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**MS 1424**  
**Keith Martin Collection**  
**1950 - 1997**

**DESCRIPTION**

The Keith Martin Collection consists of mining papers and publications collected by Martin during his work with Kennecott Copper Company in New Mexico and Arizona. The majority of the collection is professional publications in the fields of mining and geology collected by Martin over the years. Included with the publications are three of Martin's own professional papers. The collection also has Martin's notebooks on the Mineral Park copper deposits; personal and professional correspondence during the 1950s; and various notes, maps and reports from his exploratory geological work in Mexico, Arizona and other states in the Southwest.

9 Boxes, 4.5 linear ft.

**BIOGRAPHICAL NOTE**

Keith Martin was born on September 23, 1925 in Greenwich, Connecticut. After serving in the United States Army Air Corps from 1943 until 1945, he used his G.I. Bill to complete his high school education at Wilbraham Academy, (graduating in 1947) and continuing onto Williams College. Upon graduating from Williams in 1951, he had been recruited by the Kennecott Copper Corp. and sent to the University of Arizona for additional training under the tutelage of B.S. Butler. He worked for Kennecott as an exploration geologist in Arizona and the southwest. Eventually he became a member of the Kennecott subsidiary, Bear Creek Mining company. In 1955, upon the death of his first wife, Gloria Best, he left Kennecott. Eventually, he went to work as a freelance consultant in geology. During this time he discovered the large deposit of low-grade copper ore now known as Ithaca Peak in northwest Arizona near Kingman and with the help of Harrison Schmitt, geologist for the Duval Corp., convinced Duval to begin mining there. He also did exploratory work in Panama and Mexico. He returned to Tucson in 1958 and established Concrete Designs with Donlon LoBiondo, a fellow geologist. He married his second wife, June Johnson Caldwell in 1966. He died on February 18, 2008.

**ACQUISITION**

Donated by June Martin in 2010.

**ACCESS**

There are no restrictions on access to this collection.

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Requests for permission to publish material from this collection should be addressed to the Arizona Historical Society, Tucson, Archives Department.

**PROCESSING**

The collection was processed by Dave Tackenberg in January 2011.

## Box and Folder Listing

### Box 1

f. 1	Keith Martin information and photos	
f. 2	Martin correspondence - personal and professional	1951-1952
f. 3	Martin correspondence - personal and professional	1953
f. 4	Martin correspondence - personal and professional	1954
f. 5	Martin correspondence - personal and professional	1955
f. 6	Martin correspondence - personal and professional	1955
f. 7	Martin correspondence - personal and professional	1956
f. 8	Martin correspondence - personal and professional	1956
f. 9	Martin correspondence - personal and professional	1957
f. 10	Martin correspondence - personal and professional	1957

### Box 2

f. 11	Paper: "Geologic structure surrounding the Santa Rita intrusive" by G. Ordonez, W. W. Baltosser, and Keith Martin	
f. 12	Martin's notebook on Mineral Park copper deposits (Part I)	
f. 13	Martin's notebook on Mineral Park copper deposits (Part II)	
f. 14	Martin's notebook on Mineral Park copper deposits (Part III)	
f. 15	Martin's notebook on Mineral Park copper deposits (Part IV)	
f. 16	Martin travel cost and recording	1974-1988
f. 16a	"This is Kennecott: Bear Creek Mining Company"	
f. 17	Bear Creek Mining Company correspondence and papers	1954-1957/1965
f. 18	Map of mining location of Bear Creek Mining Company	1955
f. 19	Mining options for Bear Creek Mining Company	1956
f. 20	Insurance programs for Bear Creek Mining Company	
f. 21	Company payroll and administration guidelines	1955-1957
f. 22	Receipts and financial statements of Martin and D.C. Brittain	1965
f. 23	Correspondence regarding Northern Mexico	1965

### Box 3

f. 24	Proposal for exploration program in Northern Mexico	1966
f. 25	Mining report on Transvaal Mining District, Sonora, Mexico	1965
f. 26	Mining report on Transvaal Mining District, Sonora, Mexico – correspondence and papers	1965-1967
f. 27	Mining report on Transvaal Mining District, Sonora, Mexico – correspondence and papers	1965-1969
f. 28	Mining report on Transvaal Mining District, Sonora, Mexico – correspondence and papers	1965-1969
f. 29	Mining report on Transvaal Mining District, Sonora, Mexico – correspondence and papers	1965-1969
f. 30	Maps and photographs of Panama	
f. 31	Mining exploration in Panama	1958-1997
f. 32	Martin report on Morning Mist Mining Project	1969
f. 33	Notes on ore discovery	
f. 34	Notes on Earth heat sources	
f. 35	Rock color charting	
f. 36	Slide script and notes	1965

**Box 4**

- f. 37 Geology subject outline
- f. 38 Notes on course in geology
- f. 39 Maps, charts and notes associated with Arizona geologic stratification 1957
- f. 40 Maps (mining and U.S.G.S.)
- f. 41 Roster of College of Mines faculty and Arizona Bureau of Mines staff 1964-1965
- f. 42 Scientific abbreviations and geologic data sheets
- f. 43 Mines and mining information
- f. 44 Journal articles on geology subjects
- f. 45 Mining leases and options (unsigned and signed) 1975
- f. 46 "Structures associated with disseminated type copper ore bodies"
- f. 47 "Remarks of R. C. Jullivan relative to legal matters at Kennecott Conference on Geologists on April 13, 1956" 1956/1957
- f. 48 "Porphyry Copper Exploration"
- f. 49 Porphyry copper type 1951/1957
- f. 50 Journal articles on surveys and ore discovery 1949/1955
- f. 51 Papers on "Mining Geophysics Today" 1955/1956
- f. 52 Geophysical pamphlets and products 1953/1966
- f. 53 Aerial photography as a mapping base 1955
- f. 54 Geology terms in German-English
- f. 55 Miscellaneous papers and notes 1965-1975

**Box 5**

- f. 56 Publication - "The mineral industries of Arizona" by T. G. Chapman 1962
- f. 57 Publication - "Copper deposits of part of Helvetia Mining District, Pima County, Arizona" by S.C. Creasey and George L. Quick 1955
- f. 58 Publication - "Ground water in Avra-Altar Valley, Arizona" by David A. Andrews 1937
- f. 59 Publication - "Mineral resources of the San Carlos Indian Reservation, Arizona" by Calvin S. Blomfield and Andrew F. Shride 1956
- f. 60 Publication - "Mineral resources: Navajo-Hopi Indian Reservations, Arizona-Utah" Vol. I 1955
- f. 61 Publication - "The Wallapai Mining District Cerbat Mountains Mohave County, Arizona" by McClelland G. Dings 1951
- f. 62 Publication - "Grouting diamond-drill holes at the Christmas Mine, Gila County, Arizona" by Stanton L. Tainter 1949
- f. 63 Publication - "Manganese resources of the Artillery Mountain Region Mohave County, Arizona" by S. G. Lasky and B. N. Webber 1949
- f. 64 Publication - "Report of investigations: Artillery Peak manganese deposits Mohave County, Arizona" by Robert S. Stanford and Lincoln A. Stewart 1948
- f. 65 Publication - "Devonian and Mississippi rocks of Central Arizona" by John W. Huddle and Ernest Dobrovlny 1952
- f. 66 Publication - "Late Paleozoic stratigraphy of Central Cochise County, Arizona" by James Gilluly, John R. Cooper and James Steele Williams 1954
- f. 67 Publication - "Concentration of oxide manganese ores from vicinity of Winkelman, Pinal County, Arizona" by K. C. Dean, H. D. Shedden and W. W. Agey 1952
- f. 68 Publication - "A comparative study of statistical analysis and analytical

- data from Massic Canyon manganese deposit, Artillery Mountains Region, Mohave County, Arizona” by Scott W. Hazen, Jr. 1958
- f. 69 Publication - “Notes on earth fissures in Southern Arizona” by G. M. Robinson and D. E. Peterson 1962
- f. 70 Publication - “Geology of the Christmas Copper Mine, Gila County Arizona” by Nels P. Peterson and Roger W. Swanson 1956
- f. 71 Publication - “General geology of Central Cochise County Arizona” by James Gilluly 1956

#### **Box 6**

- f. 72 Publication - “Geology and ore deposits of the Tombstone District, Arizona” by B. S. Butler, E. D. Wilson and C. A. Rasor 1938
- f. 73 Publication - “Arizona metal production” by Morris J. Elsing and Robert E. S. Heineman 1936
- f. 74 Publication - “Arizona zinc and lead deposits” Part I 1950
- f. 75 Publication - “Arizona zinc and lead deposits” Part II 1951
- f. 76 Publication - “Geology and mineral deposits of Southern Yuma County Arizona” by Eldred D. Wilson 1933
- f. 77 Publication - “Sedimentary basins of Arizona and adjoining areas” by Edwin D. McKee 1951
- f. 78 Publication - “Stories of Arizona copper mines” by Frank J. Tuck
- f. 79 Publication - “Investigation of the Lake Shore Copper Shore copper deposits, Pinal County, Arizona” by T. M. Romslo 1950
- f. 80 Publication - “Arizona non metallics: a summary of past production and present operations” by Eldred D. Wilson 1944/1949
- f. 81 Publication - “Tucson Mountains, an Arizona basin range type” by W. Horatio Brown 1939
- f. 82 Publication - “Geology and ore deposits of the Ajo Quadrangle, Arizona” by James Gilluly 1937
- f. 83 Publication - “Manganese ore deposits in Arizona” by Eldred D. Wilson and G. M. Butler 1930
- f. 84 Publication - “Tungsten deposits in Arizona” by Eldred D. Wilson 1941
- f. 85 Publication - “Bibliography of the geology and mineral resources of Arizona” by Eldred D. Wilson 1939
- f. 86 Publication - “A review of the mineral potential of the Ithica Park area of Mineral Park” by Keith Martin 1956

#### **Box 7**

- f. 87 Publication - “Arizona manganese-silver ores” by T. M. Romslo and S. F. Ravitz 1947
- f. 88 Publication - “Southern Arizona guidebook II Arizona Geological Society” by L. A. Heindl 1959
- f. 89 Publication - “Arizona Geological Society: guidebook for field trip excursions in Southern Arizona” 1952
- f. 90 Publication - “Discovery of Pima orebody” 1954
- f. 91 Papers dealing with mineralogy in Arizona 1950
- f. 92 Publication - “Bibliography of New Mexico geology and mineral technology through 1950” by Marian R. Burks and John H. Schilling 1955
- f. 93 Publication - “Bibliography of New Mexico geology and mineral technology, 1951-1955” by Constance F. Schiling and John

- H. Schilling 1956
- f. 94 Publication - "Guidebook of Southwestern New Mexico" Fourth Field Conference 1953
- f. 95 Publication - "Geology of the Santa Rita Mining Area, New Mexico" by A. C. Spencer and Sidney Paige 1935
- f. 96 Publication - "Hypogene texture and mineral zoning in a copper-bearing grandodiorite porphyry stock Santa Rita, New Mexico" by Richard L. Nielsen 1968
- f. 97 Publication - "Hydrothermal alteration at Santa Rita, New Mexico" by Paul F. Kerr, J. L. Kulp, C. Meade Patterson and Robert J. Wright 1950
- f. 98 Publication - "Geology of a disseminated copper district near Hillsboro, Sierra County, New Mexico" by Frederick J. Kuelmer 1955

### Box 8

- f. 99 Publication - "Central Mining District, New Mexico" by S. G. Larky and A. D. Hoagland
- f. 100 Publication - "Correlation of copper mineralization with hydrothermal alteration in the Santa Rita Porphyry Copper District, New Mexico" by Paul Leroy 1954
- f. 101 Publication - "Geologic structures surrounding the Santa Rita Intrusive, New Mexico" by Keith Martin 1955
- f. 102 Publication - "Volumetric chemical changes and their genetic relationship to shattering at Chino Santa Rita, New Mexico" by Keith Martin 2001
- f. 103 Publication - "Fluorspar deposits of Burro Mountains and vicinity, New Mexico" by Elliot Gillerman 1952
- f. 104 Publication - "Records of the wells drilled for oil and gas in New Mexico" by B. G. H. Dixon, D. H. Baltz and T. F. Stripp 1954
- f. 105 Publication - "Twelfth Annual Field Conference, The Kansas Geological Society" 1938
- f. 106 Publication - "Rock alteration as a guide to ore - East Tintic District, Utah" by T. S. Lovering 1949
- f. 107 Publication - "Geology and mineral deposits of the Boleo Copper District, Baja California, Mexico" by Ivan F. Wilson 1955
- f. 109 Publication - "Certain terms of mining geology as defined and used" by Harrison Schmitt 1954
- f. 110 Publication - "Training geologists: a United States Geological Survey viewpoint" by Harold M. Bannerman and William T. Pecora 1950
- f. 111 Publication - "Topographic instructions of the United State Geological Survey" by C. H. Birdseye 1928
- f. 112 Publication - "Some facts about ore deposits" by G. Montague Butler 1935
- f. 113 Publication - "Bibliography of U.S. Geological Survey publications on copper (to January 1, 1952)" by Gwendolyn W. Luttrell 1952

### Box 9

- f. 114 Publication - "Field tests for the common metals" by George R. Fansett 1951
- f. 115 Publication - "Calculations from diamond-drill sampling - a comparison of methods" by C. W. Greenhalgh and Junior Member of A.I.M.E."
- f. 116 Publication - "Study of radioactivity in modern stream gravels as a

	method of prospecting” by Randall T. Chew III	1956
f. 117	Publication - “The enrichment of sulphide ores” by William Harvey Emmons	1913
f. 118	Program for 20th session of the International Geological Congress	1956
f. 119	Publication - “Tables of fluorescent and radioactive minerals” by Robert L. Hershey	1955
f. 120	Publication - “Geochemical prospecting abstracts through June 1952” by John W. Harbaugh	1953
f. 121	Publication - “Principles of geochemical prospecting” by H.E. Hawkes	1957
f. 122	Publication - “Microscopic determination of the ore minerals” by M. N. Short	1940
f. 123	Publication - “How tonnage and grade relations help predict ore reserves” by S. G. Lasky	1950
f. 124	Publication - “Photogeologic procedures in geologic interpretations and mapping” by Richard G. Ray	1956
f. 125	Publication - “Rapid analysis of silicate rocks” by Leonard Shapiro and W. W. Brannock	1956
f. 126	Publication - “The uses of induced polarization in mining exploration” by Don Mills	
f. 127	Publication - “Intergrowths of bornite and chalcopyrite” by G. M. Schwartz	
f. 128	Publication - “Radioactive uranium and thorium” by John W. Anthony	1948
f. 129	Publication - “Annotated bibliography of papers on geochemical prospecting for ores” by H. E. Hawkes	1948
f. 130	Publication - “Concentration of bastnaesite and other cerium ores” by J. B. Zadra, A. L. Engel and E. S. Shedd	1952
f. 131	Publication - “Treatment and sale of black sands” by M W. van Bernewitz	1938
f. 132	Publication - “The chromograph, a new analytical tool for laboratory and field use” by Rollin E. Stevens and Hubert W. Lakin	1949
f. 133	Publication - “The solubility and transfer of silica and other non-volatiles in steam” by Thomas Gillingham	1948
f. 134	Publication - “Interpretation and current status of ground-water rights”	1960
f. 135	Publication - “Mining exploration: foundations of organization” by Thomas W. Mitcham	1955
f. 136	Publication - “Time, distance and drawdown relationships in a pumped ground-water basin”	1960
f. 137	Publication - “Relative abundance of nickel in the Earth's crust” by Roger Clark Wells	1943
f. 138	Publication - “A professional guide for junior engineers” by William E. Wickenden	1949
f. 139	Publication - “Manganese concentrates from open-hearth slags by lime-clinkering (Sylvester) process” by Robert Ruppert	1952
f. 140	Publication - “Chinoite, a new mineral” by Carl W. Beck and David B. Givens	1953