyses of coal, and investigations into the use of gasses during World War I. The bulletins contained in this collection focus largely on the use and control of natural gases. Please see box list for more information.

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## Arrangement Note

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The collection has been arranged into six series by type of publication and thereunder numerically by their assigned circular, report, or bulletin number.

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## Administrative Information

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### Publication Information

Homestake Adams Research and Cultural Center April 2019

### Conditions Governing Access

This collection is housed at the Homestake Adams Research and Cultural Center with no restrictions to access. The collection may be utilized during normal operating hours or by appointment.

### Processing Information

This collection was processed February 2019 - March 2019 by Hannah Marshall. Assistance provided by Jim Peterson and Claudia Howell.

## **Related Materials**

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### **Related Materials**

Additional publications from the Bureau of Mines can be found in 5017 Nathaniel Herz Papers. Homestake carried out a number of projects in coordination with, and through grants offered by the USBM. Materials and correspondence related to these are found in the Homestake Mining Company Collections. The Homestake Mining Company also contains a number of USGS publications.

The National Mine Map Repository now holds the mining map archive originally owned by the USBM. More information about the National Mine Map Repository can be found online at <https://mmr.osmre.gov/>

## Series I: Information Circulars

## Collection Inventory

| <b>Series I: Information Circulars 1930-1987</b>   |            |
|--|------------|
|  | <b>Box</b> |
| 6236: Milling Practice at the Alaska Juneau Concentrator, February 1930  | 1          |
| 6294: Methods and Cost of Mining Flurspar at Rosiclare, ILL. by Edwin C. Reeder, February 1930                               | 1          |
| 6408: Milling Methods and Costs at the Homestake Mine, Lead, South Dakota by Allan J. Clark, February 1930                   | 1          |
| 6423: Compendium on Limes in Hydrometallurgy and Flotation by R.G. O'Meara, Alexander M. Gow and Will H. Coghill, April 1931 | 1          |
| 6425: Factors Involved in the Heap Leaching of Copper Ores by John D. Sullivan, April 1931                                   | 1          |
| 6433: Amalgamation Practice at Porcupine United Gold Mines, LTD. Timmings, Ont. by Ronald A. Vary, March 1931                | 1          |
| 6476: Milling Methods and Costs at the Argonaut Mill, Jackson, Calif. by Selim E. Woodworth, July 1931                       | 1          |
| 6479: Milling Methods and Costs at the Arthur and Magna Concentrators of the Utah Copper CO. by H.S. Martin, July 1931       | 1          |

## Series I: Information Circulars

|  |   |
|--|---|
| 6492: Milling Methods at the Midvale Concentrator of the U.S. Smelting, Refining and Mining CO., Midvale, Utah by R.A. Pallanch, August 1931                               | 1 |
| 6508: Milling Practice of the Kirkland Lake Gold Mines (LTD.), Kirkland Lake, Ontario by John Dixon, September 1931  | 1 |
| 6544: Milling Methods and Costs of the Minas De Matahambre, S.A. Concentrator by A.R. Kirchner, J.V. Galloway and W.P. Schoder, November 1931                              | 1 |
| 6612: Gold Mining and Milling Methods and Costs and the Vallecito Western Drift Mine, Angels Camp, Calif. by Don Steffa, April 1932  | 1 |
| 6614: A Ventilation Study of Craceton Coal and Coke Co. Mine, Graceton, PA. by R.D. Currie and E.R. Maize, May 1932  | 1 |
| 6707: Methods and Costs of Developing and Equipping the Ashley Gold Mine, Matachewan Gold District, Ontario by W.H. Emens and Chas. F. Jackson, April 1933                 | 1 |
| 6709: Mining Methods and Costs at Granada Gold Mines (LTD.), Rouyn, Quebec by R.L. LoofBourow, April 1933  | 1 |
| 6735: Cost of Equipping and Developing a Small Gold Mine in the Bradshaw Mountains Quadrangle, Yavapai County, Ariz. by David C. Minton, Jr., June 1933                    | 1 |
| 6739: Milling Methods and Costs at the Golden Cycle Mill, Colorado Springs, Colo. by L.S. Harner, July 1933  | 1 |
| 6742: Milling Methods and Costs at the Concentrator of the Premier Gold Mining Co., LTD., Premier B.C., Canada by D.L. Pitt, W.J. Asselstine, and D.L. Coulter August 1933 | 1 |



## Series I: Information Circulars

|   |   |
|---|---|
| 6748: Essentials for a Preliminary Report on a Small Lode-Gold Mine or Prospect, with notes on Sampling by Charles Will Wright, June 1934   | 1 |
| 6748 Ore-Dressing Bibliography, 1931-1932   | 1 |
| 6786 Placer Mining in the Western United States Part I. General Information, Hand-Shoveling and Ground-Sluicing by E.D. Gardner and C.H. Johnson, September 1934                      | 1 |
| 6787 Placer Mining in the Western United States Part II. General Information, Hand-Shoveling and Ground-Sluicing by E.D. Gardner and C.H. Johnson, October 1934                       | 1 |
| 6788 Placer Mining in the Western United States Part III. Dredging and Other Forms of Mechanical Handling and Gravel and Drift Mining by E.D. Gardner and C.H. Johnson, February 1935 | 1 |
| 6800 Mining and Milling Practices at Small Gold Mines by E.D. Gardner and C.H. Johnson, July 1934   | 1 |
| 6816 Waste Filling of Stopes by Charles F. Jackson, January 1935  | 1 |
| 6817 Asbestos- General Information by Oliver Bowles, January 1935   | 1 |
| 6822 Mica by F.W. Horton, 1935-1941   | 1 |
| 6824 Mining and Milling Methods at Big Jim Mine, Oatman, Ariz. by C.H. Johnson, February 1935   | 1 |

## Series I: Information Circulars

|  |   |
|--|---|
| 6839 Essentials in Developing and Financing a Prospect into a Mine by Charles Will Wright, May 1935  | 1 |
| 6847 The Rare Earths by Alice V. Petar, July 1935  | 1 |
| 6900 Mining and Milling Methods and Costs at the Yellow Aster Mine, Randsburg, Calif. by Corwin L. Cooper, August 1936   | 1 |
| 6901 Gold Mining and Milling in the Black Mountains, Western Mohave County, Ariz. by E.D. Gardner, September 1936  | 1 |
| 6987 Gold Mining in New Mexico by O.H. Metzger, January 1938   | 1 |
| 6991 Gold Mining and Milling in the Wickenburg Area, Maricopa and Yavapai Counties, Ariz. by O.H. Metzger, February 1938   | 1 |
| 6999R Laboratories that Make Fire Assays, Analyses and Tests on Ores, Minerals, and Other Inorganic Substances by C.W. Davis and M.W. von Bernewitz, November 1938 | 1 |
| 7000 Treatment and Sale of Black Sands by M.W. von Bernewitz, March 1938   | 1 |
| 7012 Milling Methods and Costs of the Cardinal Gold Mining Co., Bishop Creek, Calif. by Walter B. Lenhart, May 1938  | 1 |
| 7069 Tin Deposits of the Black Hills, South Dakota by E.D Gardner (2 copies), April 1939   | 1 |
| 7085 Saving Golds by Means of Corduroy by M.W. Von Bernewitz, August 1939  | 1 |

Series I: Information Circulars

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|   |   |
|---|---|
| 7097 Strategic Minerals Investigations Procedure Followed by the Bureau of Mines by John W. Finch, December 1939      | 1 |
| 7101 Mining and Milling Methods and Costs in the Alma District, Colorado by Jos. R. Guiteras, April 1940              | 1 |
| 7111 Operations at the Haile Gold Mine, Kershaw, S.C. by Edmund Newton, D.B. Gregg, and McHenry Mosier, May 1940      | 1 |
| 7112 Mining of Feldspar and Associated Minerals in The Southern Black Hills of South Dakota by Jos. R. Guiteras, 1940 | 1 |
| 7117 The Potash Situation by Bertrand L. Johnson, May 1940  | 1 |
| 7184 Marketing Feldspar by Robert W. Metcalf, November 1941   | 1 |
| 7192 Occurrences and Uses of Dolomite in the United States by Shirley F. Colby, November 1941                         | 1 |
| 7216 Magnesium-Bearing Minerals in the Boulder Dam Area for the Production of Magnesium Metal, August 1942            | 1 |
| 7219 Marketing Strategic Mica by Lawrence G. Houk, September 1942   | 1 |
| 7225 Marketing Lithium Minerals by Lawrence G. Houk, December 1942  | 1 |
| 7424 An Easily Constructed Optical Bench by Graham W. Marks, Frank Cossey and Ralph Mills, January 1948               | 1 |

## Series I: Information Circulars

|   |   |
|---|---|
| 7508 Formation Sampling of Large-Diameter Drill Holes at Fort Randall Dam Site, South Dakota by Roswell W. Prouty, 1949   | 1 |
| 7654 Underground Storage of Natural Gas in Coal- Mining Areas by Henry P. Wheeler, Jr. and William E. Eckard, December 1952   | 1 |
| 7669 Uranium-Mining Operations of the Utex Exploration Co. in the Big Indian District, San Juan County, Utah by Charles A. Steen, George P. Dix Jr., Scott W. Hazen Jr. and Russell R. McLellan, October 1953 | 1 |
| 7801 Mining Methods and Costs, Continental Uranium, Inc., Continental No. 1, Mine San Juan County, Utah by W.L. Dare September 1957   | 1 |
| 7803 Mining Methods and Costs - La Sal Mining & Development Co. La Sal Uranium Mine, San Juan County, Utah by W.L. Dare and D.T. Delicate, September 1957   | 1 |
| 7823 Mining Methods and Costs at the Rialto Mine, Nellie B Division, American Zinc, Lead and Smelting Co., Ottawa County, Okla. by W.F. Netzeband, March 1958   | 1 |
| 7878 Tin-Placer Sampling Methods and Results, Cape Mountain District, Seward Peninsula, Alaska by John J. Mulligan and Robert L. Thorne, 1959   | 1 |
| 7908 Underground Mining Methods and Costs at Three Salt Wash Uranium Mines of Climax Uranium Co. by W.L. Dare, 1959   | 1 |
| 7922 Uranium-Mining Practices and Costs at Ten Salt Wash Lease Operations of Union Carbide Nuclear Co. by W.L.Dare, 1959  | 1 |

Series I: Information Circulars

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- 7944 Exploratory Drilling Practices and Costs at Western Uranium Deposits by D.E. Redmon, 1960 1
- 8004 Mining Methods and Techniques Used at the Radon Longwall Operation, Hecla Mining Co., San Juan County, Utah by W.L. Dare and P.M. Lindstrom, 1961 1
- 8012 Mining, Milling, and Water-Control Methods, Rosiclare Fluorspar Works, Aluminum Co. of America by Ronald W. Schaefer, William H. Harrison, and Frank J. Myslinski, 1961 1
- 8016 Mining Methods and Practices, Hurricane Creek Bauxite Mine, Reynolds Mining Corp., Saline County, Ark. by Raymond G. Travis, 1961 1
- 8095 Methods and Costs of Mining and Washing Manganese Ore, Batesville District, Arkansas by H.D. Kline, 1962 1
- 8122 Evaluating Raw Materials for Rotary-Kiln Production of Lightweight Aggregate by Howard P. Hamlin and George Templin, 1962 1
- 8135 Methods for Producing Dimension Stone, Crab Orchard Stone Co., Inc., Cumberland County, Tenn. by Harold L. Riley and H.J. Schroeder, 1962 1
- 8151 Mining Practices at Four Uranium Properties in the Gas Hills, Wyoming by F.D. Everett, 1963 1
- 8252 Mercury Potential of the United States by Bureau of Mines Staff, 1965 1
- 8257 Silver: Facts, Estimates, and Projections by Charles W. Merrill, E.T. McKnight, Thor H. Kiilsgaard, and J. Patrick Ryan, 1965 1

Series I: Information Circulars

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|  |   |
|--|---|
| 8269 Mining Methods and Practices at the Young Mine, American Zinc Co. of Tennessee, Jefferson County, Tenn. by James R. Boyle and Lloyd Williams, 1965          | 1 |
| 8278 Iron Resources of South Dakota 1966   | 1 |
| 8313 Salt Domes in Texas, Louisiana, Mississippi, Alabama, and Offshore Tidelands: A Survey by M.E.Hawkins and C.I. Jirik, 1966                                  | 1 |
| 8325 Evaluation of Domestic Reserves and Potential Sources of Ores Containing Copper, Lead, Zinc, and Associated Metals by F.D. Everett and H.J. Bennett, 1967   | 1 |
| 8427 Silver in the United States by D'Arcy Banister and Richard W. Knostman, 1969  | 1 |
| 8471 Technology and Use of Lignite Proceedings: Bureau of Mines- University of North Dakota Symposium, Grand Forks, North Dakota, May 1-2, 1969 (2 Copies), 1970 | 1 |
| 8516 A Practical Approach to Cutoff Sampling for Repetitive Surveys by Katherine Harding and Arthur Berger, 1971   | 1 |
| 8604 Gold-Lode Deposits, Fairbanks Mining District, Central Alaska by Bruce I. Thomas, 1973  | 1 |
| 8638 Extracting Minerals from Geothermal Brines: A Literature Study by Rolland L. Blake, 1974  | 1 |
| 8925 Explosives and Blasting Procedures Manual by Richard A. Dick, Larry R. Fletcher, and Dennis V. D'Andrea, undated  | 1 |

## Series II: Miner's Circulars

9134 Mining Applications of Life Support Technology, Proceedings: Bureau of Mines Technology Transfer Seminar, Pittsburgh, PA, November 20, 1986 compiled by Mining Research Staff, 1986 1

9135 Surface Mine Blasting Proceedings: Bureau of Mines Technology Transfer Seminar, Chicago IL. Compiled by Bureau of Mines Staff, 1987 1

9145 Human Engineering and Human Resources Management in Mining, Proceedings: Bureau of Mines Technology Transfer Seminar by compiled by Bureau of Mines Staff, 1987 1

**Series II: Miner's Circulars 1914-1993**

**Box**

5 Electrical Accidents in Mines Their Causes and Prevention by H.H. Clark, W.D. Roberts, L.C. Ilsley and H.F. Randolph, 1914 1

25 Erection of Barricades During Mine Fires or After Explosions by J.W. Paul, B.O. Pickard and M.W. Von Bernewitz, 1923 1

33 Mine Gases and Methods for Detecting Them (Revised March 1954) by J.J. Forbes and G.W. Grove, 1954 1

34 Sampling Mine Gases and Use of the Bureau of Mines Portable Orsat Apparatus in their Analysis by W.P. Yant and L.B. Berger, 1936 1

34 Sampling and Analysis of Mine Atmospheres revised by L.B. Berger and H.H. Schrenk (2 Copies), 1948 1

**Series III: Reports and List of Publications**

35 Protection Against Mine Gases by J.J. Forbes and G.W. Grove, 1954 1

36 Procedure in Sealing and Unsealing Mine Fires and in Recovery Operations Following Mine Explosions by J.J. Forbes and G.W. Grove, 1948 1

42 Barricading as a Life-Saving Measure in Connection with Mine Fires and Explosions by D. Harrington and W.J. Fene, 1941 1

55 Fires, Gases, and Ventilation in Metal and Nonmetallic Mines- Accident Prevention Course Section 5 (2 Copies), 1955 1

**Series III: Reports and List of Publications 1910-1977****Box**

Stope Mechanization-Vein Mining by Dravo Corporation Contract # H0262024, 1977 1

List of Publications of Bureau of Mines with an Index by Subjects and Authors, 1910-1929 1

Bureau of Mines Minerals Yearbook 1971 1

Collection of Reports gathered by Homestake Mining Company Regarding Blasting and Vibrations (656,8506,8485,8507,8508,8925,8896) 1971-1995 2

**Series IV: Technical Papers 1911-1944****Box**



## Series IV: Technical Papers

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|   |   |
|---|---|
| 1 The Sampling of Coal in the Mine by Joseph A. Holmes, 1911  | 2 |
| 13 Gas Analysis as an Aid in Fighting Mine Fires by George A. Burrell and Frank M. Seibert, 1912                        | 2 |
| 70 Methods of Oil Recovery in California by Ralph Arnold and V.R. Garfias, 1914   | 2 |
| 83 The Buying and Selling of Ores and Metallurgical Products by Charles H. Fulton, 1915                                 | 2 |
| 97 Saving Fuel in Heating a House by L.P. Breckenridge and S.B. Flagg, 1915   | 2 |
| 125 The Sand Test for Determining the Strength of Detonators by C.G. Storm and W.C. Cope, 1916                          | 2 |
| 160 The Determination of Nitrogen in Substances used in Explosives by W.C. Cope and Guy B. Taylor, 1917                 | 2 |
| 262 Certain Interfacial Tension Equilibria Important in Flotation by Will H. Coghill and Carl O. Anderson, 1923         | 2 |
| 294 Progress of Investigations on Liquid-Oxygen Explosives by S.P. Howell, J.W. Paul and J.L. Sherrick (2 Copies), 1923 | 2 |
| 296 Size and Character of Grains of Nonmetallic Mineral Fillers by W.M. Weigel, 1924                                    | 2 |
| 304 Water-Gas Tar Emulsions by W.W. Odell, 1923   | 2 |

## Series IV: Technical Papers

|   |   |
|---|---|
| 311 Factors in the Spontaneous Combustion of Coal by O.P. Hood, 1922  | 2 |
| 312 Leaching Nonsulphide Copper Ores with Sulphur Dioxide, Charles E. van Barneveld and Edmund S. Leaver, 1923  | 2 |
| 316 Tests of Powdered-Coal Plant: A Report of Investigations at the Power Plant of the St. Joseph Lead Co. Rivermines, MO. by Henry Kreisinger, John Blizard, C.E. Augustine and B.J. Cross, 1923 | 2 |
| 317 Silver in Chloride Volatilization by C.M. Bouton, W.C. Riddell and L.H. Duschak, 1924   | 2 |
| 342 Methods for the Recovery of Platinum, Iridium, Palladium, Gold and Silver from Jewelers' Waste by C.W. Davis, 1924  | 2 |
| 423 Cyanide Extraction of Gold and Silver Associated with Arsenic and Antimony in Ores with Especial Reference to those in Nevada and South Dakota by Edmund S. Leaver and Jesse A. Woolf, 1928   | 2 |
| 482 Toxic Gases from 60 per cent Gelatin Explosives by G. St. J. Perrott, L.W. Babcock, C.D. Bitting and G.W. Jones, 1930   | 2 |
| 484 Analyses of Wyoming Coals by National Coal Association 1931   | 2 |
| 529 Analyses of Montana Coals; Peerless Sample 1932   | 2 |
| 622 Hydrogenation and Liquefaction of Coal Part I Review of Literature Description of Experimental Plan, and Liquid-Phase Assays of Some Technical Bituminous,                                    | 2 |

## Series V: Report of Investigations

|   |            |
|---|------------|
| Subbituminous and Lignitic Coals by H.H. Storch, L.L. Hirst, C.H. Fisher and G.C. Sprunk, 1941  |            |
| 633 Technical and Economic Study of Drying Lignite and Subbituminous Coal by the Fleissner Process by L.C. Harrington, V.F. Parry and Arthur Koth, 1942   | 2          |
| 669 Rare and Uncommon Chemical Elements in Coal by F.H. Gibson and W.A. Selvig (2 Copies), 1944   | 2          |
| <b>Series V: Report of Investigations 1935-1993</b>   |            |
|   | <b>Box</b> |
| 3275 Progress Report - Metallurgical Division 11. Studies on the Recovery of Gold and Silver by Edmund S. Lever, M.B. Royer, J.A. Woolf, R.E. Head, B.W. Gandrud, R.E. Evans and F.W. Thackwell, 1935 | 2          |
| 3288 Detailed Statistical Microscopic Analyses of Ore and Mill Products of the Utah Copper Co. by R.E. Head, A.L. Crawford, F.E. Thackwell, and Glen Burgener, 1935                                   | 2          |
| 3349 Recovery of Potash from Tailing of a Porphyry Copper Property by G.L. Oldright, Virgil Miller, Horst Sieg, W.E. Keck, and F.K. Shelton, 1937   | 2          |
| 3368 Petrographic Identification of Atmospheric Dust Particles by Wilder D. Foster and H.H. Schrenk, 1938   | 2          |
| 3373 Microprojection Method for Counting Impinger Dust Samples; Carlton E. Brown, Lester A.H. Baum, William P. Yant, and Helmuth H. Schrenk, 1938   | 2          |
| 3404 The Pegmatites at Tinton, S. Dak. by Frank L. Hess and Barnabas Bryan Jr., 1938  | 2          |

## Series V: Report of Investigations

|   |   |
|---|---|
| 3598 Bauxite Resources of the United States by J.R. Thoenen, Bureau of Mines and Ernest F. Burchard, Geological Survey, 1941  | 2 |
| 3609 Manganese Investigations - Metallurgical Division 2. Hydrometallurgical Studies of Manganese Ores; Recovery of Manganese from Chamberlain Nodules by the Ryerson Modification of the Sulfur Dioxide Leaching Process by C.E. Wood, C.L. Wallfred, E.P. Barrett, L.J. Reader, S.I. Ginsberg, W.F. Wyman, and R.L. Evans, 1942 | 2 |
| 3613 Manganese Investigations - Metallurgical Division 3. Ore-Dressing Studies of Manganese Ores; Concentration of Manganese Nodules from Chamberlain, S. Dak. by F.D. DeVaney, S.M. Shelton and F.D. Lamb, 1942  | 2 |
| 3662 Lamellar Grading of Powdered Mica by Foster Fraas and Oliver C. Ralston, 1942  | 2 |
| 4075 Daisy Fluorite Mine, Rosiclare Lead and Fluorspar Mining Co., Hardin County, Ill. by Neal M. Muir, 1947  | 2 |
| 4084 Niggerhead Manganese Deposit; Socorro County, N. Mex. by Paul L. Russell and Willis A. Calhoun, 1947   | 2 |
| 4085 Winchester Zinc Deposit, Newton County, Mo. by Homer J. Ballinger, 1947  | 2 |
| 4117 Beneficiation of Western Manganese Ores by C.H. Schack and H.G. Poole, 1947  | 2 |
| 4166 Flotation of Beryllium Ores by J.S. Kennedy and R.G. O'Meara, 1948   | 2 |
| 4190 Studies on Methods for Recovering Scrap Mica from Pegmatite of the Black Hills of South Dakota by Gerald A. Munson and Fremont F. Clarke, 1948   | 2 |

## Series V: Report of Investigations

|   |   |
|---|---|
| 4429 Missouri Valley Manganese Deposits South Dakota; Part III. - Mining and Beneficiation Studies by Paul Zinner and W.A. Grosh, 1949  | 2 |
| 4575 Investigation of the K.T. Dome Zinc-Lead Mine by Owen and Henry Counties, Ky.; William A. Beck, 1949   | 2 |
| 4825 Properties of Colorado Oil Shale by K.E. Stanfield, I.C. Frost, W.S. McAuley, and H. N. Smith, 1951  | 2 |
| 4859 Investigation of Manganese Carbonate and Wad Deposits in the Batesville Manganese District, Arkansas by F.A. Rutledge, W.A. Tessmer, Harold B. Ewoldt, Charles R.L. Oder, M.J. Langley and James E. Bell, 1952 | 2 |
| 5884 Beneficiation of Uranium Ores by K.E. Tame and J.B. Rosenbaum, 1961  | 2 |
| 6128 Biaxial Device for Determining the Modulus of Elasticity of Stress-Relief Cores by John Fitzpatrick, 1962  | 2 |
| 6176 Computing Ore Reserves by the Triangular Method Using a Medium-Size Digital Computer by Richard F. Hewlett, 1963   | 2 |
| 6313 Lightweight Aggregates: Expansion Properties of Clays, Shales, and Argillites of Minnesota by W.A. Grosh and H.P. Hamlin, 1963   | 2 |
| 6393 Lightweight Aggregates; Expansion Properties of Selected Iowa Shales, Clays, and Loess by John W. Sweeney and Howard P. Hamlin, 1964   | 2 |
| 6441 Determining Mine-Production Schedules by Linear Programming by D.E. Redmon, 1964   | 2 |

## Series V: Report of Investigations

|  |   |
|--|---|
| 6485 An Evaluation of the Western Phosphate Industry and its Resources; (in Five Parts)<br>1. Introductory Review by A.L. Service and C.C. Popoff, 1964  | 2 |
| 6587 Tin-Lode Investigations, Potato Mountain Area, Seward Peninsula, Alaska by John J. Mulligan, 1965   | 2 |
| 6611 An Evaluation of the Western Phosphate Industry and its Resources; (in Five Parts)<br>2. Montana by C.C. Popoff and A.L. Service, 1965              | 2 |
| 6634 Design of Drill-Hole Grid Spacings for Evaluating Low-Grade Copper Deposits by Richard F. Hewlett, 1965   | 2 |
| 6645 Statistical Analysis of Gamma-Ray Log Sample Data from a Uranium Deposit, Ambrosia Lake Area, McKinley County, N. Mex. by George R. Schottler, 1965 | 2 |
| 6737 Tin-Lode Investigations, Cape Mountain Area, Seward Peninsula, Alaska by John J. Mulligan, 1966   | 2 |
| 6801 An Evaluation of the Western Phosphate Industry and its Resources;(in Five Parts)<br>3. Idaho by A.L. Service, 1966                                 | 2 |
| 6892 Investigations of the White Mountain Mercury Deposit, Kuskokwim River Basin, Alaska by Raymond P. Maloney, 1967                                     | 2 |
| 6934 An Evaluation of the Western Phosphate Industry and its Resources; (In Five Parts)<br>4. Wyoming and Utah by J.S. Coffman and A.L. Service, 1967    | 2 |
| 6935 An Evaluation of the Western Phosphate Industry and its Resources; (In Five Parts)<br>5. Trends and Outlook by A.L. Service and N.S. Petersen, 1967 | 2 |

## Series V: Report of Investigations

|  |   |
|--|---|
| 6996 Fracturing a Deposit with Nuclear Explosives and Recovering Copper by the In-Situ Leaching Method by William R. Hardwick, 1967  | 2 |
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