

**Publications of the Arizona Bureau of Mines  
(1915-77) and the Arizona Bureau of Geology  
and Mineral Technology (1977-88)**

by

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Arizona Geological Survey  
**Open-File Report 89-6**

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This report is preliminary and has not been edited  
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# Introduction

**Arizona Geological Survey established July 1, 1988.** Its predecessors were the Arizona Bureau of Geology and Mineral Technology (1977-88); the Arizona Bureau of Mines (1915-77); the University of Arizona "Bureau of Mines," also known as the "University School of Mines Testing Laboratories" and the "Bureau of Mines of the Arizona School of Mines" (1893-1915); and the Office of the Territorial Geologist (1881-1912). This report contains a list of all publications of the Arizona Bureau of Mines and the Arizona Bureau of Geology and Mineral Technology.

**Arizona Bureau of Mines, 1915-77.** The Arizona Bureau of Mines was established as an official State agency under authority of the Board of Regents of the University and State Colleges of Arizona. The enabling legislation specified that the agency be administered as a department of the University of Arizona and that its director be a mining engineer. Charles F. Willis, a mining engineer, became the first director. The Arizona Bureau of Mines continued, essentially unchanged, the metallurgical services that had been offered by the "University Bureau of Mines" from 1893-1915.

Statutory duties of the Bureau were to collect, compile, and publish statistics relative to Arizona mining; maintain a library and bibliography of all literature pertaining to Arizona mining and geology; experiment and publish results on various mineral-processing procedures; conduct qualitative analyses of rock and mineral samples; and collect geological

and mineral specimens to constitute the museum of the State Mining Bureau.

**Arizona Bureau of Geology and Mineral Technology, 1977-88.** The new enabling act changed the Bureau of Mines to the Bureau of Geology and Mineral Technology and established two branches: the Geological Survey Branch, which was the State Geological Survey, and the Mineral Technology Branch, which continued most Bureau of Mines functions. The director was to be a geologist or a geological, mining, or metallurgical engineer registered by the State Board of Technical Registration. The assistant director in charge of the Geological Survey Branch was to carry the title "State Geologist" and was to be a geologist or a geological engineer, also registered by the State Board of Technical Registration. The new Bureau was established as a scientific, investigative, and information agency whose purpose was to conduct research and provide information. Provisions for a geological library and a repository for rock cuttings and cores were included in the enabling act. The new Bureau was, for the first time, also given responsibility for geologic hazards and limitations to land use.

The Bureau, which continued to function as a State agency, was organized as a division of the University of Arizona, administered by the Board of Regents and supervised by the president of the university or his designate.

# Publications of the Arizona Bureau of Mines\*

1915-77

## BULLETINS

1. The Needs of Better Mining Education. C.F. Willis, 1915, 14 p.
2. The Scope of the Work of the Arizona State Bureau of Mines. C.F. Willis, 1915-16, 8 p.
3. Directory of Arizona Minerals. 1915-16, 16 p.
4. Manganese. P.E. Joseph, 1915-16, 14 p.
5. Molybdenum. P.E. Joseph, 1915-16, 15 p.
6. Arizona. C.F. Willis, 1915-16, 16 p.
7. A United States Bureau of Mines Experiment Station at Tucson. 1915-16, 7 p.
8. Asbestos. P.E. Joseph, 1915-16, 10 p.
9. State Safety Bulletin. January 1916, 16 p.
10. Gold Placers of Arizona. F.G. McClure, 1915-16, 14 p.
11. Tungsten. A.C. Rubel, 1917-18, 12 p.
12. Mercury-Quicksilver. P.E. Joseph, 1915-16, 6 p.
13. State Safety Bulletin. February 1916, 16 p.
14. Magnesite. F.L. Culin, Jr., 1915-16, 8 p.
15. State Safety News. March 1916, 15 p.
16. Mica. F.L. Culin, Jr., 1915-16, 10 p.
17. Coal in Arizona. A.C. Rubel, 1915-16, 12 p.
18. Vanadium. P.E. Joseph, 1915-16, 8 p.
19. Gypsum. F.L. Culin, Jr., 1915-16, 8 p.
20. Zinc. P.E. Joseph, 1915-16, 12 p.
21. State Safety News. April 1916, 19 p.
22. Antimony. P.E. Joseph, 1915-16, 8 p.
23. Bibliography of Arizona Mining, Metallurgy and Geology. 1915-16, 49 p.
24. Directory of Arizona Operating Mines. 1915-16, 30 p.
25. Cement. F.L. Culin, Jr., 1915-16, 15 p.
26. Mill and Smelter Methods of Sampling. H.J. Stander, 1915-16, 14 p.
27. State Safety News. May 1916, 16 p.
28. State Safety News. May 1916, 11 p.
29. Resources of Santa Cruz County. A.T. Bird, 1916, 27 p.
30. State Safety News. June 1916, 16 p.
31. State Safety News. July 1916, 16 p.
32. State Safety News. August 1916, 14 p.
33. State Safety News. September 1916, 12 p.
34. State Safety News. October 1916, 11 p.
35. Celestite and Strontianite. F.L. Culin, Jr., 1916, 4 p.
36. The Selling of Copper. H.J. Stander, 1916, 7 p.
37. Copper. P.E. Joseph, 1916, 14 p.
38. State Safety News. November 1916, 14 p. (Also a Spanish edition).
39. The Selling of Lead and Zinc. H.J. Stander, 1916, 9 p.
40. Building Stones. F.L. Culin, Jr., 1916, 11 p.
41. Mineralogy of Useful Minerals in Arizona. 1916, 70 p.
42. State Safety News. December 1916, 14 p. (Also a Spanish edition).
43. Iron. P.E. Joseph, 1916, 13 p.
44. Workmen's Compensations. J.P. Jones, 1916, 19 p.
45. Lead. P.E. Joseph, 1916, 12 p.
46. Lime Rocks. F.L. Culin, Jr., 1917, 8 p.
47. State Safety News. January 1917, 14 p. (Also a Spanish edition).
48. Gems and Precious Stones of Arizona. F.L. Culin, Jr., 1917, 7 p.
49. Miscellaneous Minerals. P.E. Joseph, 1917, 6 p.
50. State Safety News. February 1917, 10 p. (Also a Spanish edition).
51. Sampling and the Estimation of Gold in a Placer Deposit. G.R. Fansett, 1917, 17 p.
53. State Safety News. March 1917, 10 p. (Also a Spanish edition).
55. State Safety News. April 1917, 12 p. (Also a Spanish edition).
56. State Safety News. May 1917, 14 p. (Also a Spanish edition).
56. State Safety News. June 1917, 18 p. (Also a Spanish edition).
57. State Safety News. July 1917, 9 p. (Also a Spanish edition).
58. State Safety News. S.C. Dickinson, ed., August 1917, 14 p. (Also a Spanish edition).
59. Yavapai, the Land of Opportunity. G.M. Sparkes, 1917, 9 p.
60. First Aid Instructions. S.C. Dickinson, 1917, 60 p. (Also a Spanish edition).
61. State Safety News. S.C. Dickinson, ed., September 1917, 14 p. (Also a Spanish edition).
62. Selling Prospects. C.F. Willis, 1917, 18 p.
63. Sampling of Dumps and Tailings. G.R. Fansett, 1917, 20 p.
64. State Safety News. S.C. Dickinson, ed., October 1917, 9 p. (Also a Spanish edition).
65. Oil and Its Geology. M.A. Allen, 1917, 34 p.
66. Sampling Mineralized Veins. G.R. Fansett, 1917, 5 p.
67. State Safety News. S.C. Dickinson, ed., November 1917, 14 p. (Also a Spanish edition).
68. What to Do With the Other Eight Hours. S.C.

\* The following bulletins are not available in the Arizona Geological Survey library because they are unrelated to geology or mining: 52, 54, 74, 95, 100, 101, 102, 103, 107, 108, 109, 110, 111, and 112. Two different issues of Bulletin 56 were printed: May 1917 and June 1917.

- Dickinson, 1917, 14 p.
69. Prospecting for Petroleum. M.A. Allen, 1917, 18 p.
  70. State Safety News. S.C. Dickinson, ed., December 1917, 14 p.
  71. Select Blowpipe and Acid Tests for Minerals. 1917, 5 p.
  72. Roads for Mines. G.R. Fansett, 1917, 13 p.
  73. State Safety News. S.C. Dickinson, ed., January 1918, 14 p. (Also a Spanish edition).
  75. The Arizona State Bureau of Mines. 1918, 13 p.
  76. The State Bureau of Mines Lecture Course. 1918, 10 p.
  77. State Safety News. S.C. Dickinson, ed., February 1918, 14 p. (Also a Spanish edition).
  78. Valuation of Prospects. G.R. Fansett, 1918, 9 p.
  79. Drilling for Oil. M.A. Allen, 1918, 8 p.
  80. State Safety News. S.C. Dickinson, ed., March 1918, 12 p. (Also a Spanish edition).
  81. How to Organize for Safety. S.C. Dickinson, 1918, 52 p.
  82. Shafts and Tunnels. G.R. Fansett, 1918, 15 p.
  83. State Safety News. S.C. Dickinson, ed., April 1918, 13 p.
  84. Laws Pertaining to Oil. M.A. Allen, 1918, 12 p.
  85. State Safety News. May 1918, 12 p.
  86. Keeping Your Town Clean. S.C. Dickinson, 1918, 6 p.
  87. State Safety News. S.C. Dickinson, ed., June 1918, 11 p.
  88. State Safety News. S.C. Dickinson, ed., July 1918, 14 p.
  89. State Safety News. S.C. Dickinson, ed., August 1918, 16 p. (Also a Spanish edition).
  90. State Safety News. S.C. Dickinson, ed., September 1918, 17 p. (Also a Spanish edition).
  91. Manganese. M.A. Allen and G.M. Butler, 1918, 32 p.
  92. State Safety News. S.C. Dickinson, ed., October 1918, 16 p.
  93. Field Tests for the Common Metals in Minerals. G.R. Fansett, compiler, 1918, 21 p.
  94. State Safety News. S.C. Dickinson, ed., November 1918, 16 p.
  96. State Safety News. S.C. Dickinson, ed., December 1918, 12 p.
  97. State Safety News. S.C. Dickinson, ed., January 1919, 12 p.
  98. State Safety News. S.C. Dickinson, ed., February 1919, 16 p.
  99. Barytes. M.A. Allen and G.M. Butler, 1919, 18 p.
  104. List of United States Geological Survey Publications Relating to Arizona. O.P. Jenkins and E.D. Wilson, 1920, 40 p.
  105. Field Tests for the Common Metals (3rd ed.). G.R. Fansett, 1920, 29 p.
  106. A Geological Reconnaissance of the Tucson and Amole Mountains, *With* Notes on the Southern Section of the Amole Mining District (by M.A. Allen). O.P. Jenkins and E.D. Wilson, 1920, 29 p.
  113. Asbestos. M.A. Allen and G.M. Butler, 1921, 31 p.
  114. Fluorspar. M.A. Allen and G.M. Butler, 1921, 19 p.
  115. Vanadium. M.A. Allen and G.M. Butler, 1921, 23 p.
  116. Petroleum. G.M. Butler and M.A. Allen, 1921, 45 p.
  117. Uranium and Radium. G.M. Butler and M.A. Allen, 1921, 26 p.
  118. Arizona Gold Placers. M.A. Allen, 1922, 24 p.
  119. A Resume of Arizona Geology. N.H. Darton, 1925, 298 p.
  120. Gold and Copper Deposits Near Payson, Arizona. Carl Lausen and E.D. Wilson, 1925, 44 p.
  121. Field Tests for the Common Metals (4th ed.). G.R. Fansett, 1926, 37 p.
  122. Quicksilver (Mercury) Resources of Arizona. Carl Lausen and E.D. Gardner, 1927, 112 p.
  123. Geology and Ore Deposits of the Courtland-Gleeson Region, Arizona. E.D. Wilson, 1927, 79 p.
  124. Arizona Gold Placers (2nd ed.). E.D. Wilson, 1927, 60 p.
  125. The Mineral Industries of Arizona. J.B. Tenney, 1928, 135 p.
  126. Asbestos Deposits of Arizona, *With an* Introduction on Asbestos Minerals (by G.M. Butler). E.D. Wilson, 1928, 100 p.
  127. Manganese Ore Deposits in Arizona. E.D. Wilson and G.M. Butler, 1930, 107 p.
  128. Field Tests for the Common Metals (5th ed.). G.R. Fansett, 1930, 51 p.
  129. Second Report on the Mineral Industries of Arizona. J.B. Tenney, 1930, 108 p.
  130. Petroleum. G.M. Butler and J.B. Tenney, 1931, 50 p.
  131. Geology and Ore Deposits of the Oatman and Katherine Districts, Arizona. Carl Lausen, 1931, 126 p.
  132. Arizona Gold Placers and Placering (3rd ed.). E.D. Wilson, J.B. Tenney, G.R. Fansett, C.H. Johnson, M.C. Smith, F.P. Perkins, C.T. Vorhies, and G.M. Butler, 1932, 114 p.
  133. Treating Gold Ores. T.G. Chapman, 1932, 32 p.
  134. Geology and Mineral Deposits of Southern Yuma County, Arizona. E.D. Wilson, 1933, 236 p., 4 plates, various scales.
  135. Arizona Gold Placers and Placering (4th ed.). E.D. Wilson, G.R. Fansett, C.H. Johnson, M.C. Smith, F.P. Perkins, C.T. Vorhies, and G.M. Butler, 1933, 148 p. (reprinted in 1937 as Bulletin 142).
  136. Field Tests for the Common Metals (6th ed.). G.R. Fansett, 1934, 56 p.
  137. Arizona Lode Gold Mines and Gold Mining. E.D. Wilson, J.B. Cunningham, and G.M. Butler, 1934 (revised 1967, reprinted 1983), 261 p.
  138. Treating Gold Ores (2nd ed.). T.G. Chapman, 1935, 28 p.
  139. Some Facts About Ore Deposits. G.M. Butler, 1935, 99 p.
  140. Arizona Metal Production. M.J. Elsing and R.E.S. Heineman, 1936, 112 p.
  141. Geology and Ore Deposits of the Ajo Quadrangle, Arizona. James Gilluly, 1937, 83 p., 4 plates, various

- scales.
142. See Bulletin 135.
  143. Geology and Ore Deposits of the Tombstone District, Arizona. B.S. Butler, E.D. Wilson, and C.A. Raser, 1938, 114 p., 25 plates, various scales.
  144. Geology and Ore Deposits of the Mammoth Mining Camp Area, Pinal County, Arizona. N.P. Peterson, 1938, 63 p., 10 plates, various scales.
  145. Some Arizona Ore Deposits (Papers presented at the regional meeting of the A.I.M. & M.E. held in Tucson, Arizona, Nov. 1-5, 1938). 1938, 136 p., 37 plates, various scales.
  146. Bibliography of the Geology and Mineral Resources of Arizona. E.D. Wilson, 1939, 164 p.
  147. Field Tests for the Common Metals (7th ed.). G.R. Fansett, 1940, 56 p.
  148. Tungsten Deposits of Arizona. E.D. Wilson, 1941, 54 p.
  149. Minerals of Arizona. F.W. Galbraith, 1941, 82 p.
  150. Field Tests for the Common Metals (8th ed.). G.R. Fansett, 1942, 56 p.
  151. Geology and Ore Deposits of the Superior Mining Area, Arizona. M.N. Short, F.W. Galbraith, E.N. Harshman, T.H. Kuhn, and E.D. Wilson, 1943, 159 p., 8 plates, various scales.
  152. Arizona Nonmetallics: A Summary of Past Production and Present Operations. E.D. Wilson, 1944, 58 p.
  153. Minerals of Arizona (2nd ed.). F.W. Galbraith, 1947, 101 p.
  154. Field Tests for the Common Metals (9th ed.). G.R. Fansett, 1948, 56 p.
  155. Arizona Nonmetallics: A Summary of Past Production and Present Operations (2nd ed.). E.D. Wilson and G.H. Roseveare, 1949, 60 p.
  156. Arizona Zinc and Lead Deposits, Part 1. 1950, 144 p., 19 figures, various scales.
  157. Field Tests for the Common Metals (10th ed.). G.R. Fansett, 1951, 56 p.
  158. Arizona Zinc and Lead Deposits, Part II. 1951, 118 p.
  159. The Mineral Resources of Arizona. 1951, 15 p.
  160. Arizona Gold Placers and Placering (5th ed.). E.D. Wilson, G.R. Fansett, C.H. Johnson, F.P. Perkins, and C.T. Vorhies, 1952, 128 p.
  161. Bibliography of the Geology and Mineral Resources of Arizona, 1939-1952. J.W. Anthony, E.D. Wilson, and R.T. Moore, 1953, 62 p.
  162. Pegmatite Deposits of the White Picacho District, Maricopa and Yavapai Counties, Arizona. R.H. Jahns, 1952 (reprinted 1969), 105 p., 9 plates, various scales.
  163. Minerals and Metals of Increasing Interest - Rare and Radioactive Minerals. R.T. Moore, 1953, 40 p.
  164. Exploration and Development of Small Mines. H.E. Krumlauf, 1954 (revised 1966), 34 p.
  165. One Hundred Arizona Minerals. R.T. Moore, 1955 (reprinted 1966, 1975), 35 p.
  166. Petrology - Condensed and Simplified. G.M. Butler, 1959 (reprinted 1967), 31 p.
  167. Some Rare-Earth Mineral Deposits in Mohave County, Arizona. E.W. Heinrich, 1960 (reprinted 1967), 22 p.
  168. Gold Placers and Placering in Arizona. E.D. Wilson, G.R. Fansett, C.H. Johnson, and G.H. Roseveare, 1961 (reprinted 1981, 1988), 124 p.
  169. The Mineral Industries of Arizona - A Brief History of the Development of Arizona's Mineral Resources. T.G. Chapman, ed., 1962, 20 p.
  170. Maps, With Special Reference to the Geologic and Mineral Maps of Arizona. J.D. Forrester and R.T. Moore, 1962, 11 p.
  171. A Resume of the Geology of Arizona. E.D. Wilson, 1962 (reprinted 1976), 140 p.
  172. The Use of Compressed Air in Small Mines. H.E. Krumlauf, 1963, 32 p.
  173. Bibliography of the Geology and Mineral Resources of Arizona, 1848-1964. R.T. Moore and E.D. Wilson, 1965 (reprinted 1984), 321 p.
  174. Guidebook 1 - Highways of Arizona, U.S. Highway 666. E.D. Wilson, 1965 (reprinted 1971, 1982), 68 p.
  175. Field Tests for the Common Mineral Elements. G.H. Roseveare, 1966 (reprinted 1979), 43 p.
  176. Geologic Guidebook 2 - Highways of Arizona, Arizona Highways 77 and 177. H.W. Peirce, 1967 (reprinted 1971, 1975), 73 p.
  177. Mineral Deposits of the Fort Apache Indian Reservation, Arizona. R.T. Moore, 1968, 84 p., 2 plates, scale 1:250,000.
  178. A Brief History of the United Verde Open Pit, Jerome, Arizona. E.M.J. Alenius, 1968 (reprinted 1971), 34 p.
  179. Mineral Deposits of the Gila River Indian Reservation, Arizona. E.D. Wilson, 1969, 34 p., 3 plates, scale 1:250,000 and 1:12,000.
  180. Mineral and Water Resources of Arizona. 1969 (reprinted 1975), 638 p. (Part I, Geology and Mineral Resources of Arizona, reprinted 1989, 464 p.).
  181. Minerals of Arizona. F.W. Galbraith and D.J. Brennan, 1970, 116 p.
  182. Coal, Oil, Natural Gas, Helium, and Uranium in Arizona. H.W. Peirce, Stanton B. Keith, and J.C. Wilt, 1970 (reprinted 1975), 289 p., 19 plates, various scales.
  183. Geologic Guidebook 3 - Highways of Arizona, Arizona Highways 85, 86, and 386. Stanton B. Keith, 1971 (reprinted 1974), 80 p.
  184. Geologic Guidebook 4 - Highways of Arizona, Arizona Highways 87, 88, and 188. C.F. Royse, Jr., M.F. Sheridan, and H.W. Peirce, 1971 (reprinted 1974), 66 p.
  185. Arizona Well Information. H.W. Peirce and J.R. Scurlock, 1972 (reprinted 1988), 195 p.
  186. Geology of the Virgin and Beaverdam Mountains, Arizona. R.T. Moore, 1972, 65 p., 6 plates, various scales.
  187. Index of Mining Properties in Cochise County, Arizona. Stanton B. Keith, 1973 (reprinted 1985), 98 p.

188. The Mineral Industry of Arizona in 1971. Lyman Moore, 1973, 20 p.
189. Index of Mining Properties in Pima County, Arizona. Stanton B. Keith, 1974 (reprinted 1984), 156 p.
190. Bibliography of the Geology and Mineral Resources of Arizona, 1965-1970. J.S. Vuich and J.C. Wilt, 1974 (reprinted 1988), 155 p.
191. Index of Mining Properties in Santa Cruz County, Arizona. Stanton B. Keith, 1975, 94 p.

#### CIRCULARS

1. Diatomaceous Earth. E.D. Wilson, 1940, 6 p.
2. Alunite. R.E. Heineman, 1940, 1 p.
3. Mica. E.D. Wilson, 1940, 4 p.
4. Vermiculite. E.D. Wilson, 1940, 3 p.
5. Gypsum. F.W. Galbraith, 1940, 6 p.
6. Manganese. E.D. Wilson, 1941, 3 p.
7. Quartz. R.E. Heineman, 1941, 2 p.
8. The Use and Limitations of the Spectrograph in Examining Prospectors' Samples. F.S. Wartman and A.J. Thompson, 1941, 5 p.
9. Quicksilver (Mercury). E.D. Wilson, 1941, 15 p.
10. Tungsten. E.D. Wilson, 1941, 14 p.
11. Magnesium. E.D. Wilson, 1942, 8 p.
12. Arizona Perlite. E.D. Wilson and G.H. Roseveare, 1945, 10 p.
13. Radioactive Uranium and Thorium (2nd ed.). J.W. Anthony, 1950, 23 p.
14. Fifty Common Arizona Minerals. F.W. Galbraith and J.W. Anthony, 1949, 17 p.
15. Fluorspar in Arizona. E.D. Wilson, 1951, 13 p.
16. Strata-Bound Sulfide Deposits and Suggestions for Exploration in Arizona. J.S. Vuich, 1974, 11 p.
17. Utilization of Municipal Waste Water for Froth Flotation of Copper and Molybdenum Sulfides. W.W. Fisher and Samuel Rudy, 1976, 16 p.
18. Chemical Analyses of Coal Samples From the Black Mesa Field, Arizona. R.T. Moore and others, 1977, 14 p.

#### MAPS

1. Base Map of Arizona. (Reprinted 1983), scale 1:1,000,000.
2. Geologic Map of Superior Mining Area, Arizona. M.N. Short, I.A. Ettlenger, F.W. Galbraith, E.N. Harshman, H.R. Wardwell, and T.H. Kuhn, 1942, scale 1:12,000 (included in Bulletin 151).
3. County Geologic Map Series. E.D. Wilson and others, scale 1:375,000.
  - 3-1. Cochise County. 1959.
  - 3-2. Coconino County. 1960.
  - 3-3. Gila County. 1959.
  - 3-4. Graham and Greenlee Counties. 1958.

- 3-5. Maricopa County. 1957.
  - 3-6. Mohave County. 1959.
  - 3-7. Navajo and Apache Counties. 1960.
  - 3-8. Pima and Santa Cruz Counties. 1960.
  - 3-9. Pinal County. 1959.
  - 3-10. Yavapai County. 1958.
  - 3-11. Yuma County (includes La Paz County). 1960.
4. Metallic Mineral Occurrence Maps. Scale 1:1,000,000.
    4. Map of Known Metallic Mineral Occurrences of Arizona. F.J. McCrory and R.T. O'Haire, compilers, 1961.
    - 4-1. Map of Known Nonferrous Base and Precious Metal Mineral Occurrences in Arizona. Stanton B. Keith, compiler, 1969 (reprinted 1978).
    - 4-2. Map of Known Metallic Mineral Occurrences (Excluding Base and Precious Metals) in Arizona. Stanton B. Keith, compiler, 1969.
  5. Map of Known Nonmetallic Mineral Occurrences of Arizona. F.J. McCrory and R.T. O'Haire, compilers, (revised 1965, reprinted 1979), scale 1:1,000,000.
  6. Map and Index of Arizona Mining Districts. E.D. Wilson, R.T. O'Haire, and F.J. McCrory, compilers, 1961, scale 1:1,000,000.
  7. Geologic Cross Sections of Arizona. R.T. Moore and E.D. Wilson, 1962, scale 1:188,000.
    - 7-1. Sheet 1, sections 1, 2, and 3.
    - 7-2. Sheet 2, sections 4, 5, and 6.
    - 7-3. Sheet 3, sections 7 and 8.
  8. Map of Outcrops of Precambrian Rocks in Arizona. 1962, scale 1:1,000,000.
  9. Map of Outcrops of Paleozoic and Mesozoic Rocks in Arizona. 1962, scale 1:1,000,000.
  10. Map of Outcrops of Laramide (Cretaceous-Tertiary) Rocks in Arizona. 1962, scale 1:1,000,000.
  11. Map of Outcrops of Tertiary and Quaternary Igneous Rocks in Arizona. 1962, scale 1:1,000,000.
  12. Map of Arizona Showing Principal Power and Transportation Facilities. F.L. Stubbs and R.T. Moore, compilers, 1963, scale 1:1,000,000.
  13. Geologic Map of Arizona. E.D. Wilson, R.T. Moore, and J.R. Cooper, 1969, scale 1:500,000.

#### OPEN-FILE REPORTS

- 74-1. Outcrop and Surficial Geology, Flagstaff Area, Coconino County, Arizona. E.L. Montgomery, W.R. Henkle, Jr., W.J. Alexander, K.S. Murray, R.E. Reid, C.F. Kluth, and R.H. DeWitt, 1974, scale 1:24,000.
- 76-1. Cross Sections of Southern Arizona and Adjacent Parts of California and New Mexico. C.B. Richardson, 1976, 51 cross sections.

# Publications of the Arizona Bureau of Geology and Mineral Technology

August 27, 1977 - June 30, 1988

## BULLETINS

192. Index of Mining Properties in Yuma County, Arizona. Stanton B. Keith, 1978, 185 p.
193. Arizona Earthquakes, 1776-1980. S.M. DuBois, A.W. Smith, N.K. Nye, and T.A. Nowak, Jr., 1982, 456 p., scale 1:1,000,000 (includes Map 16).
194. Metallic Mineral Districts and Production in Arizona. Stanley B. Keith, D.E. Gest, Ed DeWitt, Netta Woode Toll, and B.A. Everson, 1983 (reprinted 1986), 58 p., scale 1:1,000,000 (includes Map 18).
195. Geology of the South Mountains, Central Arizona. S.J. Reynolds, 1985, 61 p., scale 1:24,000.
196. Mine Index for Metallic Mineral Districts of Arizona. J.W. Welty, S.J. Reynolds, Stanley B. Keith, D.E. Gest, R.A. Trapp, and Ed DeWitt, 1985, 92 p.
197. Compilation of Radiometric Age Determinations in Arizona. S.J. Reynolds, F.P. Florence, J.W. Welty, M.S. Roddy, D.A. Currier, A.V. Anderson, and Stanley B. Keith, 1986, 258 p., 2 plates, scale 1:1,000,000 (includes Maps 24 and 25).

## CIRCULARS

19. A Survey of Uranium Favorability of Paleozoic Rocks in the Mogollon Rim and Slope Region - East Central Arizona. H.W. Peirce, Nile Jones, and Ralph Rogers, 1977, 71 p.
20. Geology of the Socorro Peak Area, Western Harquahala Mountains. R.J. Varga, 1977, 20 p.
21. The Mississippian and Pennsylvanian (Carboniferous) Systems in the United States - Arizona. H.W. Peirce, 1981, 20 p. (Chapter Z from U.S. Geological Survey Professional Paper 1110).
22. Index to Road Logs and River Logs in Arizona 1950-1980. J.R. LaVoie and T.G. McGarvin, 1981, 14 p.
23. Geothermal Resources in Arizona: A Bibliography. S.S. Calvo, 1982, 23 p.
24. Bibliography for Metallic Mineral Districts in Cochise, Graham, and Greenlee Counties, Arizona. Lorraine Schnabel and J.W. Welty, 1986, 38 p.
25. Bibliography for Metallic Mineral Districts in La Paz, Mohave, and Yuma Counties, Arizona. Lorraine Schnabel and J.W. Welty, 1986, 45 p.
26. Bibliography for Metallic Mineral Districts in Pima and Santa Cruz Counties, Arizona. Lorraine Schnabel, J.W. Welty, R.A. Trapp, and S.J. Reynolds, 1986, 44 p.

## MAPS

14. Geologic Map and Cross-Sections of Arizona. J.R. Cooper and G.C. Cone, compilers, cross-sections by H.W. Peirce, 1977, scale 1:2,500,000.
15. Geothermal Resource Maps.
  - 15-1. Geothermal Energy Resources of Arizona. W.R. Hahman, Sr., Claudia Stone, and J.C. Witcher, 1978, scale 1:1,000,000.
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1. Late Cenozoic Geology of the White Mountains,

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2. Guidebook to the Geology of Central Arizona. D.M. Burt and T.L. Pewe, eds., 1978 (reprinted 1987), 176 p.
  3. The 1887 Earthquake in San Bernardino Valley, Sonora: Historic Accounts and Intensity Patterns in Arizona. S.M. DuBois and A.W. Smith, 1980, 112 p.
  4. Proceedings of the 21st Forum on the Geology of Industrial Minerals. H.W. Peirce, ed., 1987, 134 p.
  5. Geologic Diversity of Arizona and Its Margins: Excursions to Choice Areas (Field-trip guidebook for the 100th annual meeting of the Geological Society of America). G.H. Davis and E.M. Vandendolder, eds., 1987, 422 p.
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- GI-1-A. Geology. 1978.
- GI-1-B. Landforms. 1978.
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- GI-2-A. Geology, Tempe Quadrangle.
- GI-2-B. Geology, Papago Park Pediment.
- GI-2-C. Cross Sections, Papago Park Pediment.
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- MM-76-B. Geologic Map of the Mayer-Crown King Area, Yavapai County, Arizona, and Metamorphic and Chemical Data Map, Mayer-Crown King Area,

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- MM-77-A. Geologic Map and Section of the Canada Del Oro Valley Headwaters, Santa Catalina Mountains, Pima-Pinal Counties, Arizona. G.A. Suemnicht, 1977, scale 1:1,000.
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- 79-2b. A Progress Report of Geothermal Investigations in the Clifton Area. J.C. Witcher, 1979, 16 p.
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