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Bibliography and Index of Colorado Geology 1981-1982

by American Geological Institute



Colorado Geological Survey Department of Natural Resources Denver, Colorado / 1983 Information Series 19

BIBLIOGRAPHY AND INDEX OF COLORADO GEOLOGY 1981-1982

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NOTE TO READERS:

This two-year interim bibliography and index was compiled under the direction of John G. Mulvihill, utilizing the GeoRef Information System, the computerized bibliographic data base of the American Geological S Institute, Falls Church, Virginia. This volume contains 595 citations and supplements the Colorado Geological Survey's previous bibliography series--Bulletin 37 (1875-1975) and Bulletin 45 (1975-1980). With this release, Colorado now has a complete bibliographic index extending from 1875 to 1982.

Due to the production schedule, CGS has not edited this volume for accuracy, and, consequently, readers may note some omissions or duplications with the previous volumes. We hope that errors found in this volume will be corrected in a future supplement.

Colorado Geological Survey

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SERIALS LIST

AAPG Bulletin. [Tulsa, Okla.: American Association of Petroleum Geologists].

- AAPG Memoir. Tulsa, OK: American Association of Petroleum Geologists.
- AAPG Studies in Geology. Tulsa, DK: American Association of Petroleum Geologists, 1979-.
- ACS Symposium Series. Washington, DC: American Chemical Society, 1974-.
- American Mineralogist. Washington, DC: Mineralogical Society of America, 1916-.
- Annual Remote Sensing of Earth Resources Conference. [Tullahoma, TN: The University of Tennessee, Space Institute].
- Arctic and Alpine Research. Boulder, CO: Institute of Arctic & Alpine Research, University of Colorado, 1969-.
- Arizona Geological Society Digest. Tucson, AZ: Arizona Geological Society, 1958-.
- ASTM Special Technical Publication = American Society for Testing and Materials Special Technical Publication. Philadelphia, PA: American Society for Testing and Materials, 1911-.
- Australian Water Resources Council Conference Series. Canberra: Australian Water Resources Council, 1980-.
- Bulletin Colorado Geological Survey, Department of Natural Resources. Denver, CO: Colorado Geological Survey, Department of Natural Resources.
- Bulletin of the Association of Engineering Geologists. Dallas, TX: Association of Engineering Geologists.
- Bulletin of the Seismological Society of America. Berkeley, Calif.: Seismological Society of America, 1911-.
- Bulletin of the Southern California Paleontological Society. Long Beach, CA: Southern California Paleontologic1 Society.

- Campus Museum Contributions. Riverside, CA: University of California, Riverside, 1971-.
- Canadian Journal of Earth Sciences = Journal Canadien des Sciences de la Terre. Ottawa, ON: National Research Council of Canada, 1964-.
- **Canadian Mining Journal.** Quebec: Southam Business Publications.
- **Chemical Geology.** Amsterdam: Elsevier Scientific Publishing Company, 1966-.
- **CIM Bulletin** (1974). Montreal, PQ: Canadian Institute of Mining and Metallurgy.
- Cinther. [Denver, CO: Colorado Grotto].
- **Civil Engineering.** Civil Engineering (American Society of Civil Engineers). New York.
- Clays and Clay Minerals. Clarkson, NY: The Clay Minerals Society, 1952-.
- Colo. Geol. Surv., Map Ser. Colorado Geological Survey, Map Series. Denver.
- Colorado School of Mines Quarterly. Golden, CO: Colorado School of Mines.
- Communications in Soil Science and Plant Analysis. New York, NY: Marcel Dekker, 1970-.
- **Compass of Sigma Gamma Epsilon**. Norman, DK: National Council of Sigma Gamma Epsilon, University of Oklahoma, 1915-.
- **Congress of the International Union for Quaternary Research.** [s. 1.: International Union for Quaternary Research].
- **Contrib. Mineral. Petrol.--Beitr. Mineral. Petrol.** Contributions to Mineralogy and Petrology--Beitraege zur Mineralogie und Petrologie. Berlin-Heidelberg-New York.
- Contributions in Biology and Geology. Milwaukee, WI: Milwaukee Public Museum, 1974-.
- **Contributions to Geology**. Laramie, Wyo.: University of Wyoming, 1962-.
- Contributions to Mineralogy and Petrology. Heidelberg - New York: Springer International, 1966-.

1

- E & MJ, Engineering and Mining Journal. New York, NY: McGraw-Hill.
- Earth and Planetary Science Letters. Amsterdam: Elsevier Scientific Publishing Company, 1966-.
- Earth Planet. Sci. Lett. Earth and Planetary Science Letters; a Letter Journal Devoted to the Development in Time of the Earth and Planetary System. Elsevier Sci. Publ. Co., Amsterdam.
- Earth Science. Colorado Springs, CO: Richard M. Pearl.
- Earth Science (Falls Church, VA). Falls Church, VA: American Geological Institute, 1981-.
- Earth Surfaces Processes and Landforms. Chichester-New York: John Wiley & Sons, 1980-.
- Economic Geology and the Bulletin of the Society of Economic Geologists. Lancaster, PA: Economic Geology Publishing Company.
- Field Conference Rocky Mountain Association of Geologists. Denver, CO: Rocky Mountain Association of Geologists.
- Geological Disposal of Nuclear Waste. Albuquerque, NM: American Society of Mechanical Engineers, New Mexico Section and the University of New Mexico, College of Engineering.
- Geological Society of America Bulletin. Boulder, Colo.: Geological Society of America, 1890-.
- Geological Survey Bulletin (Washington). Reston, VA: U. S. Geological Survey, 1949-.
- Geological Survey Circular. Reston, Va.: U. S. Geological Survey, 1950-.
- Geological Survey Circular (Washington, D. C.). Reston, VA: U. S. Geological Survey, 1950-.
- **Geological Survey Professional Paper.** Washington, DC: U.S. Government Printing Office, 1902-.
- Geological Survey Professional Paper (Washington). Washington, DC: U.S. Government Printing Office, 1902-.
- Geological Survey Professional Paper (Washington, D.C.). Washington, D.C.: U.S. Government Printing Office, 1902-.
- Geological Survey Water-Supply Paper (Washington). Reston, Va.: U.S., Department of the Interior, Geological Survey.
- Geology (Boulder). Geology (Geological Society of America). Boulder, Colorado.
- Geophysical Monograph. Washington, DC: American Geophysical Union, 1956-

- Geophysical Research Letters. Washington, DC: American Geophysical Union, 1974-.
- The Great Basin Naturalist. Provo, UT: Brigham Young University, Department of Zoology and Entomology, 1939-.
- Ground Water. Urbana, IL: National Water Well Association, Ground-Water Technology Division.
- Ground Water Monitoring Review. Worthington, OH: Water Well Journal Publishing Co., 1981-.
- Groundwater Digest. Sacramento, CA: Pacific Groundwater Digest, Inc.
- Guidebook New Mexico Geological Society. Socorro, NM: New Mexico Geological Society. 1950-.
- Hydrologic Investigations Atlas U. S. Geological Survey. Washington, DC: U. S. Geological Survey.
- Informal Report Los Alamos Scientific Laboratory. Los Alamos, NM: Los Alamos Scientific Laboratory.
- Information Series Colorado Geological Survey. Denver, CD: Colorado Geological Survey, Department of Natural Resources, State of Colorado, 1976-.
- Int. Assoc. Eng. Geol., Bull. International Association of Engineering Geology, Bulletin--Association Internationale de Geologie de l'Ingenieur, Bulletin. Paris.
- The Interstate Oil Compact Commission Committee Bulletin. Oklahoma City, DK: Interstate Oil Compact Commission.
- Isochron/West. Socorro, NM: New Mexico Institute
 of Mining and Technology, 1971-.
- **J. Geomagn. Geoelec.** Journal of Geomagnetism and Geoelectricity (Society of Terrestrial Magnetism and Electricity of Japan). Tokyo.
- **J. Hydrol.** Journal of Hydrology. Elsevier Sci. Publ. Co., Amsterdam.

Japan Metal Bulletin. [s. 1.: s. n.].

- Jewelry Making Gems & Minerals. Mentone, CA: Gemac Corporation.
- JGR. Journal of Geophysical Research. B. Washington, D. C.: American Geophysical Union, 1978-.
- Johnson Drillers Journal. [St. Paul, MN]: Universal Dil Products.
- **Journal of Energy**. New York, NY: American Institute of Aeronautics and Astronautics, 1977-.

- Journal of Environmental Quality. Madison, Wisc.: Published cooperatively by the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, 1972-.
- Journal of Geochemical Exploration. Amsterdam-New York: Elsevier Scientific Publishing Company, 1972-.
- Journal of Geological Education. Lawrence, Kans.: National Association of Geology Teachers, 1951-.
- Journal of Hydrology. Amsterdam: Elsevier Scientific Publishing Company, 1963-.
- Journal of Paleontology. Tulsa, Okla.: Society of Economic Paleontologists and Mineralogists, 1927-.
- Journal of Sedimentary Petrology. Tulsa, OK: Society of Economic Paleontologists and Mineralogists, 1931-.
- The Journal of the Colorado-Wyoming Academy of Science. Fort Collins, CO: Colorado State University, University Library, 1929-.
- Journal of the Fluorescent Mineral Society. Pacoima, CA: Fluorescent Mineral Society.
- Journal of the Geotechnical Engineering Division. New York, NY: American Society of Civil Engineers, Geotechnical Engineering Division, 1974-.
- JPT. Journal of Petroleum Technology. Dallas, TX: American Institute of Mining, Metallurgical and Petroleum Engineers.
- LA Los Alamos Scientific Laboratory. Los Alamos, NM: Los Alamos Scientific Laboratory.
- Lake Powell Research Project Bulletin. [Los Angeles, CA: University of California].
- Land Use Land Cover Maps, L-Ser. Land Use and Land Cover Maps, L-Series. U. S. Geological Survey, Reston, Virginia.
- Lapidary Journal. San Diego, Calif.: Lapidary Journal, Inc., 1947-.
- **LPI Contribution**. Houston, TX: Lunar and Planetary Institute.
- Memorias Coloquio Sobre Paleo-Botanica y Palinologia. Mexico: [Instituto Nacional de Antropologia e Historia].
- Min. Mag. Mining Magazine. London.
- Mineral & Energy Resources. Golden, CD: Colorado School of Mines.
- Mineral. Soc., Bull. Mineralogical Society, Bulletin. London.

- The Mineralogical Record. Bowie, Md.: Mineralogical Record, Ind., 1970-.
- Mines Magazine. Denver, Colo.: Colorado School of Mines Alumni Association, 1932-.
- Mining Congress Journal. Washington, DC: American Mining Congress, 1915-
- Mining Engineering. Littleton, Colo.: Society of Mining Engineers of AIME, 1949-.
- Mining Journal (London). London: Mining Journal Ltd., 1908-.
- Mining Magazine. London: [s. n.].
- Miscellaneous Investigations Series U. S. Geological Survey. Washington, DC: U. S. Geological Survey.
- Miscellaneous Paper S (Vicksburg). Vicksburg, MS: U. S. Army Engineer Waterways Experiment Station, Soils and Pavement Laboratory.
- The Mountain Geologist. Denver, Colorado: The Rocky Mountain Association of Geologists.
- Nature (London). London: Macmillan Journals, 1869-.
- Newsletter West Texas Geological Society. Midland, Tex,: West Texas Geological Society.
- Northwest Geology. Missoula, MT: University of Montana, Department of Geology, 1971-.
- **Dil and Gas Journal.** Tulsa, Okla.: PennWell Publishing Co., 1910-.
- **Dil Shale Symposium Proceedings.** Golden, CO: Colorado School of Mines Press, 1977-.
- ONWI (Battelle Memorial Institute, Office of Nuclear Waste-Isolation). [Columbus, OH: Battelle Memorial Institute, Office of Nuclear Waste-Isolation].
- **Open-File Report (United States Geological Survey. 1978).** Reston, Va.: U. S. Geological Survey.
- **Open-File Report (United States Geological Survey. 1978).** Reston, Va.: U. S. Geological Survey.
- Paleobiology. Lancaster, PA: Department of Geology, Franklin and Marshall College.
- Physical Geography. Silver Spring, MD: V. H. Winston & Sons, 1980-.
- Precambrian Research. Amsterdam: Elsevier Scientific Publishing Company, 1974-.
- Preliminary Report The Geological Survey of Wyoming. Laramie, WY: The Geological Survey of Wyoming.

1

- Proceedings Soil and Crop Science Society of Florida. Gainesville, FL: Soil and Crop Science Society of Florida, 1956-.
- Proceedings Soil Science Society of America. Madison, WI: Soil Science Society of America, 1936-.
- Proceedings Symposium on Rock Mechanics. New York, NY: American Institute of Mining, Metallurgical and Petroleum Engineers.
- Proceedings of the AIRAPT International High Pressure Conference. New York, NY: Plenum Press.
- Proceedings of the Annual William T. Pecora Memorial Symposium on Remote Sensing. [s. l.: s. n.], 1975-.
- Proceedings of the International Conference on Basement Tectonics. Denver, CO: Basement Tectonics Committee, Inc., 1976-.
- Proceedings of the International Conference on Expansive Soils. New York, NY: American Society of Civil Engineers (ASCE).
- Proceedings of the International Congress of Speleology. [Americus, GA: Georgia Southwestern College, Department of Geology, for the International Union of Speleology Meeting sponsored by The National Speleological Society].
- **Proceedings of the Western Snow Conference**. Fort Collins, CO: Colorado State University.
- Przeglad Geologiczny. Warsaw: Wydawnictwa
 Geologiczne.
- Quality of Water, Colorado River Basin. [Washington, DC]: Department of Interior.
- Report California Water Resources Center. Davis, CA: Office of the Director, California Water Resources Center, University of California, 1975-.
- Resource Map. New Mexico Bureau of Mines & Mineral Resources. Socorro, NM: New Mexico Bureau of Mines and Mineral Resources, 1972-.
- Resource Series Colorado Geological Survey, Department of Natural Resources, State of Colorado. Denver, CO: Colorado Geological Survey, Department of Natural Resources, State of Colorado, 1977-.
- Rock & Gem. Encino, CA: Behn-Miller Publishers, Inc., 1974-.
- **Rocks and Minerals.** Washington, DC: Heldref Publications.
- Science. Washington, D. C.: American Association for the Advancement of Science, 1883-.

- Soil Science. Baltimore, MD: The Williams & Wilkins Company, 1916-.
- Soil Science Society of America Journal. Madison, WI: Soil Science Society of America, 1976-.
- Special Paper Geological Society of America. Boulder, CO: Geological Society of America, 1934-.
- Special Publication Colorado Geological Survey. Denver, CO: Colorado Geological Survey, Department of Natural Resources, State of Colorado, 1969-.
- Special Publication New Mexico Geological Society. Socorro, NM: New Mexico Geological Society.
- Special Publication Society of Economic Paleontologists and Mineralogists. Tulsa, OK: Society of Economic Paleontologists and Mineralogists.
- Special Volume Canadian Institute of Mining and Metallurgy. [Montreal, PQ]: Canadian Institute of Mining and Metallurgy.
- Technical Papers Annual International Meeting and Exposition, Society of Exploration Geophysicists. [Houston, TX: Society of Exploration Geophysicists].
- Transactions Geothermal Resources Council. Davis, CA: Geothermal Resources Council, 1977-.
- Transactions Gulf Coast Association of Geological Societies. New Drleans, LA: Gulf Coast Association of Geological Societies, 1951-.
- Transactions of the Kansas Academy of Science. Lawrence, KS: Kansas Academy of Science, 1903-.
- Transactions of the SPWLA Annual Logging Symposium. Houston, TX: Society of Professional Well Log Analysts.
- Transportation Research Record. Washington, DC: Transportation Research Board, Commission on Sociotechnical Systems, National Research Council, National Academy of Sciences, 1974-.
- U. S. Geol. Surv., Coal Invest. Map. U. S. Geological Survey, Coal Investigations Map. Reston, Virginia.
- U. S. Geol. Surv., Geophys. Invest. Map. U. S. Geological Survey, Geophysical Investigations Map. Reston, Virginia.
- U. S. Geol. Surv., Hydrol. Invest. Atlas. U. S. Geological Survey, Hydrologic Investigations Atlas. Reston, Virginia.

- U. S. Geol. Surv., Misc. Field Stud. Map. U. S. Geological Survey, Miscellaneous Field Studies Map. Reston, Virginia.
- U. S. Geol. Surv., Misc. Invest. Ser. U. S. Geological Survey, Miscellaneous Investigations Series. Reston, Virginia.
- U. S. Geol. Surv., Oil Gas Invest. Charts. U. S. Geological Survey, Oil and Gas Investigations Charts. Reston, Virginia.
- Water-Resources Investigations. [Reston, VA]: U. S. Geological Survey, 1972-.
- Water Science and Technology. Dxford-New York: Pergamon Press.
- Water Well Journal. Columbus, OH: Water Well Journal Publishing Co., 1947-.
- Western Mining Directory. Denver, CO: Howell Publishing Company, 1978-.
- Western Oil Reporter. Denver, Colo.: Hart Publications, 1966-.
- World Mining. San Francisco, CA: Miller Freeman Publication, 1974-.

BIBLIOGRAPHY AND INDEX OF COLORADO GEOLOGY

BIBLIOGRAPHY

Abashian, Mark S. see Brookins, Douglas G.

Adams, Samuel S. see Thamm, John K.

Adams, V. D. see Baker, L. A.

- Afifi, Abdulkader M. Stratigraphy, petrology, and structure of Precambrian metavolcanic rocks in the Iris District, Gunnison and Saguache counties, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 287-292, illus. (incl. block diag., geol. sketch map), 16 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Agnew, Allen F. G. K. Gilbert and ground water, or "I have drawn this map with much reluctance": *in* The scientific ideas of G. K. Gilbert; an assessment on the occasion of the centennial of the United States Geological Survey (1879-1979) (Yochelson, Ellis L., editor), Special Paper - Geological Society of America, No. 183, p. 81-91, sects., strat. col., sketch maps, 29 ref., 1980.
- Alexander, Donald Henry. Geology, mineralogy, and geochemistry of the McClure Mountain alkalic complex, Fremont County, Colorado: 352 p., Doctoral, 1981, Univ. of Michigan, Ann Arbor, MI. available from: Univ. Microfilms.

Allen, J. W. see Bell, M. W.

Alley, W. M. The relative importance of ground-water and surface-water supplies to oil-shale development, Piceance Basin, Colorado: Open-File Report (United States Geological Survey. 1978), No. 82-0340, 50 p., illus. (incl. 2 tables, sketch maps), 28 ref., 1982. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Amini, M. Hassan see Larson, E. E.

Anderson, David L.; Lesh, John G.; and Wickman, Donald W. Soil survey of Kiowa County, Colorado: U. S. Dep. Agric., Soil Conserv. Ser., Washington, DC, United States, 125 p., illus. (incl. 15 tables; soils maps 1:24,000; colored soils map 1:316,800), 8 ref., August 1981. (Publ. in coop. with Colo. Agric. Exp. Stn.). Anderson, Gerald A. see Kolmer, Joseph R.

Anderson, Jule R.; Goodknight, Craig S.; Sewell, J. Michael; et al. Uranium potential of Precambrian quartz-pebble conglomerates in the United States; a summary: 84 p., illus. (incl. 7 tables, geol. sketch maps), 127 ref., February 1982. (Rep. No. GJBX-35(82)) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program.

Anderson, L. W. see Colton, R. B.

Anderson, R. V. see Gould, W. D.

- Andrews, Sarah. Sedimentology of Great Sand Dunes, Colorado: in Recent and ancient nonmarine depositional environments; models for exploration (Ethridge, Frank G., editor; et al.), Special Publication - Society of Economic Paleontologists and Mineralogists, No. 31, p. 279-291, illus. (incl. 2 tables, sketch maps), 24 ref., August 1981.
- Anonymous. Index of surface-water records to September 30, 1970; Part 9, Colorado River basin: Geological Survey Circular, No. 659, 55 p., 1 table, sketch map, 1971.
- Anonymous. Index of surface-water records to September 30, 1970; Part 8, Western Gulf of Mexico basins: Geological Survey Circular, No. 658, 53 p., 1 table, sketch map, 1971.
- Anonymous. Index of surface-water records to September 30, 1970; Part 6, Missouri River basin: Geological Survey Circular, No. 656, 91 p., 1 table, sketch map, 1971.
- Anonymous. Underground uranium ore leaching: Mining Magazine, Vol. 124, No. 2, p. 117, February 1971.
- Anonymous. Western mining directory for the industry: Western Mining Directory, Vol. 1, No. 1, 170 p., 1978.
- Anonymous. Rio Blanco oil shale project moves forward: Min. Mag., Vol. 140, No. 3, p. 201-203, illus. (incl. sketch map), March 1979.

- Anonymous. Western mining directory for the industry: Western Mining Directory, Vol. 2, No. 2, 204 p., 1979.
- Anonymous. Quality of water; Colorado River basin: Quality of Water, Colorado River Basin, No. 10, 190 p., illus. (incl. tables, geol. sketch maps), 30 ref., January 1981.
- Anonymous. Uinta-southwestern Utah regional coal: 424 p., illus. (incl. tables, geol. sketch maps), 1981. available from: U. S. Dep. Int., Bur. Land Manage., Salt Lake City, UT, United States. Final environmental impact statement.
- Anonymous. Noranda seeks moly in Colorado's Alma mining district: Canadian Mining Journal, Vol. 102, No. 10, p. 18, October 1981.
- Anonymous. Rocky Mountain Arsenal; landmark case of groundwater polluted by organic chemicals, and being cleaned up: Civil Engineering, Vol. 51, No. 9, p. 68-71, illus., September 1981. From the report "North Boundary Containment/Treatment System, Rocky Mountain Assenal", January 1981, U. S. Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, MD.
- Anonymous. A summary of mineral industry activities in Colorado, 1980; Part II, Metal-nonmetal: Colo. Div. Mines, Denver, CO, United States, 108 p., illus. (incl. tables, sketch map), 1981.
- Anonymous. Colorado [abstr.]: in Geological Survey research 1981, Geological Survey Professional Paper, No. 1275, p. 102-103, 1981 [1982].
- Anonymous. Survey helps locate oil, gas in SE Colorado: Western Oil Reporter, Vol. 38, No. 11, p. 64, November 1981.
- Anonymous. Western mining directory for the industry: Western Mining Directory, Vol. 3, No. 3, 241 p., 1981.
- Anonymous. Four moly projects continue development: World Mining, Vol. 34, No. 3, p. 35, illus., 1981.
- Anonymous. Oxy readies giant Cathedral Bluffs oil shale project for 1985 start up: E & MJ, Engineering and Mining Journal, Vol. 182, No. 9, p. 35, 43, 1981.
- Anonymous. Wisconsin mining taxes; can changes be made that will encourage mine development?: E & MJ, Engineering and Mining Journal, Vol. 182, No. 5, p. 87-91, 1981.
- Anonymous. Japanese join development of Colorado coal mine: Japan Metal Bulletin, No. 4148, p. 2, 1981.
- Anonymous. Chevron plans start of pilot oil shale facilities: E & MJ, Engineering and

Mining Journal, Vol. 182, No. 7, p. 11, 1981.

- Anonymous. Molybdenum; no slow-down at Thompson Creek: Mining Journal (London), Vol. 297, No. 7625, p. 275, 1981.
- Anonymous. United States; commercial production of oil shale to start in 1983: World Mining, Vol. 34, No. 11, p. 71, 1981.
- Anonymous. Monitoring program measures slope movement at Climax Mine: Mining Engineering, Vol. 34, No. 2, p. 134, February 1982.
- Anonymous. Los Alamos "sandwich" finds base metals in Colorado: E & MJ, Engineering and Mining Journal, Vol. 183, No. 8, p. 31, August 1982.
- Apel, Charles T. see Goff, Sue
- Arbelbide, Sr. J. see O'Sullivan, R. B.
- Armbrustmacher, T. J. (investigator). Thorium resource appraisal, Wet Mountains, Colorado [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 43, 1981 [1982].
- Armbrustmacher, T. J. (investigator). Three distinct magma groups in the Wet Mountains area, Colorado [abstr.]: Geological Survey Professional Paper, No. 1275, p. 164, 1981 [1982].
- Armbrustmacher, Theodore J. The complex of alkaline rocks at Iron Hill, Powderhorn District, Gunnison County, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 293-296, illus. (incl. geol. sketch map), 24 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Armstrong, B. R. A quantitative analysis of avalanche hazard on U. S. Highway 550, southwestern Colorado: in Proceedings of the Western snow conference (Shafer, Bernard A., editor), Proceedings of the Western Snow Conference, No. 49, p. 95-104, illus. (incl. 5 tables, sketch map), 11 ref., 1981.
- Armstrong, B. R.; and Carrara, P. E. Map of snow avalanche areas and known accident sites in the Telluride region, San Miguel County, Colorado: Miscellaneous Investigations Series ... U. S. Geological Survey, No. I-1316, 1 sheet, environ. geol. map 1:24,000, 1981 [1982].

Atkinson, Charles H. see Boardman, Charles R.

Atkinson, R. H. see Sture, S.

- Atwood, R. A. see Heistand, R. N.
- Avis, Loren E.; and Boothby, Donald R. Promising Morrow sandstone discoveries in southeastern Colorado: Dil and Gas Journal.

Vol. 80, No. 22, p. 163-170, illus. (incl. sketch maps), 32 ref., May 31, 1982. Abridged from an AAPG paper.

- Baars, D. L. Pre-Laramide tectonic history of Colorado Plateau [abstr.]: in Rocky Mountain Foreland basement tectonics (Boyd, Donald W., editor; et al.), Contributions to Geology, Vol. 19, No. 2, p. 175, January 1981.
- Baars, D. L.; and Stevenson, G. M. Tectonic evolution of western Colorado and eastern Utah: *in* Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; *et al.*), Guidebook - New Mexico Geological Society, No. 32, p. 105-112, sects., sketch maps, 21 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Baars, D. L.; and Stevenson, G. M. Subtle stratigraphic traps in Paleozoic rocks of Paradox Basin: in The deliberate search for the subtle trap (Halbouty, Michel T., editor), AAPG Memoir, Vol. 32, p. 131-158, illus. (incl. 1 table, sketch maps), 30 ref., 1982.

Baars, D. L. see also Lee, K.

-- see also Stevenson, G. M.

- Baars, Don L.; Norman, Robert; Lauth, Robert; et al. Third day; road log from Moab, Utah to Durango, Colorado via Dead Horse Point, Utah: in Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 275-285, illus., 1981.
- Baars, Don L.; and Stevenson, G. M. Tectonic evolution of the Paradox Basin, Utah and Colorado: in Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference -Rocky Mountain Association of Geologists, Vol. 1981, p. 23-31, illus. (incl. sects., sketch maps), 18 ref., 1981.

Baars, Don L. see also Ullrich, Dick

Baker, Donald J. see Dowsett, Frederick R., Jr.

Baker, L. A.; Adams, V. D.; and Miller, J. B. Predicted limnology of a proposed reservoir in Southwest Colorado: in Proceedings of the Symposium on surface water impoundments (Stefan, H. G., editor), Am. Soc. Civ. Eng., New York, NY, United States, p. 565-575, illus. (incl. 4 tables, sketch map), 30 ref., 1981.

Baldridge, Duaina see Cain, Doug

Balog, Susan H. see Bolivar, Stephen L.

-- see Wecksung, George W.

Barrie, Kathy A. see Kirk, Cheryl L.

Bartleson, B. see Goodknight, Craig S.

Bartleson, B. L. see Gaskill, D. L.

- Basan, Paul B.; Chamberlain, C. Kent; and Scott, Robert W. Road log: in Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado (Basan, Paul B., editor), Soc. Econ. Paleontol. and Miner., Rocky Mtn. Sect., Denver, CO, United States, p. 6-9, 1980.
- Basan, Paul B.; and Scott, Robert W. Codell Member of the Carlile Shale at Liberty Point and in the vicinity of Pueblo, Colorado (Stop 1): in Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado (Basan, Paul B., editor), Soc. Econ. Paleontol. and Miner., Rocky Mtn. Sect., Denver, CO, United States, p. 10-15, illus. (incl. strat. col., sketch map), 2 ref., 1980.
- Basan, Paul B. (editor). Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado: Soc. Econ. Paleontol. and Miner., Rocky Mtn. Sect., Denver, CO, United States, 65 p., illus., 1980. Guidebook for SEPM field trip No. 1; Denver, June 5-7, 1980; individual papers are cited separately.

Basan, Paul B. see also Scott, Robert W.

Basu, A. R.; and Tatsumoto, M. Nd-isotopes in selected mantle-derived rocks and minerals and their implications for mantle evolution: Contributions to Mineralogy and Petrology, Vol. 75, No. 1, p. 43-54, illus. (incl. 5 tables), 44 ref., 1980.

Bauer, D. P. see Little, J. R.

Bauer, Ronald F. Soil survey of Piedra area, Colorado; parts of Archuleta, Hinsdale, La Plata, Mineral, and Rio Grande counties: U. S. Dep. Agric., Soil Conserv. Serv., Washington, DC, United States, 97 p., illus. (incl. 13 tables; soils maps 1:118,210; colored soils map 1:316,800), 6 ref., April 1981. (Publ. in coop. with Colo. Agric. Exp. Stn.).

Bazaraa, A. see Morel-Seytoux, H. J.

- Bechtel National. Regional environmental characterization report for the Paradox Bedded Salt region and surrounding territory: ONWI (Battelle Memorial Institute, Office of Nuclear Waste-Isolation), No. 68, 395 p., illus. (incl. tables, geol. sketch maps), November 1980. available from: Battelle Mem. Inst., Off. Nuclear Waste Isol., Columbus, OH, United States.
- Beeson, Kenneth C. Soil as an environmental factor in aging: *in* Aging and the geochemical environment (U. S., National Research Council, Panel on Aging and the Geochemical Environment), Natl. Acad. Press, Washington, DC, United States, p. 104-113, 3 tables, 10 ref., 1981.

Bell, J. S. see Gough, D. I.

- Bell, M. W.; Allen, J. W.; Pacer, J. C.; et al. Drilling-mud emanometry; a new technique for uranium exploration: 50 p., illus. (incl. 1 table, strat. cols., sketch maps), 9 ref., September 1981. (Rep. No. GJBX-273(81)) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program.
- Bendix Field Engineering Corporation, Grand Junction Operations. Survey of lands held for uranium exploration, development, and production in fourteen western states in the six-month period ending December 31, 1980: 20p., 17 ref., April 1981. (Rep. No. GJBX-79(81)) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States.
- Benedict, James B. Prehistoric man and climate; the view from timberline [abstr.]: in Ninth congress of the International Union for Quaternary Research; abstracts (Anonymous), Congress of the International Union for Quaternary Research, No. 9, p. 18-19, illus., 1973.

Berg, W. A. see Kilkelly, M. K.

Berghorn, Claude E. see Reid, Fred S.

Berkheiser, V. E. see Yekini, B.

Bethke, P. M. see Woods, T. L.

- Biggar, Norma E.; Harden, Deborah R.; and Gillam, Mary L. Quaternary deposits of the Paradox Basin: *in* Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 129-145, illus. (incl. sect., strat. cols., geol. sketch map), 56 ref., 1981.
- Billings, Patty. Fission track annealing related to vein mineralization and hydrothermal alteration, Ouray County, Colorado: Master's, 1980, Colorado School of Mines, Boulder, CO.

Billings, Patty see also Mutschler, Felix E.

Bilzi, P. A. see Dewey, R. S.

Bird, J. M. see Kohlstedt, D. L.

Bittinger, M. W. see Murel-Seytoux, H. J.

Blair, Robert W. see Kirkham, Robert M.

Blanchard, Douglas P. see Dungan, Michael A.

Boardman, Charles R.; Hammack, Gregory W.; Fertl, Walter H.; et al. Evaluation of low-permeability gas-bearing formations in Rio Blanco County, Colorado: JPT. Journal of Petroleum Technology, Vol. 25, No. 10, p. 1125-1129, 111us. (incl. 3 tables, sketch map), 11 ref., October 1973.

- Boler, F. M. Principal facts for gravity stations in the Pueblo 1 degrees by 2 degrees quadrangle, South-central Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0357, 70 p., 3 tables, 13 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Boler, F. M.; Klein, D. P.; and Kleinkopf, M. Dean (investigators). Regional geophysical studies in the Pueblo 1 degrees X2 degrees quadrangle, Colorado [abstr.]: *in* Geological Survey research 1981, Geological Survey Professional Paper (Washington, D.C.), No. 1275, p. 7-8, 1981 [1982].
- Bolivar, Stephen L.; Balog, Susan H.; Campbell, Katherine; et al. Multisource data set integration and characterization of uranium mineralization for the Montrose Quadrangle, Colorado: LA - Los Alamos Scientific Laboratory, No. 8807, 172 p., illus. (incl. 14 tables, geol. sketch maps), 109 ref., April 1981. (Rep. No. GJBX-148-81) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; submitted to Bendix Field Eng. Corp.

Bolivar, Stephen L. see also Wecksung, George W.

Bondurant, E. J.; and Chang, N. Y. Statistical analysis and modeling of the physical, mechanical, and strength properties of oil shale: *in* The state of the art in rock mechanics (Summers, David A., chairperson), Proceedings - Symposium on Rock Mechanics, No. 21, p. 604-613, 5 tables, sketch map, 11 ref., September 1980.

Bonnichsen, Robson see Stanford, Dennis

Bookstrom, A. A. see White, W. H.

Bookstrom, Arthur A. Tectonic setting and generation of Rocky Mountain pcrphyry molybdenum deposits: in Relations of tectonics to ore deposits in the southern Cordillera (Dickinson, William R., editor; et al.), Arizona Geological Society Digest, Vol. 14, p. 215-226, illus. (incl. 1 anal., 1 table, sketch maps), 38 ref., 1981.

Boothby, Donald R. see Avis, Loren E.

Boreck, D. L. see Tremain, C. M.

Borgman, Eric S. see Chong, Ken P.

Borman, R. G. Effects of a cattle feedlot on ground-water quality in the South Platte River valley near Greeley, Colorado: water-Resources Investigations, No. PB-81 224 321 (WRI 80-83), 83 p., 1981. available from: NTIS, Springfield, VA, United States.

- Borman, R. G.; and Meredith, T. S. Water-level records for the northern High Plains of Colorado, 1977-81: Open-File Report (United States Geological Survey. 1978), No. 81-0637, 33 p., 1 table, sketch maps, 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Bovis, M. J.; and Thorn, C. E. Soil loss variation within a Colorado alpine area: Earth Surfaces Processes and Landforms, Vol. 6, No. 2, p. 151-163, illus. (incl. 8 tables, sketch map), 15 ref., 1981.
- Boyd, Vicky. The groundwater watchers: Groundwater Digest, Vol. 4, No. 9, p. 34-37, illus., September 1981.
- Boyles, J. Michael; Kauffman, Erle G.; Kiteley, Louise W.; et al. Depositional systems, Upper Cretaceous Mancos Shale and Mesaverde Group, northwestern Colorado: Soc. Econ. Paleontol. Miner., Rocky Mt. Sect., United States, variously paginated, illus. (incl. tables, geol. sketch maps), 1981. Field trip guidebook for Fall 1981 meeting of the Soc. Econ. Paleontol. Miner., Rocky Mt. Sect.; individual papers are cited separately.
- Boyles, J. Michael; and Scott, Alan J. Part I: in Depositional systems, Upper Cretaceous Mancos Shale and Mesaverde Group, northwestern Colorado (Boyles, J. Michael; *et al.*), Soc. Econ. Paleontol. Miner., Rocky Mt. Sect., United States, p. 1.1-1.82, illus. (incl. geol. sketch maps), 1981.

Brace, W. F. see Swolfs, H. S.

Bras, Rafael L. see Chua, Siong-Huat

Brchan, C. see Bretz, T. E.

Brechtel, C. E. see Swolfs, H. S.

Bredehoeft, John D. see Hsieh, Paul A.

- Bressler, Stephen L. Preliminary paleomagnetic poles and correlation of the Proterozoic Uinta Mountain Group, Utah and Colorado: Earth Planet. Sci. Lett., Vol. 55, No. 1, p. 53-64, illus. (incl. strat. cols., sketch maps), 25 ref., September 1981.
- Bretz, T. E.; Murray, K.; and Brchan, C. State lands status map: Colo. Geol. Surv., Map Ser., No. 13, 1 sheet, colored landuse map 1:500,000, 1979.
- Brookins, Douglas G.; and Abashian, Mark S. New K-Ar ages from the Eldora-Bryan Stock and Idaho Springs Formation, Front Range, Colorado: Isochron/West, No. 32, p. 17-18, December 1981.
- Brookins, Douglas G.; Cohen, Lewis H.; and Wollenberg, Harold A. Geochemistry of a contact metamorphosed zone; implications for radwaste disposal in crystalline rocks: in

Proceedings of the Symposium on uncertainties associated with the regulation of the geologic disposal of high-level radioactive waste (Kocher, David C., editor), p. 349-354, illus., 6 ref., March 1982. (Rep. No. NUREG/CP-0022) (Rep. No. CONF-810372) available from: U. S. Nucl. Regul. Comm., Dir. Tech. Inf. and Doc. Control, Washington, DC, United States.

Brown, Charles A. see Crafton, James W.

Brown, J. L. see Lee, S. Y.

- Brown, Phillip; Smith, Robert; and Wendt, Gary. Interrelationship of groundwater with overburden and reclaimed spoil at an active surface mine in southwestern Colorado: *in* Proceedings, 1980 Symposium on surface mining hydrology, sedimentology, and reclamation (Graves, Donald H., editor; *et al.*), p. 225-234, illus. (incl. 7 tables, sect., sketch maps), 11 ref., December 1980. (Rep. No. UKY BU123).
- Bryant, Bruce; Marvin, R. F.; Naeser, C. W.; et al. Ages of igneous rocks in the South Park-Breckenridge region, Colorado, and their relation to the tectonic history of the Front-Range uplift: in Shorter contributions to isotope research in the western United States, 1980 (Anonymous), Geological Survey Professional Paper (Washington, D.C.), No. 1199 A-E, 1981. Contribution C.
- Bryant, Bruce; McGrew, L. W.; and Wobus, R. A. Geologic map of the Denver 1 degrees by 2 degrees quadrangle, North-central Colorado; Sheet 1, Geology; Sheet 2, Structure: U. S. Geol. Surv., Misc. Invest. Ser., No. I-1163, 2 sheets, geol. map 1:250,000, 1981.
- Buchberger, Steven G. Flood frequency analysis for regulated rivers: Transportation Research Record, No. 832, p. 12-21, illus. (incl. 7 tables), 15 ref., 1981.

Buckner, D. H. see Hite, R. J.

Bunker, Merle E. see Goff, Sue

- Burbank, W. S. see Luedke, R. G.
- Burnett, Clyde R.; and Burnett, Elizabeth B. Vertical column abundance of atmospheric OH at solar maximum from Friz Peak: Geophysical Research Letters, Vol. 9, No. 6, p. 708-711, illus., 9 ref., June 1982.

Burnett, Elizabeth B. see Burnett, Clyde R.

Burnett, Janice L. Legal ramifications of excluding out-of-state disposal: *in* Hazardous wastes in Colorado; a preliminary evaluation of generation and geologic criteria for disposal (Hynes, Jeffrey, L.; *et al.*), Information Series - Colorado Geological Survey, No. 14, p. 93-100, 1980.

- Burns, A. W. Simulated interactions between the proposed narrows reservoirs and the water-table aquifer along the South Platte River, Morgan County, Colorado: Water-Resources Investigations, No. PB-82 131 483 (WRI 80-119), 67 p., 1981. available from: NTIS, Springfield, VA, United States.
- Burns, G. R. Report on obsidian artifacts from the Rio Grande National Forest, Colorado [abstr.]: in Abstracts for the Fifty-third annual meeting of the Colorado-Wyoming Academy of Science (Morris, E. A., chairperson), The Journal of the Colorado-Wyoming Academy of Science, Vol. 14, No. 1, p. 6, April 1982.
- Burns, Scott Frimoth. Alpine soil distribution and development, Indian Peaks, Colorado Front Range: 425 p., Doctoral, 1980, Univ. of Colorado, Boulder, CO. available from: Univ. Microfilms.
- Burroughs, Richard L. A summary of the geology of the San Luis Basin, Colorado-New Mexico, with emphasis on the geothermal potential for the Monte Vista Graben: Special Publication -Colorado Geological Survey, No. 17, 30 p., illus. (incl. 1 table, sects., sketch maps), 46 ref., 1981.
- Burt, Donald M. Topaz rhyolites; distribution, origin and significance to exploration for porphyry molybdenite deposits [abstr.]: CIM Bulletin (1974), Vol. 74, No. 833, p. 30, September 1981. From the CIM University visiting lecturers program.
- Burt, Donald M.; and Sheridan, Michael F. Model for the formation of uranium/lithophile element deposits in fluorine-rich volcanic rocks: *in* Uranium in volcanic and volcaniclastic rocks (Goodell, Philip C., editor; *et al.*), AAPG Studies in Geology, No. 13, p. 99-109, illus. (incl. sketch maps), 17 ref., 1981.

Byrd, William J. see Kirk, Cheryl L.

Cain, Doug; Baldridge, Duaina; and Edelmann, Patrick. Waste-assimilation capacity of the Arkansas River in Pueblo County, Colorado, as it relates to water-quality guidelines and stream classification: Water-Resources Investigations, No. PB-81 227 340 (WRI 80-82), 112 p., 1980 [1981]. available from: NTIS, Springfield, VA, United States.

Cain, Doug see also Mustard, M. H.

Callender, Jonathan F. see Epis, Rudy C.

Callison, George see Rasmussen, T. E.

Camp Dresser and McKee. Permit requirements for energy and other natural resources for the State of Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-1253, 160 p., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

- Campbell, D. L. Aeromagnetic and complete Bouguer gravity anomaly maps of the Hunter-Fryingpan Wilderness Area, Pitkin County, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-1236-C, 2 sheets, aeromagn. map 1:24,000, gravity surv. map 1:24,000, 1981 [1982].
- Campbell, Donald L. (compiler). Installation restoration at Rocky Mountain Arsenal; Part II, Expanded north boundary containment operations: variously paginated, illus. (incl. tables), August 1980. available from: U. S. Army Toxic and Hazardous Mater. Agency, Aberdeen Proving Ground, MD, United States. Final environmental impact statement.

Campbell, J. A. see Molenaar, C. M.

-- see Young, R. G.

Campbell, J.- R.; Colgate, S. A.; and Wheat, B. M. Subterranean stress engineering experiments: in Underground rock engineering; 13th Canadian rock mechanics symposium (the H. R. Rice memorial symposium) (De Lory, F. A., chairperson), Special Volume - Canadian Institute of Mining and Metallurgy, Vol. 22, p. 31-35, illus. (incl. block diags., sketch map), 3 ref., 1980.

Campbell, John see Ullrich, Dick

- Campbell, John A. Summary of Paleozoic stratigraphy and history of western Colorado and eastern Utah: *in* Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; *et al.*), Guidebook - New Mexico Geological Society, No. 32, p. 81-88, sect., geol. sketch maps, 51 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Campbell, John A. Uranium mineralization and depositional facies in the Permian rocks of the northern Paradox Basin, Utah and Colorado: in Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 187-194, illus. (incl. 1 table, sect., strat. col., geol. sketch maps), 19 ref., 1981.

Campbell, Katherine see Bolivar, Stephen L.

Carlson, Jon A.; and McCallum, Malcolm E. Evaluation of geophysical techniques for diatreme delineation in the Colorado-Wyoming kimberlite province [abstr.]: in Abstracts for the Fifty-third annual meeting of the Colorado-Wyoming Academy of Science (Morris, E. A., chairperson), The Journal of the Colorado-Wyoming Academy of Science, Vol. 14, No. 1, p. 27, April 1982.

Carrara, P. E. see Armstrong, B. R.

-- see Rowley, P. D.

Carten, R. B. see Shannon, J. R.

- Carter, Thomas E.; and Wayland, Thomas E. A geologic report on the Sand Wash Drilling Project, Moffat and Routt counties, Colorado: 109 p., illus. (incl. 7 tables, sects.; geol. map 1:250,000), September 1981. (Rep. No. GJBX-176(81)) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.
- Carter, W. J. Hugoniots of Colorado oil shale: in High-pressure science and technology; Vol. 2, Applications and mechanical properties (Timmerhaus, Klaus D., editor; et al.), Proceedings of the AIRAPT International High Pressure Conference, No. 6, p. 317-323, illus. (incl. 1 table), 7 ref., 1979. Sixth AIRAPT international high pressure conference.
- Cashion, W. B. (compiler). Geologic and structure map of the Grand Junction Quadrangle, Colorado and Utah: Miscellaneous Investigations Series - U. S. Geological Survey, No. I-0736, 1 sheet, geol. map 1:250,000, 1973. Reprint.
- **Caskey, Deborah Jane**. Geology and hydrothermal alteration of the Iron Beds area, Hinsdale County, Colorado: Master's, 1979, Univ. of Texas, Austin, TX.
- Chamberlain, C. Kent. The trace fossils of the Cretaceous Dakota hogback along Alameda Avenue, west of Denver, Colorado (Stop 4): in Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado (Basan, Paul B., editor), Soc. Econ. Paleontol. and Miner., Rocky Mtn. Sect., Denver, CO, United States, p. 30-41, strat. cols., 19 ref., 1980. Reprinted from Epis, R. C. and Weimer, R. J., eds, Studies in Colorado field geology; Colo. Sch. of Mines Prof. Contrib. No. 8, 1976.
- Chamberlain, C. Kent; and Spencer, C. W. Cores for interpreting trace fossils and environments of deposition: *in* Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado (Basan, Paul B., editor), Soc. Econ. Paleontol. and Miner., Rocky Mtn. Sect., Denver, CO, United States, p. 47-65, illus. (incl. strat. cols., sketch maps), 7 ref., 1980.
- Chamberlain, C. Kent see also Basan, Paul B.
- Chang, N. Y. see Bondurant, E. J.
- Chang, Nien-Yin see Chu, Ma-Suh
- Chenoweth, W. L. see Molenaar, C. M.
- Chenoweth, William L. The uranium-vanadium deposits of the Uravan mineral belt and adjacent areas, Colorado and Utah: *in* Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; *et al.*), Guidebook - New Mexico Geological Society, No. 32, p. 165-170, illus, (incl. 1 table, sketch maps), 18 ref.,

1981. New Mexico Geological Society; Thirty-second field conference.

- Choate, Raoul; and Rightmire, Craig T. Influence of the San Juan Mountain geothermal anomaly and other Tertiary igneous events on the coalbed methane potential in the Piceance, San Juan, and Raton basins, Colorado and New Mexico: *in* Proceedings, Unconventional gas recovery symposium (Komar, C. A., chairperson), Soc. Pet. Eng., United States, p. 151-164, sect., geol. sketch maps, 9 ref., 1982.
- Chong, Ken P.; Smith, John Ward; and Borgman, Eric S. Tensile strengths of Colorado and Utah oil shales: Journal of Energy, Vol. 6, No. 2, p. 81-85, illus., 28 ref., April 1982.
- Christopherson, K. R.; Nervick, K. H.; and Heran, W. D. Telluric profiling studies in the Penrose area, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0461, 10 p., illus. (incl. sketch maps), 4 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Chu, Ma-Suh; and Chang, Nien-Yin. Uniaxial creep of oil shale under elevated temperatures: *in* The state of the art in rock mechanics (Summers, David A., chairperson), Proceedings - Symposium on Rock Mechanics, No. 21, p. 207-216, illus. (incl. 2 tables), 10 ref., September 1980.
- Chua, Siong-Huat; and Bras, Rafael L. Optimal estimators of mean areal precipitation in regions of orographic influence: Journal of Hydrology, Vol. 57, No. 1-2, p. 23-48, illus. (incl. 8 tables, sketch map), 30 ref., May 1982.
- **Clinton, M. J. The Colorado:** *in* New developments in river basin management; proceedings of specialised conference (Jenkins, S. H.), Water Science and Technology, Vol. 13, No. 3, p. 245-265, 111us. (incl. 3 tables, sketch map), 1981.
- Cobban, W. A. see Merewether, E. A.
- Coe, Barbara A. see Meyer, Richard T.
- Cohen, Lewis H. see Brookins, Douglas G.
- Cole, R. D. see Goodknight, Craig S.
- Cole, Rex D.; and Picard, M. Dane. Sulfur-isotope variations in marginal-lacustrine rocks of the Green River Formation, Colorado and Utah: *in* Recent and ancient nonmarine depositional environments; models for exploration (Ethridge, Frank G., editor; *et al.*), Special Publication - Society of Economic Paleontologists and Mineralogists, No. 31, p. 261-275, illus. (incl. 115 anal., 4 tables, sects., sketch map), 27 ref., August 1981.

Cole, Rex D.; and Sexton, John L. Pleistocene surficial deposits of the Grand Mesa area, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 121-126, illus. (incl. sketch maps), 19 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Cole, Rex D. see also Ochs, Allan M.

Coleman, D. C. see Gould, W. D.

Colgate, S. A. see Campbell, J. R.

Collins, D. B. see Repplier, F. N.

- Collins, Donley S. Diamond collecting in northern Colorado: The Mineralogical Record, Vol. 13, No. 4, p. 205-208, illus. (incl. sketch maps), 15 ref., August 1982.
- Collins, Donna Bishop; Graham, Donald C.; and Hornbaker, A. L. Leadville Quadrangle, Colorado: 81 p., illus., econ. geol. map 1:500,000, geol. map 1:500,000, 624 ref., July 1982. (Rep. No. PGJ/F-027(82)) available from: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.

Collins, Tom see DeGraff, Jerome V.

- Colorado Division of Mines, Department of Natural Resources. A summary of mineral industry activities in Colorado, 1979; Part 1, Coal: Publ. Colo. Div. Mines, Denver, CO, United States, 47 p., illus. (incl. tables), 1979.
- Colorado Division of Mines, Department of Natural Resources. A summary of mineral industry activities in Colorado; 1980: Colo. Div. Mines, Denver, CO, United States, 45 p., illus. (incl. tables), 1980.
- Colorado Energy Research Institute; and Colorado School of Mines Research Institute. Oil shale 1982; a technology and policy primer: Colo. Energy Res. Inst., Golden, CO, United States, 93 p., illus. (incl. sketch maps), November 1981.
- Colorado Energy Research Institute; University of Denver Research Institute; and Colorado State University, Department of Civil Engineering. Water and energy in Colorado's future; the impacts of energy development on water use in 1985 and 2000: Westview Press, Boulder, CO, United States, 303 p., 19 tables, 1981.
- **Colorado Geological Survey** see U.S. Geological Survey

Colorado School of Mines Research Institute see Colorado Energy Research Institute

- Colorado State University, Department of Civil Engineering see Colorado Energy Research Institute
- Colton, R. B.; Holligan, J. A.; and Anderson, L. W. Preliminary map of landslide deposits, Denver 1 degrees by 2 degrees Quadrangle, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-0705, 1 sheet, eng. geol. map 1:250,000, 1975. Reprint.
- Condie, K. C. Precambrian rocks of southwestern United States and adjacent areas of Mexico: Resource Map. New Mexico Bureau of Mines & Mineral Resources, No. 13, 2 sheets, colored geol. map 1:1,460,640, 102 ref., 1981.
- Condie, K. C.; and Nuter, J. A. Geochemistry of the Dubois greenstone succession; an early Proterozoic bimodal volcanic association in West-central Colorado: Precambrian Research, Vol. 15, No. 2, p. 131-155, illus. (incl. 3 tables, geol. sketch map), 3 p. ref., 1981.

Coney, Peter J. see Kluth, Charles F.

- Connor, Frances R. see Garing, Kenneth L.
- Connors, R. A. see Weiland, E. F.
- Cook, Glenn L. Dil shale; an impending energy source: JPT. Journal of Petroleum Technology, Vol. 24, No. 11, p. 1325-1330, sketch map, 23 ref., November 1972.
- Cooley, M. E.; and Crist, M. A. Generalized fence diagram showing stratigraphy and potentiometric surface of the Tertiary formations in southeastern Wyoming and an adjacent part of Colorado: U. S. Geol. Surv., Misc. Invest. Ser., No. I-1308, 1 sheet, 1981.

Cordell, Lindrith see Suits, V. J.

- **Cortellini, Edmund A.** Geology of some intrusions of the Guffey volcanic center: Master's, 1979, Miami Univ., Oxford, OH.
- Costa, John E.; and Jarrett, Robert D. Debris flows in small mountain stream channels of Colorado and their hydrologic implications: Bulletin of the Association of Engineering Geologists, Vol. 18, No. 3, p. 309-322, illus. (incl. 2 tables, sketch map), 44 ref., August 1981.
- Covay, K. J.; and Tobin, R. L. Quality of ground water in Routt County, northwestern Colorado: Open-File Report (United States Geological Survey. 1978), No. 80-0956, 72 p., 1980. available from: U. S. Geol. Surv., Water Resour. Div., Denver, CO, United States.
- Cowan, G. A.; and Haxton, W. C. Solar neutrino production of technetium-97 and technetium-98: Science, Vol. 216, No. 4541, p. 51-54, sect., 1 table, 29 ref., April 2, 1982.

Cox, Leslie J. see Sheridan, Douglas M.

- Crafton, James W.; Poundstone, David J.; and Brown, Charles A. A practical model for evaluating a well producing from a tight gas formation: *in* Proceedings, Unconventional gas recovery symposium (Komar, C. A., chairperson), Soc. Pet. Eng., United States, p. 481-489, illus. (incl. 1 table), 8 ref., 1982.
- Craig, L. C. Uranium potential of the Burro Canyon Formation in western Colorado: Open-File Report (United States Geological Survey. 1978), No. 82-0222, 27 p., isopach maps, 21 ref., 1982. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Craig, L. C. see also Molenaar, C. M.

Craig, Lawrence C. Lower Cretaceous rocks, southwestern Colorado and southeastern Utah: in Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 195-200, sketch maps, 16 ref., 1981.

Craigg, S. D. see Frenzel, P. F.

Crawley, R. A. see Goodknight, Craig S.

Crist, M. A. see Cooley, M. E.

Crowley, K. D. see Eschner, T. R.

- Crowley, Kervin David. Origin, structure, and internal stratification of three hierarchical classes of bedforms in unidirectional flows; examples from laboratory rivers and the channels of the Platte River basin in Colorado and Nebraska: 248 p., Doctoral, 1982, Princeton Univ., Princeton, NJ. available from: Univ. Microfilms.
- Cumella, Stephen P. Early precipitation of authigenic clay by meteoric water, Pictured Cliffs, San Juan Basin, New Mexico and Colorado [abstr.]: in Gulf Coast Association of Geological Societies; transactions, 31st annual meeting (Maggio, Carlos M., editor; et al.), Transactions - Gulf Coast Association of Geological Societies, Vol. 31, p. 272, 1981.

Curran, D. R. see Murri, W. J.

Daly, C. J. see Morel-Seytoux, H. J.

- Dames and Moore. Coal resource occurrence and coal development potential maps of the La Plata Quadrangle, San Juan County, New Mexico, and La Plata County, Colorado: Open-File Report (United States Geological Survey. 1978), No. 79-1110, 30 p., 14 anal., 5 tables, sects., coal deposits maps 1:24,000, 13 ref., 1979. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Dames and Moore. Coal resource occurrence and coal development potential maps of the Adobe Downs Ranch Quadrangle, San Juan County, New

Mexico, and La Plata County, Colorado: Dpen-File Report (United States Geological Survey. 1978), No. 79-1111, 24 p., 8 anal., 2 tables, sects., coal deposits maps 1:24,000, 11 ref., 1979. available from: U. S. Geol. Surv., Dpen-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Dane, J. H.; and Klute, A. Salt effects on the hydraulic properties of a swelling soil: in Proceedings of the 42nd annual meeting, Soil Science Society of America (Stewart, B. A., editor), Soil Science Society of America Journal, Vol. 41, No. 6, p. 1043-1049, illus., 24 ref., December 1977.

Danielson, Jeris A. see Knudsen, Walter I., Jr.

- Daubert, John T.; and Young, Robert A. Ground-water development in western river basins; large economic gains with unseen costs: in Proceedings of a symposium on ground-water management (Lehr, Jay H., editor), Ground Water, Vol. 20, No. 1, p. 80-85, 2 tables, 14 ref., February 1982.
- Davis, Donald G. The Deep Creek caves; a thermal/meltwater complex?: Cinther, Vol. 23, No. 7, p. 7-10, 4 ref., February 1981.
- Dea, Peter A. see Robinson, Charles H.
- Dean, W. E.; and Pitman, J. K. (investigators). Geochemical surveys of oil shale in the Piceance Creek basin, Colorado [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 41, 1981 [1982].

Decker, Tim L. see Waltz, James

- DeGraff, Jerome V.; Olson, Earl P.; Collins, Tom; et al. Inventory of geological hazards: variously paginated, eng. geol. map 1:1,890,000, September 1980. (Rep. No. G-R-4-80-1) available from: U. S. Dep. Agric., R-4 Intermountain Region, Washington, DC, United States.
- Dengler, L. A. Microstructure of laboratory and nuclear explosively deformed gas-bearing sandstones: in High-pressure science and technology; Vol. 2, Applications and mechanical properties (Timmerhaus, Klaus D., editor; et al.), Proceedings of the AIRAPT International High Pressure Conference, No. 6, p. 335-345, illus. (incl. 1 table), 12 ref., 1979. Sixth AIRAPT international high pressure conference.

Denham, Charles R. see Prothero, Donald R.

- DePaolo, D. J. Neodymium isotopes in the Colorado Front Range and crust-mantle evolution in the Proterozoic: Nature (London), Vol. 291, No. 5812, p. 193-196, illus. (incl. table, geol. sketch map), 30 ref., 1981.
- Desai, C. S.; and Siriwardane, H. J. Numerical models for track support structures: Journal

of the Geotechnical Engineering Division, Vol. 108, No. GT3, p. 461-480, illus., 31 ref., March 1982.

Dewey, R. S.; Robbins, L. A.; Dehler, L. D.; et al. A study of hazardous openings to abandoned underground mines in western Colorado; Volume 1, Final report; Volume II, Final appendix, A through L; Volume III, Final appendix, M through W: variously paginated, illus. (incl. tables, sketch maps), April 1980. (Rep. No. 21(1-3)81) (Rep. No. PB81-177909) (Rep. No. PB81-177917) available from: NTIS, Springfield, VA, United States. PB81-177925; in three separate volumes; prep. for U. S. Bur. Mines.

Dick, Jay D. see Meyer, Richard T.

- Dickinson, K. A. Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0735, 22 p., illus. (incl. sects., geol. sketch map), 22 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Dickinson, K. A.; and Hills, F. A. Oligocene volcanic rocks; possible source of uranium in epigenetic deposits in parts of Chaffee, Park, and Fremont counties, Colorado: Open-File Report (United States Geological Survey. 1978), 35 p., illus. (incl. 6 tables, sketch maps), 18 ref., 1982. (Rep. No. 82-0403) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Dickinson, K. A. (investigator). Uranium favorability in the Pueblo 1 degrees X2 degrees NURE quadrangle, Colorado [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 52, 1981 [1982].
- Dickinson, Kendell A. Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado: The Mountain Geologist, Vol. 18, No. 4, p. 88-94, sects., geol. sketch maps, 22 ref., October 1981.
- Dighem. Analog records from an airborne electromagnetic survey (using the Dighem II system) of parts of the Lake City Caldera, Hinsdale County, Colorado: Oper-File Report (United States Geological Survey. 1978), No. 81-1311, unpaginated, sketch map, 1 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States. With an introduction by Heran, William D.
- Dodge, R. A. Hydraulic sediment model study for proposed Blanco Diversion Dam modification: 43 p., illus., June 1981. (Rep. No. REC-ERC-81-3) available from: NTIS, Springfield, VA, United States.

Dohmen, Ted E. see Kanter, Lisa R.

Dolson, John. Southern Rockies; eastern and northwestern Colorado: *in* World energy developments, 1980 (Anonymous), AAPG Bulletin, Vol. 65, No. 10, p. 1836-1839, 3 tables, sketch map, October 1981.

Domenico, J. A. see Snyder, G. L.

Donivan, Stephen see Miller, Marvin E.

Donnell, J. R. Preliminary geologic map of the Sagebrush Hill Quadrangle, Rio Blanco County, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-1398, 1 sheet, geol. map 1:24,000, 1982.

Dorrance, W. G. see Hall, D. C.

Dougan, P. M. see Markley, D. E.

Dow, Robin L. see Kirk, Cheryl L.

- Dowsett, Frederick R., Jr.; Ganster, Maurice W.; Ranta, Donald E.; et al. Geology of the Mount Emmons molybdenum deposit, Crested Butte, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 325-332, illus. (incl. geol. sketch maps), 11 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Drobeck, P. A. Proterozoic syngenetic massive sulfide deposits in the Gunnison gold belt, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 279-286, illus. (incl. 31 anals., geol. sketch maps), 32 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Duff, B. M.; and Lepper, C. M. A high-resolution controlled-source audiomagnetotelluric system for mining applications: *in* Technical papers, Fiftleth annual international meeting and exposition (Anonymous), Technical Papers - Annual International Meeting and Exposition, Society of Exploration Geophysicists, No. 50, p. 3449-3467, illus., 4 ref., 1980.
- Dula, William F., Jr. Correlation between deformation lamellae, microfractures, macrofractures, and in situ stress measurements, White River Uplift, Colorado: Geological Society of America Bulletin, Vol. 92, No. 1, p. I 37-I 46, illus. (incl. geol. sketch map), 31 ref., January 1981.

Duncan, A. C. see Hall, D. C.

Dungan, Michael A.; Phelps, David; Stormer, John C.; et al. Late Cenozoic volcanism of the northern New Mexico-southern Colorado portion of the Rio Grande Rift: *in* Papers presented to the Conference on the processes of

Bibliography and Index of Colorado Geology

planetary rifting (Anonymous), LPI Contribution, No. 457, p. 137-140, 1 table, sketch map, 9 ref., 1981.

Dunn, Peter J. see Rouse, Roland C.

Dyer, Russ see Kanter, Lisa R.

- Dyni, John R.; and Hawkins, James E. Lacustrine turbidites in the Green River Formation, northwestern Colorado: Geology (Boulder), Vol. 9, No. 5, p. 235-238, illus. (incl. sect., sketch map), 14 ref., May 1981.
- Dyni, John Richard. Geology of the nahcolite deposits and associated oil shales of the Green River Formation in the Piceance Creek basin, Colorado: 182 p., Doctoral, 1981, Univ. of Colorado, Boulder, CO. available from: Univ. Microfilms.

Edelmann, Patrick see Cain, Doug

- Eisel, Leo M. The national ground water picture: *in* Proceedings of the Thirteenth biennial conference on ground water (Anonymous), Report - California Water Resources Center, No. 53, p. 33-38, November 1981.
- Ekiert, Franciszek; and Galkiewicz, Tadeusz. Zloza molibdenu Climax i Henderson w St. Zjednoczonych [The Climax and Henderson molybdenum deposits in the USA]: Przeglad Geologiczny, Vol. 25, No. 2, (286), p. 94-96, sketch maps, 8 ref., February 1977.

Elias, David W. see Kunkel, Robert P.

Ellis, C. E. see Ludington, Steve

- Ellis, S. R.; and Mann, P. G. Effects of effluents from a coal-fired electric-generating powerplant on local ground water near Hayden, Colorado: Dpen-File Report (United States Geological Survey. 1978), No. 81-1196, 153 p., illus., 1981. available from: U. S. Geol. Surv., Water Resour. Div., Denver, CO, United States. Water-resources investigations.
- Ellwood, Brooks B. Estimates of flow direction for calc-alkaline welded tuffs and paleomagnetic data reliability from anisotropy of magnetic susceptibility measurements; central San Juan Mountains, Southwest Colorado: Earth and Planetary Science Letters, Vol. 59, No. 2, p. 303-314, illus. (incl. 2 tables, sketch map), 29 ref., July 1982.

Epis, R. C. see Lee, K.

Epis, Rudy C. Supplemental road log No. 2; Gunnison to Saguache, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 64-74, illus. (incl. 1 table), 10 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

- Epis, Rudy C.; and Callender, Jonathan F. (editors). Western Slope, Colorado; western Colorado and eastern Utah: Oct. 8-10, 1981, Socorro, NM, United States. Guidebook - New Mexico Geological Society, No. 32, 337 p., illus. (incl. 28 tables, sects., geol. sketch maps), 792 ref., 1981. Individual articles are cited separately.
- Erdman, J. A.; and Harrach, G. H. Uranium in big sagebrush from Western U.S. and evidence of possible mineralisation in the Owyhee Mountains of Idaho: Journal of Geochemical Exploration, Vol. 14, No. 1, p. 83-94, illus. (incl. sketch map), 2 p. ref., 1981.

Ernst, David R. see Mutschler, Felix E.

- Eschner, T. R.; Hadley, R. F.; and Crowley, K.
 D. Hydrologic and morphologic changes in channels of the Platte River basin; a historical perspective: Open-File Report (United States Geological Survey. 1978), No. 81-1125, 61 p., illus. (incl. 5 tables, sketch maps), 60 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- **Evangelou, Vasilios Petros.** Chemical and mineralogical composition and behavior of the Mancos Shale as a diffuse source of salts in the upper Colorado River basin: 210 p., Doctoral, 1981, Univ. of California, Davis, CA. available from: Univ. Microfilms.

Evans, N. A. see Murel-Seytoux, H. J.

Evans, Robert George. Optimizing salinity control strategies for the upper Colorado River basin: 310 p., Doctoral, 1981, Colorado State Univ., Fort Collins, CD. *available from:* Univ. Microfilms.

Everett, L. G. see Slawson, G. C.

Fargo, R. L. see Repplier, F. N.

Farmer, Harlow G. see Prothero, Donald R.

Fassett, James E. Evidence for (or against) a large-scale impact resulting in a catastrophic extinction at the Cretaceous-Tertiary boundary in the San Juan Basin, New Mexico and Colorado [abstr.]: in Papers presented to the Conference on large body impacts and terrestrial evolution; geological, climatological, and biological implications (Anonymous), LPI Contribution, No. 449, p. 11, 1981.

Fassett, James E. see also Orth, C. J.

Fenton, Donald M.; Hennig, Harvey; and Richardson, Ryden L. The chemistry of shale oil and its refined products: in Oil shale, tar sands, and related materials (Stauffer, H. C., editor), ACS Symposium Series, No. 163, p. 315-325, 7 tables, 2 ref., 1981. Second chemical congress of the North American continent; Division of Fuel Chemistry.

Fertl, Walter H. see Boardman, Charles R.

-- see Schenewerk, Philip Andrew

- Fischer, A. G. Gilbert; bedding rhythms and geochronology: in The scientific ideas of G. K. Gilbert; an assessment on the occasion of the centennial of the United States Geological Survey (1879-1979) (Yochelson, Ellis L., editor), Special Paper - Geological Society of America, No. 183, p. 93-104, illus. (incl. 4 tables, sect.), 37 ref., 1980.
- Fischer, William A. Ordovician Harding Formation at Indian Springs Ranch: *in* Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado (Basan, Paul B., editor), Soc. Econ. Paleontol. and Miner., Rocky Mtn. Sect., Denver, CO, United States, p. 16-21, strat. col., block diag., sketch map, 3 ref., 1980.
- Fishbaugh, David A. Depositional model for the lower Fountain Formation in the Manitou Embayment, Colorado: Master's, 1980, Indiana Univ., Bloomington, IN.

Fiskell, J. G. A. see Yekini, B.

- Fixen, P. E.; and Ludwick, A. E. Residual available phosphorus in near-neutral and alkaline soils; I, Solubility and capacity relationships: Soil Science Society of America Journal, Vol. 46, No. 2, p. 332-334, illus. (incl. 28 anal., 2 tables), 16 ref., April 1982. Colo. State Univ. Exp. Stn., Sci. Ser. Paper No. 2655.
- Fixen, P. E.; and Ludwick, A. E. Residual available phosphorus in near-neutral and alkaline soils; II, Persistence and quantitative estimation: Soil Science Society of America Journal, Vol. 46, No. 2, p. 335-338, illus. (incl. 28 anal., 5 tables), 18 ref., April 1982. Colo. State Univ., Exp. Stn., Sci. Ser. Paper No. 2656.
- Flores, Romeo M.; and Tur, Stephen M. Characteristics of deltaic deposits in the Cretaceous Pierre Shale, Trinidad Sandstone, and Vermejo Formation, Raton Basin, Colorado: The Mountain Geologist, Vol. 19, No. 2, p. 25-40, illus. (incl. 1 table, sect., sketch maps), 32 ref., April 1982.

Fountain, J. C. see Hills, F. A.

Fox, J. P. see Giauque, R. D.

- -- see Mehran, M.
- Frenzel, P. F.; Craigg, S. D.; and Padgett, E. T. Preliminary data report for the San Juan Basin-Crownpoint surveillance study: Open-File Report (United States Geological Survey. 1978), No. 81-0484, 36 p., illus. (incl. 3 tables, sketch maps; hydrogeol. maps

1:500,000), 1981. *available from:* U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Frisken, J. G. see Snyder, G. L.

Fugelso, L. Erik see Bolivar, Stephen L.

- Fuka, Mary A. see Goff, Sue
- Galbreath, Edwin C. An apternodontid (Insectivora) from the Chadronian Oligocene of northeastern Colorado: Transactions of the Kansas Academy of Science, Vol. 81, No. 4, p. 297-302, illus., 1978.
- Galey, John T., Jr. see Thomas, John A.
- Galkiewicz, Tadeusz see Ekiert, Franciszek
- Gallagher, James R. L. see Nelson, Carl E.
- Gallagher, Jâmes Robert. A study of Laramide igneous intrusions, east of Ward, Boulder County, Colorado: Master's, 1979, Colorado School of Mines, Golden, CO.
- Gallimore, David L. see Maassen, Larry W.
- -- see Shannon, Spencer S., Jr.
- -- see Warren, Richard G.
- Galton, Peter M.; and Jensen, James A. Small bones of the hypsilophodontid dinosaur Dryosaurus altus from the Upper Jurassic of Colorado: The Great Basin Naturalist, Vol. 33, No. 2, p. 129-132, illus., 9 ref., June 30, 1973.

Ganster, M. W. see White, W. H.

Ganster, Maurice W. see Dowsett, Frederick R., Jr.

Garcia, Sammy R. see Warren, Richard G.

Gardner, Hal A. see Theis, Nicholas J.

Garing, Kenneth L.; and Connor, Frances R. Groundwater heat pumps in Colorado; an efficient and cost-effective way to heat and cool your home: Special Publication -Colorado Geological Survey, No. 18, 32 p., illus. (incl. 8 tables), 8 ref., 1981. Report by Coury and Assoc., Lakewood, CO for the Colo. Geol. Surv.

Garrigues, R. S. see Hildebrand, R. T.

Gaskill, D. see Goodknight, Craig S.

Gaskill, D. L.; Mutschler, Felix E.; and Bartleson, B. L. West Elk volcanic field, Gunnison and Delta counties, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 305-318, illus. (incl. 2 tables, geol. sketch maps), 33 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Gaskill, David L. see Mutschler, Felix E.

- Geary, Dana Helen. Evolutionary mode in Pleuriocardium (Cretaceous Bivalvia): 132 p., illus., Master's, 1981, Univ. of Colorado, Boulder, CO.
- Geodata International. Aerial radiometric and magnetic survey, Sterling National Topographic Map, Colorado/Kansas/Nebraska; Nebraska-Dakotas project: variously paginated, illus. (incl. 12 tables; geol. map 1:500,000; geophys. surv. map 1:500,000), 14 ref., 1981. (Rep. No. GJBX-87-81) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.
- Geodata International. Aerial radiometric and magnetic survey, Limon National Topographic Map, Colorado; Nebraska-Dakotas project: variously paginated, illus. (incl. 12 tables; geol. map 1:500,000; geophys. surv. map 1:500,000), 12 ref., 1981. (Rep. No. GJBX-56-81) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.

George, Melvin R. see Richardson, Steven G.

George, William E. see Goff, Sue

Gephart, John Wesley. The structural geology of the lower North Inlet area, Rocky Mountain National Park, Colorado; an evaluation of the Precambrian F/4_ deformation: 120 p., illus. (incl. 4 plates), Master's, 1981, Univ. of Colorado, Boulder, CO.

Geraghty, E. P. see Shannon, J. R.

- Gestring, W. D.; and Soltanpour, P. N. Boron analysis in soil extracts and plant tissue by plasma emission spectroscopy: Communications in Soil Science and Plant Analysis, Vol. 12, No. 8, p. 733-742, 3 tables, 14 ref., 1981.
- Giauque, R. D.; Fox, J. P.; and Smith, J. W. Characterization of two core holes from the Naval Oil Shale Reserve Number 1: 3 p., 1 table, May 1981. (Rep. No. EPA-600/S7-81-024) available from: U. S. Environ. Prot. Agency, Cent. Environ. Res. Inf., Cincinnati, OH, United States. Project summary.
- Gibboney, Melissa J. Paleoclimatic interpretations of the Permian Cutler Formation in western Colorado from a comparison of size-composition trends of the Cutler Formation and Holocene sands: Master's, 1980, Indiana Univ., Bloomington, IN.
- **Gibbs, J. W.** Hydrologic data for urban storm runoff from nine sites in the Denver

metropolitan area, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0682, 150 p., illus. (incl. 84 tables, sketch map), 4 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Gill, Douglas. Oil and gas bigger than shale in Grand Junction: Western Oil Reporter, Vol. 38, No. 12, p. 128-129, illus., December 1981.

Gillam, Mary L. see Biggar, Norma E.

Gilliam, Juanita. Garnets on Ruby Mountain: Lapidary Journal, Vol. 30, No. 4, p. 1022-1023, July 1976.

Gilmore, J. S. see Orth, C. J.

Gingerich, Philip D. Variation, sexual dimorphism, and social structure in the early Eocene horse Hyracotherium (Mammalia, Perissodactyla): Paleobiology, Vol. 7, No. 4, p. 443-455, illus. (incl. 2 tables), 56 ref., 1981.

Glahn, P. R. see Hausel, W. D.

- Glas, T. K.; Klute, A.; and McWhorter, D. B. Dissolution and transport of gypsum in soils; II, Experimental: *in* Proceedings of the 43rd annual meeting, Soil Science Society of America (Walsh, L. M., president), Soil Science Society of America Journal, Vol. 43, No. 2, p. 268-273, illus. (incl. 2 tables), 18 ref., April 1979.
- Glass, Gary B. A critical evaluation of published Western coal-resource estimates: in The evaluation of North American coal resources (Anonymous), Geological Society of America Bulletin, Vol. 92, No. 8, p. I 538-I 541, illus. (incl. 1 table, sketch map), 5 ref., August 1981. Coal geology symposium.

Goddard, K. E. see Saulnier, G. J., Jr.

Godfrey, Andrew see DeGraff, Jerome V.

- Goetz, Carole L. Preliminary analysis of historical streamflow and water-quality records: in Environmental geology and hydrology in New Mexico (Wells, Stephen G., editor; et al.), Special Publication - New Mexico Geological Society, No. 10, p. 21-25, illus. (incl. 2 tables, sketch map), 3 ref., 1981.
- Goff, Sue; George, William E.; Apel, Charles T.; et al. Uranium hydrogeochemical and stream sediment reconnaissance data released for the Red Creek Quartzite special study area, Vernal NTMS Quadrangle, Utah/Colorado, including concentrations of forty-six additional elements: LA - Los Alamos Scientific Laboratory, No. 8484, 31 p., 10 ref., April 1981. (Rep. No. GJBX-173-81) (Rep. No. UC-51) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation

Program.

- Goodknight, Craig S. Uranium in the Gunnison Country, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 183-189, 1 table, sketch map, 19 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Goodknight, Craig S.; Cole, R. D.; Crawley, R. A.; et al. Third day; Road log from Grand Junction to crested Butte via Delta, Montrose and Gunnison: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 29-47, illus. (incl. sketch map), 1981. New Mexico Geological Society; Thirty-second field conference.
- Goodknight, Craig S.; and Ludlam, John R. Montrose Quadrangle, Colorado: 91 p., illus. (incl. 7 tables, sketch maps; econ. geol. maps), 145 ref., June 1981. (Rep. No. GJQ-010(81)) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.

Goodknight, Craig S. see also Anderson, Jule R.

- Gornitz, Vivien M. Volcanism and the tectonic development of the Rio Grande Rift and environs, New Mexico-Colorado, from analysis of petrochemical data: The Mountain Geologist, Vol. 19, No. 2, p. 41-57, illus. (incl. 1 anal., 1 table, geol. sketch maps), 112 ref., April 1982.
- Gough, D. I.; and Bell, J. S. Stress orientations from borehole wall fractures with examples from Colorado, East Texas, and northern Canada: Canadian Journal of Earth Sciences = Journal Canadien des Sciences de la Terre, Vol. 19, No. 7, p. 1358-1370 (incl. French sum.), illus. (incl. 1 table, sketch maps), 25 ref., July 1982.
- Gough, L. P.; and Severson, R. C. Element concentrations in rehabilitation species from thirteen coal-stripmines in five western states and Alaska: Open-File Report (United States Geological Survey. 1978), No. 81-0182, 118 p., illus. (incl. 28 tables, sketch map), 23 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Gould, W. D.; Anderson, R. V.; McClellan, J. F.; et al. Characterization of a Paleosol; its biological properties and effect on overlying soil horizons: Soil Science, Vol. 128, No. 4, p. 201-210, illus. (incl. 1 table), 44 ref., October 1979.
- Graff, P. J. see Sears, J. W.

Graham, Donald C. see Collins, Donna Bishop

Graham, Russell W. Preliminary report on late Pleistocene vertebrates from the Selby and Dutton archeological/paleontological sites, Yuma County, Colorado: Contributions to Geology, Vol. 20, No. 1, p. 33-56, illus. (incl. 9 tables, sketch map), 73 ref., August 1981.

Grauch, R. I. see Hon, K. A.

Gray, G. see Richardson, Steven G.

- Gries, Robbie. 011 and gas prospecting beneath the Precambrian of foreland thrust plates in the Rocky Mountains: The Mountain Geologist, Vol. 18, No. 1, p. 1-18, illus. (incl. 1 table, sects., sketch maps), 6 ref., January 1981.
- Grout, Marilyn Ann. Rockwall erosion in the northern Sangre de Cristo Mountains, Colorado; contributing factors, sequence, and rate: 165 p., illus., Master's, 1981, Univ. of Colorado, Boulder, CO.

Gurnsey, J. L. see Gould, W. D.

Gustafson, V. O. Petroleum geology of the Devonian and Mississippian rocks of the Four Corners region: in Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 101-109, illus. (incl. 2 tables, sketch maps), 13 ref., 1981.

Gutentag, E. D. see Luckey, R. R.

-- see Weeks, J. B.

Hadley, R. F. see Eschner, T. R.

- Haik, Vernon. Our trip to Indian country; 1981: Bulletin of the Southern California Paleontological Society, Vol. 13, No. 9-10, p. 139-140, October 1981.
- Hail, W. J. (investigator). Geology and oil-shale resources in the central Roan Plateau, Colorado [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 41-42, 1981 [1982].
- Hail, W. J., Jr. Low-grade uranium in the Fort Union Formation, Crooked Wash area, northwestern Colorado: Dpen-File Report (United States Geological Survey. 1978), No. 81-0586, 27 p., illus. (incl. 30 anals., 1 table, sects., sketch maps; index maps), 10 ref., 1981. available from: U. S. Geol. Surv., Dpen-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Hail, W. J., Jr. Preliminary geologic map of the Circle Dot Gulch Quadrangle, Garfield County, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-1293, 1 sheet, geol. map 1:24,000, 1982.

Hail, W. J., Jr. see also Tweto, Ogden

- Hall, D. C.; and Duncan, A. C. Characterization of urban runoff from Grange Hall Creek at Northglenn, Adams County, Colorado: Water-Resources Investigations, WRI 81-28, 58 p., 1982. (Rep. No. PB-82 215 039) available from: NTIS, Springfield, VA, United States.
- Hall, D. C.; Hillier, D. E.; Nickum, Edward; et al. Effects of residential wastewater treatment systems on ground-water quality in West-central Jefferson County, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0073, 116 p., 1981. available from: U. S. Geol. Surv., Water-Resour. Div., Denver, CO, United States. Water-resources investigations.

Hammack, Gregory W. see Boardman, Charles R.

Hanks, Dixie see Goff, Sue

Hanley, Edward J.; and VanHorn, Larry E. Niobrara Development Program, Washington County, Colorado: *in* Proceedings of the 1981 SPE/DDE symposium on low permeability gas reservoirs (Bixel, Harold, chairperson), Soc. Pet. Eng. AIME, Denver, CO, United States, p. 233-243, illus. (incl. 2 tables), 10 ref., 1981. SPE/DDE 9850.

Hansel, James M. see Goff, Sue

Hansen-Bristow, Katherine Jane. Environmental controls influencing the altitude and form of the forest-alpine tundra ecctone, Colorado Front Range: 274 p., Doctoral, 1981, Univ. of Colorado, Boulder, CO. available from: Univ. Microfilms.

Hansen, W. R. see Rowley, P. D.

- Hansen, Wallace R. Environmental geology of the Greater Denver area, Colorado, U.S.A.: in Hommage a Leon Calembert, professeur a Universite de Liege, a l'occasion de son accession a l'emeritat le 28 fevrier 1980in Hommage to Leon Calembert, professor at Liege University, on the occasion of his accession to emeritus status on February 28, 1980 (Anonymous), Ed. Georges Thone, Liege, Belgium, p. 103-108, sketch map, 26 ref., 1980.
- Hansen, Wallace R. Geologic and physiographic highlights of the Black Canyon of the Gunnison River and vicinity, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 145-154, illus. (incl. 1 table, geol. sketch maps), 20 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Hansley, P. L. Mineralogy and diagenesis of core samples of Upper Cretaceous sandstones, Twin Arrow Inc. 4-14x C and K well, Piceance Creek basin, northwestern Colorado: Open-File Report (United States Geological Survey, 1978), No. 81-0845, 10 p., 3 tables, 2 ref., 1981, available from: U. S. Geol. Surv.,

Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

- Hansley, P. L. Mineralogy, diagenesis, and provenance of Upper Cretaceous sandstones from the Ralston Production Company Federal No. 31 well, Piceance Creek basin, north-western Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-1295, 23 p., illus. (incl. 2 tables, sketch map), 12 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Harbert, H. P. see Kilkelly, M. K.
- Harden, Deborah R. see Biggar, Norma E.
- Harder, Vicki. A ground water convection model for Rio Grande Rift geothermal resources: Compass of Sigma Gamma Epsilon, Vol. 58, No. 4, p. 69-76, illus. (incl. 1 table, sketch map), 20 ref., 1981.

Harrach, G. H. see Erdman, J. A.

- Hart, S. S. see Rogers, W. P.
- Hatton, Tom see Hynes, Jeffrey L.
- Hausel, W. D.; Glahn, P. R.; and Woodzick, T. L. Geological and geophysical investigations of kimberlite in the Laramie Range of southeastern Wyoming: Preliminary Report -The Geological Survey of Wyoming, No. 18, 13 p., illus. (incl. 1 table, 2 plates, geol. sketch maps; geol. maps 1:24,000), 22 ref., 1981.
- Hausel, W. Dan. Diamond exploration in Colorado and Wyoming [abstr.]: Newsletter - West Texas Geological Society, Vol. 21, p. 7, January 1981.
- Havlin, J. L.; and Soltanpour, P. N. Evaluation of NH/4_HCD/3_-DTPA soil test for iron and zinc: in Proceedings of the 45th annual meeting, Soil Science Society of America (Stewart, B. A., president), Soil Science Society of America Journal, Vol. 45, No. 1-6, p. 70-75, illus. (incl. 3 tables), 26 ref., 1981. Colo. State Univ. Exp. Stn., Dep. Agron.; Contrib.

Hawkins, James E. see Dyni, John R.

Haworth, Randol A. Stratigraphy of the Cedar Mountain and Dakota formations (Cretaceous), Garfield County, Colorado: Master's, 1979, Colorado School of Mines, Golden, CO.

Haxton, W. C. see Cowan, G. A.

Hayes, Larry D. The Colony Shale Oil Project: in Oil shale (Shaffer, Karen, chairperson; et al.), Am. Min. Congr., United States, Vol. 5, p. 15, 1981.

Healy, F. C. see Repplier, F. N.

Hedge, C. E. see Simmons, E. C.

-- see Smith, C. B.

- Hedlund, D. C.; and Olson, J. C. Precambrian geology along parts of the Gunnison Uplift of southwestern Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 267-272, illus. (incl. 2 tables, geol. sketch map), 17 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Heinrich, E. William. Kindreds and districts of rare-mineral pegmatites in Colorado [abstr.]: in The mineralogy of pegmatites (Brown, Gordon E., Jr., editor), American Mineralogist, Vol. 67, No. 1-2, p. 183, February 1982.
- Heinrich, E. William see also Simmons, William B.
- Heistand, R. N.; Atwood, R. A.; and Richardson, K. L. Paraho environmental data; Part I, Process characterization; Part II, Air quality; Part III, Water quality: variously paginated, illus. (incl. tables), June 1980. (Rep. No. DDE/EV-OO86) available from: NTIS, Springfield, VA, United States.
- Heigesen, J. O.; Jorgensen, D. G.; Leonard, R. B.; et al. Regional study of the Dakota Aquifer (Darton's Dakota revisited): Ground Water, Vol. 20, No. 4, p. 410-414, sects., sketch maps, 14 ref., August 1982.

Hennig, Harvey see Fenton, Donald M.

Henry, Rebekah. Geology for non-geologists: Earth Science, Vol. 34, No. 3, p. 11-12, 1981.

Hensley, Walter K. see Maassen, Larry W.

-- see Shannon, Spencer S., Jr.

- Heran, W. D.; and High Life Helicopters. Stacked profiles of data from a helicopter airborne radiometric and magnetic survey of the Lake City area, San Juan Mountains, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0567, 7 p., 81 sheets, 1 table, sketch map, 1 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Heran, W. D.; and High Life Helicopters/QEB. Contour maps of uranium, uranium-thorium ratio, and total field magnetics, Lake City area, San Juan Mountains, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0568, 40 p., 33 sheets, illus. (incl. 1 table, geol. sketch map; contour maps), 11 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Heran, W. D. see also Christopherson, K. R.

Herr, Randy G.; and Picard, M. Dane. Petrography of Upper Cambrian Lodore Formation, Northeast Utah and Northwest Colorado: Contributions to Geology, Vol. 20, No. 1, p. 1-21, illus. (incl. 2 tables, sketch map), 62 ref., August 1981.

Herrmann, Robert B.; Park, Sam-Kuen; and Wang, Chien-Ying. The Denver earthquakes of 1967-1968: Bulletin of the Seismological Society of America, Vol. 71, No. 3, p. 731-735, illus., 18 ref., June 1981.

High Life Helicopters see Heran, W. D.

High Life Helicopters/QEB see Heran, W. D.

- Hildebrand, R. T.; and Garrigues, R. S. Geology and chemical analyses of coal, Mesaverde Group (Cretaceous), lower White River coal field, Moffat and Rio Blanco counties, Colorado: Open-File Report (United States Geological Survey, 1978), No. 81-0597, 27 p., illus. (incl. 13 anal., 9 tables, geol. sketch map), 27 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Hildebrand, R. T.; Garrigues, R. S.; Meyer, R.
 F.; et al. Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-1348, 103 p., illus. (incl. 117 anal., 12 tables, sketch maps), 27 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Hill, James M. Oil and gas geology of the San Juan Basin: The Interstate Oil Compact Commission Committee Bulletin, Vol. 23, No. 2, p. 44-52, illus. (incl. sketch maps), 4 ref., December 1981.

Hillier, D. E. see Hall, D. C.

-- see Steele, T. D.

Hills, F. A.; and Fountain, J. C. (investigators). Uranium content in Precambrian rocks, Colorado and Wyoming [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 53, 1981 [1982].

Hills, F. A. see also Dickinson, K. A.

Hite, R. J.; and Buckner, D. H. Stratigraphic correlations, facies concepts and cyclicity in Pennsylvanian rocks of the Paradox Basin: *in* Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 147-159, illus. (incl. 1 table, sect., strat. cols., geol. sketch maps), 29 ref., 1981.

Hite, Robert see Molenaar, C. M.

Hoblitt, R. P. see Larson, E. E.

Hoblitt, Richard P. see Walker, Theodore R.

Holden, G. S. see Sears, J. W.

Holligan, J. A. see Colton, R. B.

- Holtz, Wesley G. Public awareness of homes built on shrink-swell soils: in Proceedings of the Fourth international conference on expansive soils; Characterization and treatment of expansive soils for engineering design (Snethen, Donald R., editor), Proceedings of the International Conference on Expansive Soils, No. 4, p. 617-638, illus., 1980.
- Hon, K. A.; and Grauch, R. I. (investigators). Stratigraphy and uranium paragenesis, Lake City caldera, Colorado [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 52-53, 1981 [1982].
- Hopkins, J. M. Shale oil; a synthetic fuel of the future: *in* Proceedings of the topical meeting; A technical assessment of nuclear power and its alternatives (Randall, I. E., chairperson), Am. Nucl. Soc., La Grange Park, IL, United States, p. II3.1-II3.12, illus. (incl. 1 table), 1980.
- Hopkins, John M. Union Oil Company's Oil Shale Project: in Oil shale (Love, William H., chairperson; et al.), Am. Min. Congr., United States, Vol. 4, p. 11, illus. (incl. sketch map), 1980.

Hopkins, R. T., Jr. see Snyder, G. L.

Hornback, V. Q. see Wahlstrom, E. E.

Hornbaker, A. L. see Collins, Donna Bishop

-- see Rogers, W. P.

- House, Cadwell Burl. Tungsten mining in Boulder County, Colorado, during World War I: Earth Science, Vol. 27, No. 3, p. 143-144, June 1974.
- Howarth, R. J.; Koch, G. S., Jr.; Plant, J. A.; et al. Identification of uraniferous granitoid source rocks on the basis of hydrogeochemical data from the National Uranium Resource Evaluation Program of the United States Department of Energy [abstr.]: in Anniversary meeting of the Mineralogical Society (Hamilton, D. L., convener), Mineral. Soc., Bull., No. 49, p. 7, December 1980.

Howarth, Richard J. see Koch, George S., Jr.

Hsieh, Paul A.; and Bredehoeft, John D. A reservoir analysis of the Denver earthquakes; a case of induced seismicity: JGR. Journal of Geophysical Research. B, Vol. 86, No. 2, p. 903-920, illus. (incl. tables, sketch maps), 31 ref., February 10, 1981.

- Hsieh, Paul Anthony. A reservoir analysis of the Denver earthquakes; a case of induced seismicity: 65 p., Master's, 1979, Univ. of Arizona, Tucson, AZ.
- Hunter, William R. Soil survey of Paonia area, Colorado; parts of Delta, Gunnison, and Montrose counties: U. S. Dep. Agric., Soil Conserv. Serv., Washington, DC, United States, 184 p., illus. (incl. 22 tables; soils maps 1:24,000; colored soils map 1:316,800), 4 ref., January 1981. (Publ. in coop. with Colo. Agric. Exp. Stn.).
- Hutchinson, Robert M. Structure and petrology of Cochetopa Pluton and its metamorphic wallrocks, Saguache County, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 297-304, illus. (incl. 2 tables, geol. sketch map), 7 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Hynes, Jeffrey L.; Longmire, Patrick A.; and Hatton, Tom. Siting considerations for hazardous waste disposal: in Hazardous wastes in Colorado; a preliminary evaluation of generation and geologic criteria for disposal (Hynes, Jeffrey, L.; et al.), Information Series - Colorado Geological Survey, No. 14, p. 33-90, environ. geol. map 1:1,000,000, geol. map 1:2,000,000, hydrogeol. map 1:2,000,000, 120 ref., 1980. With appendices.

Illangasekare, T. see Morel-Seytoux, H. J.

-- see Murel-Seytoux, H. J.

- Jackson, C. Kaye see Shannon, Spencer S., Jr.
- Jackson, M. L. see Lee, S. Y.

Jackson, Philip see Shuchman, Robert A.

- **Jacobson, Mark I.** A U. S. review; Chrysoberyl: Rocks and Minerals, Vol. 57, No. 2, p. 49-57, illus. (incl. sketch maps), 40 ref., April 1982.
- Jacobson, Mark I.; and Murphy, Jack A. Collections and displays; Coors Hall of Minerals, Denver Museum of Natural History: Rocks and Minerals, Vol. 57, No. 2, p. 58-62, illus. (incl. sketch map), April 1982.

Jarrett, Robert D. see Costa, John E.

Jenkins, John E. November's gem: Jewelry Making Gems & Minerals, No. 529, p. 10-11, 29, illus., November 1981.

Jensen, James A. see Galton, Peter M.

Jochim, Candace L. Home landscaping and maintenance on swelling soil: Special Publication - Colorado Geological Survey, No. 14, 30 p., illus. (incl. block diag., sketch maps), 1981.

- Johnson, Douglas Edward. Effect of rehabilitation practices on plant establishment in the Piceance Basin of Colorado: 230 p., Doctoral, 1980, Colorado State Univ., Fort Collins, CD. available from: Univ. Microfilms.
- Johnson, H. Cyril. Western gem hunters atlas, 3rd edition: H. Cyril Johnson, Susanville, CA, United States, 1963. Second edition publ. in 1962.
- Johnson, John G.; and Sandberg, Charles A. Lower and Middle Devonian continental-shelf rocks of the western United States: *in* Proceedings of the 1977 annual meeting of the Paleontological Society on Devonian of western North America (Murphy, Michael A., editor; *et al.*), Campus Museum Contributions, No. 4, p. 121-143, illus. (incl. 2 tables, sketch maps), 84 ref., November 9, 1977.
- Johnson, L. D. Field test sections on expansive soil: in Proceedings of the Fourth international conference on expansive soils; Characterization and treatment of expansive soils for engineering design (Snethen, Donald R., editor), Proceedings of the International Conference on Expansive Soils, No. 4, p. 262-283, illus., 7 ref., 1980.
- Johnson, R. C. Preliminary geologic map of the Desert Gulch Quadrangle, Garfield County, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-1328, 1 sheet, geol. map 1:24,000, 1981.

Johnson, R. C. see also Nuccio, V. F.

Johnson, Robert A. see Thelin, Gail P.

- Johnson, Ronald C. Stratigraphic evidence for a deep Eocene Lake Uinta, Piceance Creek basin, Colorado: Geology (Boulder), Vol. 9, No. 2, p. 55-62, illus. (incl. sketch maps), 47 ref., February 1981.
- Johnson, Ronald C.; and Keighin, C. William. Cretaceous and Tertiary history and resources of the Piceance Creek basin, western Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 199-210, sects., sketch maps, 39 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Johnson, S. A. see Weiland, E. F.

Johnson, Thomas L. see Thelin, Gail P.

Johnson, V. C.; McCarn, D. W.; Kocis, D. E.; et al. Trinidad Quadrangle, Colorado: 37 p., illus. (incl. econ. geol. maps 1:500,000; geochem. map 1:500,000), 89 ref., June 1982. (Rep. No. PGJ/F-034(82)) available from: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche. Johnson, V. C. see also Maarouf, A. M.

- Jones, Bob. Aragonite; for a common mineral, it's amazingly scarce: Rock & Gem, Vol. 11, No. 10, p. 40-41, 44-46, 77-79, illus., October 1981.
- Jones, David C. Active/licensed coal mines of Colorado: Colo. Geol. Surv., Denver, CD, United States, 1 sheet, econ. geol. map 1:900,000, 3 ref., 1976.

Jones, Randolf F. see Sutton, Christopher J.

Jorgensen, D. G.; and Signor, D. C. Plan of study for the Central Midwest Regional Aquifer System Analysis in parts of Arkansas, Colorado, Kansas, Missouri, Nebraska, New Mexico, Oklahoma, South Dakota, and Texas: Open-File Report (United States Geological Survey. 1978), No. 81-0206, 28 p., illus. (incl. sketch maps), 6 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States. Water-resources investigations.

Jorgensen, D. G. see also Helgesen, J. O.

Junge, W. Rahe see Kirkham, Robert M.

Kaltenback, A. J. see Reitsema, R. H.

- Kamilli, R. J. see White, W. H.
- Kanter, Lisa R.; Dyer, Russ; and Dohmen, Ted E. Laramide crustal shortening in the northern Wyoming Province: in Rocky Mountain Foreland basement tectonics (Boyd, Donald W., editor; et al.), Contributions to Geology, Vol. 19, No. 2, p. 135-142, illus. (incl. block diag., geol. sketch maps), 27 ref., January 1981.

Karlinger, M. R. see Kircher, J. E.

Kauffman, Erle G. see Boyles, J. Michael

Kaufmann, R. F. Hydrogeologic influences on the long term disposal of uranium mill tailings: in Proceedings of the Groundwater pollution conference (Lawrence, C. R., editor; et al.), Australian Water Resources Council Conference Series, No. 1, p. 1-39, illus. (incl. 5 tables, sketch maps), 42 ref., 1981.

Keighin, C. William see Johnson, Ronald C.

-- see Young, R. G.

Keller, G. V. Geophysical methods in prospecting for geothermal resources: in Geophysical aspects of the energy problem (Rapolla, A., editor; et al.), Elsevier Sci. Publ. Co., Amsterdam, Netherlands, Vol. 1, p. 51-82, illus. (incl. sketch maps), 21 ref., 1980. Second course held at the School of Geophysics "Ettore Majorana" International Centre for Scientific Culture. Keller, G. V. CSM Geophysic Department: Mines Magazine, Vol. 71, No. 5, p. 5-8, May 1981.

Kelly, K. E. Bailing and construction considerations for deep aquifer monitoring wells on Western oil shale leases: Ground Water, Vol. 20, No. 2, p. 179-185, illus. (incl. 3 tables, sect., sketch map), 5 ref., April 1982.

Kelly, K. E., Jr. see Slawson, G. C.

Kelso, B. S. see Tremain, C. M.

- Kennedy, Marie. Something about septaria: Lapidary Journal, Vol. 18, No. 1, p. 102-105, illus., April 1964.
- Kidd, D. E.; and Potter, L. D. Analysis of metallic cations in the Lake Powell ecosystem and tributaries: Lake Powell Research Project Bulletin, No. 63, 170 p., illus. (incl. 38 tables, sketch map), 39 ref., June 1978.
- Kilkelly, M. K.; Harbert, H. P.; and Berg, W. A. Revegetation studies on Tosco II and USBM retorted oil shales: Oil Shale Symposium Proceedings, No. 14, p. 410-421, illus. (incl. 5 tables, sketch map), 6 ref., August 1981.
- Kimball, B. A. Geochemistry of spring water, southeastern Uinta Basin, Utah and Colorado: Geological Survey Water-Supply Paper (Washington), No. 2074, 30 p., 1981. Supersedes Open-file report 80-417.

Kirby, J. R., Jr. see Zietz, Isidore

- Kircher, J. E. Sediment analysis for selected sites on the South Platte River in Colorado and Nebraska, and the North Plate and Platte rivers, Nebraska; suspended sediment, bedload and bed material: Open-File Report (United States Geological Survey. 1978), No. 81-0207, 53 p., illus. (incl. 8 tables, sketch map), 4 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Kircher, J. E.; and Karlinger, M. R. Changes in surface-water hydrology, Platte River basin in Colorado, Wyoming, and Nebraska upstream from Duncan, Nebraska: Open-File Report (United States Geological Survey. 1978), No. 81-0818, 83 p., illus. (incl. 8 tables, sketch map), 11 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CD, United States.
- Kirk, Cheryl L.; Byrd, William J.; Dow, Robin L.; et al. Bibliography of theses and dissertations on Colorado, 1968-1980: The Mountain Geologist, Vol. 18, No. 4, p. 96-113, sketch maps, 447 ref., October 1981.
- Kirkham, Robert M.; Blair, Robert W.; and Junge, W. Rahe. Geotechnical aspects of the search for a permanent repository for the Durango uranium tailings pile: in Geology of the Paradox Basin (Wiegand, Del L., editor), Field

Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 227-232, illus. (incl. strat. col., sketch map), 3 ref., 1981.

- Kirkham, Robert M.; and Rogers, William P. Earthquake potential in Colorado; a preliminary evaluation: Bulletin - Colorado Geological Survey, Department of Natural Resources, No. 43, 171 p., illus. (incl. sects., geol. sketch maps; eng. geol. maps 1:1,000,000), 333 ref., 1981.
- Kitcho, Catherine A. Characteristics of surface faults in the Paradox Basin: in Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 1-22, illus. (incl. sects., sketch maps), 20 ref., 1981.

Kitcho, Catherine A. see also Sugiura, Ray

- Kiteley, Louise W. Part II: in Depositional systems, Upper Cretaceous Mancos Shale and Mesaverde Group, northwestern Colorado (Boyles, J. Michael; et al.), Soc. Econ. Paleontol. Miner., Rocky Mt. Sect., United States, p. II.1-II.55, illus. (incl. 2 plates, geol. sketch maps), 55 ref., 1981.
- Kiteley, Louise W. Mileage log: in Depositional systems, Upper Cretaceous Mancos Shale and Mesaverde Group, northwestern Colorado (Boyles, J. Michael; et al.), Soc. Econ. Paleontol. Miner., Rocky Mt. Sect., United States, 5 p., 1981.

Kiteley, Louise W. see also Boyles, J. Michael

Klein, D. P. see Boler, F. M.

Kleinkopf, M. Dean see Boler, F. M.

Kletke, Darrel see Warren, John

Klipping, Sharon see Scott, G. L.

Klusman, Ronald W.; and Webster, James D. Preliminary analysis of meteorological and seasonal influences on crustal gas emission relevant to earthquake prediction: Bulletin of the Seismological Society of America, Vol. 71, No. 1, p. 211-222, illus. (incl. tables), 23 ref., February 1981.

Klute, A. see Dane, J. H.

-- see Glas, T. K.

Kluth, Charles F.; and Coney, Peter J. Plate tectonics of the ancestral Rocky Mountains: Geology (Boulder), Vol. 9, No. 1, p. 10-15, sketch maps, 60 ref., January 1981.

Knepper, D. H. see Lee, K.

Knight, David Cooper. Stratigraphy and mineralogy of a zinc-rich sillimanite gneiss near Maysville, Chaffee County, Colorado: 94 p., Master's, 1981, Univ. of Manitoba, Winnipeg, MB, Canada. Knight, J. D. see Orth, C. J.

- Knudsen, Walter I., Jr.; and Danielson, Jeris A. A discussion of legal and institutional constraints on energy-related water development in the Yampa River basin, Colorado: 20 p., illus. (incl. 2 tables, sketch maps), 14 ref., December 1977. (Rep. No. 14-08-001-15075) available from: Colo. Dep. Nat. Resour., Div. Water Resour., Denver, CD, United States. Funded by U. S. Geol. Surv. for Yampa River Basin Assessment.
- Knutson, Carroll F. Oil shale: in World energy developments, 1980 (Anonymous), AAPG Bulletin, Vol. 65, No. 10, p. 2283-2289, sketch maps, 11 ref., October 1981.

Ko, H. Y. see Sture, S.

Koch, G. S., Jr. see Howarth, R. J.

- Koch, George S., Jr.; Howarth, Richard J.; and Schuenemeyer, John H. Uranium resource assessment through statistical analysis of exploration geochemical and other data; final report: 145 p., illus. (incl. 30 tables, geol. sketch map), 115 ref., February 1981. (Rep. No. GJBX-140-81) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.
- Koch, George S., Jr.; Howarth, Richard J.; Schuenemeyer, John H.; et al. Uranium resource assessment through statistical analysis of exploration geochemical and other data: in Symposium on resource evaluation, Economic Geology and the Bulletin of the Society of Economic Geologists, Vol. 76, No. 5, p. 1056-1066, illus. (incl. 4 tables, geol. sketch map), 28 ref., August 1981.
- Koch, George S., Jr.; Howarth, Richard J.; and Schuenemeyer, John H. Uranium resource assessment through statistical analysis of exploration, geochemical, and other data; final report: 145 p., illus. (incl. 30 tables, geol. sketch map), 115 ref., February 1981. (Rep. No. GJBX-140-81) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.

Kocis, D. E. see Johnson, V. C.

- Kohlstedt, D. L.; and Bird, J. M. Stress analysis of deeply eroded analogs of the San Andreas Fault (a renewal): Open-File Report (United States Geological Survey. 1978), No. 81-0900, 11 p., 14 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Kohlstedt, D. L.; and Bird, J. M. Stress analysis of a deeply eroded analog of the San Andreas Fault, California: Open-File Report

(United States Geological Survey. 1978), No. 81-0899, 11 p., illus., 14 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

- Kolenbrander, Lawrence Gene. A method of evaluating landform classification systems for renewable resource assessment and planning: 223 p., Doctoral, 1981, Colorado State Univ., Fort Collins, CO. available from: Univ. Microfilms.
- Kolmer, Joseph R.; and Anderson, Gerald A. Installation restoration of Rocky Mountain Arsenal; Part I, Pilot containment operations: variously paginated, July 1977. available from: Dep. Army, Off. Proj. Manager, Chem. Demilizarization Install. Restoration, Aberdeen Proving Ground, MD, United States. Final environmental impact statement.
- Korth, William W. Metadjidaumo (Eomyidae, Rodentia) from Colorado and Wyoming: Journal of Paleontology, Vol. 55, No. 3, p. 598-602, illus. (incl. table), 18 ref., May 1981.

Kovschak, Anthony A., Jr. see Thamm, John K.

- Krause, David. Multituberculates from the Wasatchian land-mammal age, early Eocene, of western North America: Journal of Paleontology, Vol. 56, No. 2, Part 1, p. 271-294, illus. (incl. 9 tables), 43 ref., March 1982.
- Krivanek, Connie M. New fields and exploration drilling, Paradox Basin, Utah and Colorado: in Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 77-81, sketch maps, 5 ref., 1981.

Krusi, Alan see McGuire, Robin K.

- Kuhn, Gerhard. Statistical summaries of water-quality data for two coal areas of Jackson County, Colorado: Dpen-File Report (United States Geological Survey. 1978), No. 82-0121, 27 p., 9 tables, sketch maps, 13 ref., 1982. available from: U. S. Geol. Surv., Dpen-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Kunkel, Robert P.; Reese, Douglas L.; and Elias, David W. Developments in Four Corners intermountain area in 1967: AAPG Bulletin, Vol. 52, No. 6, p. 1042-1046, illus. (incl. 3 tables), June 1968.
- Ladwig, L. R. Coking coals of western Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 249-254, illus. (incl. 3 tables, sects., geol. sketch maps), 16 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Ladwig, L. R. see also Rogers, W. P.

- Laferriere, Alan Price. Investigation of the Carlile-Niobrara unconformity (Upper Cretaceous) in northeastern New Mexico and southeastern Colorado: Master's, 1981, Indiana Univ., Bloomington, IN.
- Langston, David J. The geology and geochemistry of the northeasterly gold veins, Sunnyside Mine, San Juan County, Colorado: Master's, 1979, Colorado School of Mines, Golden, CO.
- Laronne, J. B.; and Shen, H. W. The effect of erosion on solute pickup from Mancos Shale hillslopes, Colorado, U.C.A.: Journal of Hydrology, Vol. 59, No. 1-2, p. 189-207, October 1982.
- Larsen, Lynn S. Soil survey of El Paso County area, Colorado: U. S. Dep. Agric., Soil Conserv. Serv., Washington, DC, United States, 212 p., illus. (incl. 17 tables; soils maps 1:24,000; colored soils map 1:380,160), 4 ref., June 1981. (Publ. in coop. with Colo. Agric. Exp. Stn.).
- Larsen, Roy J. Soil survey of Yuma County, Colorado: U. S. Dep. Agric., Soil Conserv. Serv., Washington, DC, United States, 136 p., illus. (incl. 17 tables; soils maps 1:24,000; colored soils maps 1:316,800), 8 ref., April 1981. (Publ. in coop. with Yuma Soil Conserv. Dist.; Colo. Agric. Exp. Stn.).
- Larson, E. E. Selective destructive demagnetization; another microanalytic technique in rock magnetism: Geology (Boulder), Vol. 9, No. 8, p. 350-355, illus. (incl. 1 table), 9 ref., August 1981.
- Larson, E. E.; and Amini, M. Hassan. Fission-track dating of the Green Mountain kimberlite diatreme, near Boulder, Colorado: The Mountain Geologist, Vol. 18, No. 1, p. 19-22, 1 table, sketch map, 25 ref., January 1981. 367 m.y., 77 m.y.
- Larson, E. E.; Walker, T. R.; Patterson, P. E.; et al. Paleomagnetism of the Moenkopi Formation, Colorado Plateau; basis for long-term model of acquisition of chemical remanent magnetism in red beds: JGR. Journal of Geophysical Research. B, Vol. 87, No. 2, p. 1081-1106, illus. (incl. 1 table, sketch maps), 29 ref., February 10, 1982.
- Larson, Edwin E. see Walker, Theodore R.
- Laughon, Bob. Generic aspects of salt repositories: *in* Geological disposal of nuclear waste; 19th annual symposium (Anonymous), Geological Disposal of Nuclear Waste, No. 19, p. 59-61, 1979.
- Lauth, Robert see Baars, Don L.
- Lazaro, Rogelio Cruz. Adaptive real-time streamflow forecasting model for hydrosystem operational planning: 230 p., Doctoral, 1981,

Colorado State Univ., Fort Collins, CO. available from: Univ. Microfilms.

- Learned, Elizabeth A. The hanging flume of Dolores River canyon, Montrose County, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 337, 3 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Lee, K.; Epis, R. C.; Baars, D. L.; et al. Supplemental road log No. 1; Montrose to Durango, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 48-63, illus. (incl. sects., geol. sketch maps), 1981. New Mexico Geological Society; Thirty-second field conference.

Lee, Myung W. see Ryder, Robert T.

- Lee, S. Y.; Jackson, M. L.; and Brown, J. L. Micaceous vermiculite, glauconite, and mixed-layered kaolinite-montmorillonite examination by ultramicrotomy and high resolution electron microscopy: *in* Proceedings of the 40th annual meeting of the Soil Science Society of America (Anonymous), Proceedings - Soil Science Society of America, Vol. 39, No. 4-6, p. 793-799, illus., 28 ref., 1975.
- Leenheer, Jerry A. Classification and fractionation of organic solutes in natural waters: *in* Organic substances in water (Greeson, Phillip E., editor), Geological Survey Circular, No. 0848-C, p. 11-19, 4 anals., 2 tables, 13 ref., 1981. Briefing papers on water quality.

Lennox, W. C. see Soares, E. F.

Leon, Herman I. Comparative analysis of nine selected oil shale properties: in Thirteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, No. 13, p. 26-34, illus. (incl. 5 tables, sketch maps), August 1980.

Leonard, R. B. see Helgesen, J. O.

Lepper, C. M. see Duff, B. M.

Lesh, John G. see Anderson, David L.

- Leventhal, J. S. (investigator). Organic geochemistry of uranium in the Grants mineral belt [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 43, 1981 [1982].
- Lewis, A. E. Dil shale; a framework for development: *in* Thirteenth oil shale symposium proceedings (Gary, James H., editor), Dil Shale Symposium Proceedings, No. 13, p. 232-237, illus. (incl. 1 table, sketch maps), 1 ref., August 1980.

Lin, Wunan. Mechanical behavior of Mesaverde shale and sandstone at high pressure: *in* Proceedings of the 1981 SPE/DDE symposium on low permeability gas reservoirs (Bixel, Harold, chairperson), Soc. Pet. Eng. AIME, Denver, CO, United States, p. 67-79, illus. (incl. 4 tables), 16 ref., 1981. SPE/DDE 9835.

Lindberg, F. A. see Reitsema, R. H.

Lindermann, J. W. see Weiland, E. F.

Lindsay, W. L. see Vlek, P. L. G.

- Lindstrom, Linda Jane. Stratigraphy of the South Platte Formation (Lower Cretaceous), Eldorado Springs to Golden, Colorado, and channel sandstone distribution of the J Member: Master's, 1979, Colorado School of Mines, Golden, CD.
- Lipman, Peter W. Volcano-tectonic setting of Tertiary ore deposits, southern Rocky Mountains: *in* Relations of tectonics to ore deposits in the southern Cordillera (Dickinson, William R., editor; *et al.*), Arizona Geological Society Digest, Vol. 14, p. 199-213, illus. (incl. geol. sketch map), 100 ref., 1981.
- Little, J. R.; and Bauer, D. P. Characterization of floodflows along the Arkansas River without regulation by Pueblo Reservoir, Portland to John Martin Reservoir, southeastern Colorado: Water-Resources Investigations, No. PB-81 216 632 (WRI 80-97), 42 p., 1980 [1981]. available from: NTIS, Springfield, VA, United States.
- Livingston, R. K. Rainfall-runoff modeling and preliminary regional flood characteristics of small rural watersheds in the Arkansas River basin in Colorado: Water-Resources Investigations, No. PB-81 224 313 (WRI 80-112), 48 p., 1981. available from: NTIS, Springfield, VA, United States.

Lochmann, Mark see Schenewerk, Philip Andrew

- Lohman, S. W. The geologic story of Colorado National Monument: Geological Survey Bulletin (Washington), No. 1508, 142 p., 1981.
- Lohman, S. W. Ancient drainage changes in and south of Unaweep Canyon, southwestern Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 137-143, illus. (incl. sketch maps), 27 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Longmire, Patrick A. see Hynes, Jeffrey L.

-- see Repplier, F. N.

Lowry, R. K. see Howarth, R. J.

Lowry, Roy K. see Koch, George S., Jr.

- Luckey, R. R.; Gutentag, E. D.; and Weeks, J. B. Water-level and saturated-thickness changes, predevelopment to 1980, in the High Plains Aquifer in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming: Hydrologic Investigations Atlas - U. S. Geological Survey, No. HA-0652, 2 sheets, hydrogeol. maps 1:2,500,000, 1981.
- Ludington, Steve. The Redskin Granite; evidence for thermogravitational diffusion in a Precambrian granite batholith: *in* Granites and rhyolites (Anonymous), JGR. Journal of Geophysical Research. B, Vol. 86, No. 11, p. 10423-10430, illus. (incl. 4 tables), 22 ref., November 10, 1981.
- Ludington, Steve; and Ellis, C. E. Mineral resource potential of the Hunter-Fryingpan Wilderness and the Porphyry Mountain wilderness study area, Pitkin County, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-1236-D, 1 sheet, econ. geol map 1:50,000, 1981
- Ludington, Steve; and Yeoman, R. A. Geologic map of the Hunter-Fryingpan wilderness area and the Porphyry Mountain wilderness study area, Pitkin County, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-1236-A, 1 sheet, geol. map 1:50,000, 1980 [1981].

Ludlam, John R. see Goodknight, Craig S.

Ludwick, A. E. see Fixen, P. E.

- Luedke, R. G.; and Burbank, W. S. Geologic map of the Uncompany (Ouray) mining district, southwestern Colorado: U. S. Geol. Surv., Misc. Invest. Ser., No. I-1247, 1 sheet, geol. map 1:12,000, 1981.
- Luft, S. J.; and Thoen, W. L. Measured sections of the Browns Park Formation (Miocene) in Moffat County, Colorado: Dpen-File Report (United States Geological Survey. 1978), No. 81-0171, 37 p., sketch map, 5 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CD, United States.

Lukas, Joseph R. see Kirk, Cheryl L.

- Maarouf, A. M.; and Johnson, V. C. Lamar Quadrangle, Colorado and Kansas: 17 p., illus. (incl. geol. sketch maps), 54 ref., March 1982. (Rep. No. GJQ-016(82)) available from: Bendix Field Eng. Corp., Grand Junction, CD, United States. National Uranium Resource Evaluation Program; appendix on microfiche.
- Maassen, Larry W.; Sandoval, Walter F.; Muller, Marcia; et al. Detailed uranium hydrogeochemical and stream sediment reconnaissance data release for the eastern portion of the Montrose NTMS Quadrangle, Colorado, including concentrations of forty-five additonal elements: Informal

Report - Los Alamos Scientific Laboratory, No. 8482, 208 p., illus. (incl. tables; site location map 1:250,000), 6 ref., January 1981. (Rep. No. GJBX-105-81) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program.

Macdonell, Carolyn J. see Shannon, Spencer S., Jr.

MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 75-80, charts, sect., sketch map, 33 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Madole, R. F. Possible origins of till-like deposits near the summit of the Front Range in north-central Colorado: Geological Survey Professional Paper, No. 1243, 31 p., illus. (incl. 5 tables, geol. sketch maps), 69 ref., 1982.

Madson, Michael E. see Theis, Nicholas J.

Mahaney, W. C. Paleoclimate reconstructed from Paleosols; evidence from the Rocky Mountains and East Africa: in Quaternary paleoclimate (Mahaney, W. C., editor), Geo Abstracts, Norwich, United Kingdom, p. 227-247, 5 tables, sect., sketch maps, 42 ref., 1980. Fourth conference on Quaternary research.

Maher, L. J., Jr. Pollen evidence suggests that climatic changes in the Colorado Rockies during the last 5000 years were out of phase with those in the northeastern United States [abstr.]: in Ninth congress of the International Union for Quaternary Research; abstracts (Anonymous), Congress of the International Union for Quaternary Research, No. 9, p. 227, 1973.

Major, Maurice W. see Reeves, James J.

Malcolm, R. L. see Robson, S. G.

Malenka, W. T. see Palowitch, E. R.

Mann, P. G. see Ellis, S. R.

Mapel, W. J. U.S. Geological Survey projects in western coal geology [abstr.]: in Coal geology and the future; symposium abstracts and selected references (Meissner, C. R., Jr., editor; et al.), Geological Survey Circular (Washington, D. C.), No. 757, p. 19, 2 ref., 1977.

Mapp, Harry see Warren, John

Markgraf, Vera; and Scott, Louis. Lower timberline in central Colorado during the past 15,000 yr: Geology (Boulder), Vol. 9, No. 5, p. 231-234, chart, sketch map, 25 ref., May 1981.

Markley, D. E.; Munson, S. D.; and Dougan, P. M. Geohydrology and surface water hydrology programs of the Equity/DDE BX In Situ Oil Shale Project, Rio Blanco County, Colorado: in Thirteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, No. 13, p. 376-384, illus. (incl. 2 tables, sketch map), 11 ref., August 1980.

Martell, Calvin J. see Maassen, Larry W.

-- see Shannon, Spencer 5., Jr.

-- see Warren, Richard G.

- Martin, R. A. (investigator). Geophysical studies in the Powderhorn Wilderness Study Area, Colorado [abstr.]: in Geological Survey research 1981, Geological Survey Professional Paper (Washington, D.C.), No. 1275, p. 3, 1981 [1982].
- Martin, Randolph J., III. Is piezomagnetism influenced by microcracks during cyclic loading?: J. Geomagn. Geoelec., Vol. 32, No. 12, p. 741~755, illus., 13 ref., 1980.
- Martinez-Hernandez, Enrique. Palinologia del carbon y ambientes de deposito en el Cretacico superior, Noroeste de Colorado, EUA [Palynology of the coal and depositional environments in the Upper Cretaceous, northwestern Colorado, United States]: in III coloquio sobre paleobotanica y palinologia; memoriasin Third colloquium on paleobotany and palynology; memoirs (Sanchez Martinez, Fernando, prefacer), Memorias - Coloquio Sobre Paleo-Botanica y Palinologia, No. 3, p. 201-212, illus. (incl. strat. col.), 13 ref., 1980.

Marvin, R. F. see Bryant, Bruce

Maslyn, R. Mark see Pisarowicz, James A.

- Mathias, J. Paul. Determining subsurface stratigraphic position by fluid-entry analysis during air drilling: JPT. Journal of Petroleum Technology, Vol. 24, No. 10, p. 1222, October 1972.
- Mayers, D. The Henderson Mine: Mining Magazine, Vol. 121, No. 4, p. 306-307, illus., October 1969.

Mc Inteer, Carlotta see Warren, Richard G.

McCallum, M. E. Infrared detection of kimberlitic diatremes in northern Colorado and southern Wyoming: Contributions to Geology, Vol. 13, No. 1 (Summer), p. 17-18, 11 ref., 1974.

McCallum, M. E. see also Smith, C. B.

McCallum, Malcolm E. see Carlson, Jon A.

McCarley, Ann Boggs. Metamorphic terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain: Journal of Sedimentary Petrology, Vol. 51, No. 4, p. 1267-1276, illus. (incl. geol. sketch maps), 42 ref., December 1981.

McCarn, D. W. see Johnson, V. C.

- McCarthy, Kevin P. Ouray, Colorado; resource characteristics and future plans: in Geothermal energy; the international success story (Edmiston, R. C., chairperson), Transactions - Geothermal Resources Council, Vol. 5, p. 545-548, 1 table, sketch map, 12 ref., 1981, Geothermal Resources Council, 1981 annual meeting.
- McCarthy, Kevin P. see also Pearl, Richard Howard

McCaslin, John C. 'Sky-high basin' getting another look: Oil and Gas Journal, Vol. 79, No. 15, p. 147-149, sketch map, April 13, 1981.

- McCaslin, John C. Natomas plans deep Colorado wildcat: Oil and Gas Journal, Vol. 79, No. 23, p. 187-188, June 8, 1981.
- McCaslin, John C. Seismic mapping key to Paradox Basin: Oil and Gas Journal, Vol. 79, No. 28, p. 177-178, sketch map, July 13, 1981.
- McCaslin, John C. Possible gas find could heat up activity in Raton Basin: Oil and Gas Journal, Vol. 79, No. 35, p. 95-96, sketch map, August 31, 1981.
- McCaslin, John C. Drilling in Colorado continues fast pace: Dil and Gas Journal, Vol. 79, No. 33, p. 181-183, sketch map, August 17, 1981.
- McCaslin, John C. New wildcatting developing in southeastern, eastern Colorado: Dil and Gas Journal, Vol. 79, No. 36, p. 169-171, sketch map, September 7, 1981.
- McCaslin, John C. Denver Basin activity continues fast pace: Oil and Gas Journal, Vol. 79, No. 51, p. 101-102, sketch map, December 21, 1981.
- McCaslin, John C. Colorado's Niobrara still holds interest: Dil and Gas Journal, Vol. 79, No. 49, p. 231-233, sketch map, December 7, 1981.
- McCaslin, John C. San Juan Basin gas area yields oil find: Dil and Gas Journal, Vol. 80, No. 20, p. 123-124, sketch map, May 17, 1982.
- McCaslin, John C. Mississippian play advancing in Colorado area: Dil and Gas Journal, Vol. 80, No. 34, p. 157-158, sketch map, August 23, 1982.

McClellan, J. F. see Gould, W. D.

- McCray, Kevin. The Ogallala; half full or half empty?: Water Well Journal, Vol. 36, No. 7, p. 53-62, illus., July 1982.
- McCulla, Michael. The genesis of the Los Ochos uranium deposits, Saguache County, Colorado: Master's, 1980, Univ. of Nevada, Reno, NV.

McGrew, L. W. see Bryant, Bruce

McGuire, Robin K.; Krusi, Alan; and Oaks, Sherry D. The Colorado earthquake of November 7, 1882; size, epicentral location, intensities, and possible causative fault: The Mountain Geologist, Vol. 19, No. 1, p. 11-18, illus. (incl. 2 tables), 9 ref., January 1982.

McHugh, S. L. see Murri, W. J.

McKell, C. M. see Richardson, Steven G.

McLane, Michael. Upper Cretaceous coastal deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale: AAPG Bulletin, Vol. 66, No. 1, p. 71-90, illus. (incl. 1 table, sects., sketch maps), 16 ref., January 1982.

McMillian, Nancy see Dungan, Michael A.

McPeek, L. A. Eastern Green River basin; a developing giant gas supply from deep, overpressured Upper Cretaceous sandstones: AAPG Bulletin, Vol. 65, No. 6, p. 1078-1098, illus. (incl. 2 tables, sketch maps), 4 ref., June 1981.

McWhorter, D. B. see Glas, T. K.

Mehnert, H. H. see Bryant, Bruce

Mehran, M.; Narasimhan, T. N.; and Fox, J. P. Hydrogeologic consequences of the modified in situ retorting process, Piceance Creek Basin, Colorado: Dil Shale Symposium Proceedings, No. 14, p. 388-400, illus. (incl. 3 tables, sketch map), 14 ref., August 1981.

Meredith, T. S. see Borman, R. G.

Merewether, E. A.; and Cobban, W. A. (investigators). Transgressions and regressions of Cretaceous epeiric sea in Colorado, North Dakota, South Dakota, and Wyoming [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 35, 1981 [1982].

Merrell, Harvey see Molenaar, C. M.

Meyer, R. F. see Hildebrand, R. T.

Meyer, Randall. Western states energy resource development: Mines Magazine, Vol. 71, No. 6, p. 3-7, June 1981.

Meyer, Richard T.; Coe, Barbara A.; and Dick, Jay D. An appraisal of the use of geothermal energy in state-owned buildings in Colorado: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, No. 14, 65 p., illus. (incl. 15 tables), 37 ref., 1981. Report by West. Energy Plann., Denver, Colo., for the Colo. Geol. Surv.

Meyers, W. T. see Weiland, E. F.

Miller, J. B. see Baker, L. A.

Miller, Marvin E.; and Donivan, Stephen. Final report on PCB usage at the Grand Junction area office facility: 57 p., illus., June 1982. (Rep. No. GJBX-123(82)) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States.

Minor, Michael M. see Warren, Richard G.

Missouri River Basin Commission. Missouri River Basin Water Resources Management Plan; a comprehensive, coordinated joint plan for water and related land resources development, management, and conservation final environmental impact statement: 469 p., illus. (incl. sketch maps), May 1980. available from: Mo. River Basin Comm., Omaha, NE, United States.

Mitchell, J. see Snyder, G. L.

Mitchell, James R. In search of gold: Jewelry Making Gems & Minerals, No. 524, p. 56, 64-66, illus. (incl. sketch maps), June 1981.

Moench, R. H. see Tweto, Ogden

- Molenaar, C. M. Mesozoic stratigraphy of the Paradox Basin; an overview: *in* Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 119-127, sect., geol. sketch map, 38 ref., 1981.
- Molenaar, C. M.; Craig, L. C.; Chenoweth, W. L.; et al. First day; Road log from Grand Junction to Whitewater, Unaweep Canyon, Uravan, Paradox Valley, La Sal, Arches National Park, and return to Grand Junction via Crescent Junction, Utah: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 1-16, illus. (incl. geol. sketch maps), 1981. New Mexico Geological Society; Thirty-second field conference.
- Molenaar, C. M.; Hite, Robert; Smith, K. T. (leaders); et al. Second day; road log from Telluride, Colorado to Moab, Utah, via Paradox Valley and Lisbon Valley: *in* Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 263-274, illus. (incl. sect., sketch map), 1981.
- Moore, D. W.; and Scott, G. R. Generalized surficial geologic map of the Basin Mountain

Quadrangle, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-1306, 1 sheet, surficial geol. map 1:24,000, 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Moore, D. W. see also Scott, G. R.

Morel-Seytoux, H. J.; Daly, C. J.; Illangasekare, T.; et al. Design and merit of a river-aquifer model for optimal use of agricultural water: in Water for survival (Beard, Leo R., editor), J. Hydrol., Vol. 51, No. 1-4, p. 17-27, illus. (incl. sketch maps), 9 ref., May 1981. International Water Resources Association, Third world congress on water resources.

Morlan, Richard E. see Stanford, Dennis

- Morris, Armand V.; and Stanley, Daniel R. Rock Springs Quadrangle, Wyoming and Colorado: 42 p., illus. (incl. 5 tables; econ. geol. maps 1:500,000; geol. map 1:500,000), 84 ref., July 1982. (Rep. No. PGJ/F-080(82)) available from: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CD, United States. National Uranium Resource Evaluation Program; includes microfiche.
- Morris, Scott E. Topoclimatic factors and the development of rock glacier facies, Sangre de Cristo Mountains, southern Colorado: Arctic and Alpine Research, Vol. 13, No. 3, p. 329-338, illus. (incl. 2 tables, sketch map), 31 ref., August 1981.
- Muhaimeed, Ahmad Saleh. Soil property relationships on selected landscape segments under cultivated vs. rangeland conditions: 190 p., Doctoral, 1981, Colorado State Univ., Fort Collins, CO. available from: Univ. Microfilms.
- Mullens, Marjorie C. Bibliography of the geology of the Green River Formation, Colorado, Utah, and Wyoming, to March 1, 1977: Geological Survey Circular, No. 754, 52 p., 1977.

Muller, Marcia see Maassen, Larry W.

Munson, S. D. see Markley, D. E.

Murel-Seytoux, H. J.; Illangasekare, T.; Bittinger, M. W.; et al. Potential use of a stream-aquifer model for management of a river basin; case of the South Platte River in Colorado: in New developments in river basin management; proceedings of specialised conference (Jenkins, S. H.), Water Science and Technology, Vol. 13, No. 3, p. 175-187, illus. (incl. sketch map), 7 ref., 1981.

Murphy, Jack A. see Jacobson, Mark I.

Murray, D. Keith. Upper Cretaceous (Campanian) coal resources of Western Colorado: *in* Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; *et al.*), Guidebook - New Mexico Geological Society, No. 32, p. 233-240, illus. (incl. 2 tables, sects., sketch map), 12 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Murray, K. see Bretz, T. E.

- Murri, W. J.; Curran, D. R.; Shockey, D. A.; et al. Computer simulation of fracture in small scale borehole experiments in oil shale: in High-pressure science and technology; Vol. 2, Applications and mechanical properties (Timmerhaus, Klaus D., editor; et al.), Proceedings of the AIRAPT International High Pressure Conference, No. 6, p. 465-482, illus. (incl. 2 tables), 8 ref., 1979. Sixth AIRAPT international high pressure conference.
- Mustard, M. H.; and Cain, Doug. Hydrology and chemical quality of ground water in Kiowa County, Colorado: Dpen-File Report (United States Geological Survey. 1978), No. 81-1023, 59 p., illus., 1981. available from: U. S. Geol. Surv., Water Resour. Div., Denver, CO, United States. Water-resources investigations.
- Mutschler, Felix E.; Ernst, David R.; Gaskill, David L.; et al. Igneous rocks of the Elk Mountains and vicinity, Colorado; chemistry and related ore deposits: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 317-324, illus. (incl. 8 anals., 4 tables, geol. sketch map), 37 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Mutschler, Felix E. see also Gaskill, D. L.

- Nadeau, Paul H.; and Reynolds, Robert C., Jr. Burial and contact metamorphism in the Mancos Shale: Clays and Clay Minerals, Vol. 29, No. 6, p. 249-259 (incl. French, German, French sum.), illus., 51 ref., 1981.
- Nadler, C. T.; and Schumm, S. A. Metamorphosis of South Platte and Arkansas rivers, eastern Colorado: Physical Geography, Vol. 2, No. 2, p. 95-115, illus. (incl. 4 tables), 42 ref., December 1981.

Naeser, C. W. see Bryant, Bruce

Narasimhan, T. N. see Mehran, M.

- Nash, J. T. (investigator). Jasperoid as a possible indicator of uranium source, Pitch mine, Colorado [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 48, 1981 [1982].
- Nash, J. Thomas. Geology of dolomite-hosted uranium deposits at the Pitch Mine, Saguache County, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 191-198, illus. (incl. 2)

tables, sects., sketch maps), 29 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Nelson, Carl E.; and Gallagher, James R. L. Proterozoic origins of uranium mineralization in the Colorado Front Range: Economic Geology and the Bulletin of the Society of Economic Geologists, Vol. 77, No. 5, p. 1221-1239, illus. (incl. 1 table, geol. sketch map), 31 ref., August 1982.

Nelson, John D. see Porter, Andrew A.

Nervick, K. H. see Christopherson, K. R.

Nickum, Edward see Hall, D. C.

Nielsen, Roger see Dungan, Michael A.

Noon, Patrick L. Surface to subsurface stratigraphy of the Dakota Sandstone (Cretaceous) and adjacent units along the eastern flank of the San Juan Basin, New Mexico and Colorado: 133 p., Master's, 1980, Bowling Green State Univ., Bowling Green, OH.

Norman, Robert see Baars, Don L.

Nuccio, V. F.; and Johnson, R. C. Map showing drill stem test and perforation recoveries of the Upper Cretaceous Mesaverde Group, Piceance Creek basin, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-1359, 1 sheet, map 1:250,000, 1981 [1982].

Nuter, J. A. see Condie, K. C.

Nutt, C. J. Geologic map and coal deposits of the western part of Ninemile Gap Quadrangle and the southern part of Axial Quadrangle, Moffat and Rio Blanco counties, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0012, 3 sheets, charts, geol. map 1:24,000, 4 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., Branch Distrib., Denver, CO, United States.

Oaks, Sherry D. see McGuire, Robin K.

Ochs, Allan M.; and Cole, Rex D. Comparative petrology of Tertiary sandstones of southern Piceance Creek basin, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 219-228, illus. (incl. sects., sketch maps), 34 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Ochler, L. D. see Dewey, R. S.

Olhoeft, Gary R.; and Scott, James H. Nonlinear complex resistivity logging: *in* Transactions of the SPWLA twenty-first annual logging symposium (Lang, William H., president), Transactions of the SPWLA Annual Logging Symposium, No. 21, p. T1-T18, illus., July 11, 1980. **Olinger, B. Oil shales under dynamic stress**: in High-pressure science and technology; Vol. 2, Applications and mechanical properties (Timmerhaus, Klaus D., editor; *et al.*), Proceedings of the AIRAPT International High Pressure Conference, No. 6, p. 303-316, illus. (incl. 1 table), 8 ref., 1979. Sixth AIRAPT international high pressure conference.

Olson, Earl P. see DeGraff, Jerome V.

Olson, J. C. see Hedlund, D. C.

- **Disson, W. A. Stress relaxation in oil shale:** in The state of the art in rock mechanics (Summers, David A., chairperson), Proceedings - Symposium on Rock Mechanics, No. 21, p. 517-522, illus., 13 ref., September 1980.
- **Diyphant, Greg A.** Allometry and cirque evolution: Geological Society of America Bulletin, Vol. 92, No. 9, p. I 679-I 685, illus. (incl. 4 tables, sketch maps), 34 ref., September 1981.
- D'Neill, J. M. Geologic map of the Mount Richthofen Quadrangle and the western part of the Fall River Pass Quadrangle, Grand and Jackson counties, Colorado: Miscellaneous Investigations Series - U. S. Geological Survey, No. I-1291, 1 sheet, geol. map 1:24,000, 1981.

O'Rourke, J. A. see Peterson, E. J.

- Orth, C. J.; Gilmore, J. S.; Knight, J. D.; et al. Iridium abunance measurements across the Cretaceous-Tertiary boundary in the San Juan and Raton basins of northern New Mexico [abstr.]: in Papers presented to the Conference on large body impacts and terrestrial evolution; geological, climatological, and biological implications (Anonymous), LPI Contribution, No. 449, p. 42, 1981.
- O'Sullivan, R. B. Stratigraphic sections of some Jurassic rocks from near Moab, Utah, to Slick Rick, Colorado: U. S. Geol. Surv., Oil Gas Invest. Charts, No. OC-0107, 1 sheet, sects., 1981.
- O'Sullivan, R. B. Histograms showing oil-shale yield in two core holes in the No Name Ridge Quadrangle of western Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-1299, 5 p., illus. (incl. sketch map), 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- O'Sullivan, R. B.; Wahl-Pierce, Frances; and Arbelbide, S. J. Preliminary geologic map of the McCarthy Gulch Quadrangle, Rio Blanco and Garfield counties, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-0860, 1 sheet, geol. map 1:24,000, 1981.

O'Sullivan, R. B. see also Smith, M. C.

- Ott, H. L. (compiler). Field trip guide; Keystone to Denver: Am. Assoc. Stratigr. Paleontol., United States, unpaginated, illus., 1980. Guidebook for AASP annual meeting in Keystone, CD, on Oct. 18, 1980; individual papers are not cited separately.
- Otton, James K. Uranium and trace elements as an exploration tool [abstr.]: *in* Abstracts of the 1975 uranium and thorium research and resources conference (Craig, Lawrence C., editor; *et al.*), p. 34, 1975. (Rep. No. 75-595) *available from:* U. S. Geol. Surv., Tacoma, WA, United States.
- Otton, James K. Uranium and trace elements in stream sediments as an exploration tool: 1976. (Rep. No. 76-220) available from: U. S. Geol. Surv., Tacoma, WA, United States. Open-file report.
- Owen, T. E.; and Suhler, S. A. Subsurface void detection using surface resistivity and borehole electromagnetic techniques: *in* Technical papers, Fiftieth annual international meeting and exposition (Anonymous), Technical Papers - Annual International Meeting and Exposition, Society of Exploration Geophysicists, No. 50, p. 3427-3448, illus. (incl. sketch maps), 1980.

Pacer, J. C. see Bell, M. W.

Padgett, E. T. see Frenzel, P. F.

- Palmerton, J. B.; and Warriner, J. B. Postshot in situ material property tests at the Mixed Company site, Colorado: Miscellaneous Paper S (Vicksburg), No. S-74-8, 67 p., illus., 4 ref., May 1974. Sponsored by the Defense Nuclear Agency.
- Palowitch, E. R.; and Malenka, W. T. Hydraulic mining research; a progress report: Mining Congress Journal, Vol. 50, No. 9, p. 66-73, illus., 4 ref., September 1964.

Park, Sam-Kuen see Herrmann, Robert B.

Parker, R. S. see Turk, J. T.

Patterson, P. E. see Larson, E. E.

Peacor, Donald R. see Rouse, Roland C.

- Pearl, Richard Howard. Colorado's hydrothermal resource base; an assessment: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, No. 6, 144 p., illus. (incl. 6 tables, geol. sketch maps), 100 ref., 1979.
- Pearl, Richard Howard. Hydrothermal resources of western Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 333-335, 1 table, sketch map, 24 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

- Pearl, Richard Howard; Zacharakis, Ted G.; Repplier, Frank N.; et al. Bibliography of geothermal reports in Colorado: Bulletin -Colorado Geological Survey, Department of Natural Resources, No. 44, 24 p., 1981.
- Pearl, Richard Howard; Zacharakis, Ted G.; and Repplier, Frank R. A summary of DOE funded geothermal resource assessment efforts in Colorado by the Colorado Geological Survey: in Geothermal Direct Heat Program; Glenwood Springs technical conference proceedings; Volume 1, Papers presented; State Coupled Geothermal Resource Assessment Program (Ruscetta, Carl A., editor; et al.), p. 100-104, sketch map, May 1981. (Rep. No. DDE/ID/12079-39) (Rep. No. ESL-59) available from: Univ. Utah Res. Inst., Earth Sci. Lab., Salt Lake City, UT, United States. Geothermal energy exploration and resource assessment technical conference.
- Pearl, Richard M. The dinosaur menagerie: Earth Science, Vol. 28, No. 6, p. 299-301, illus., December 1975.
- Pearl, Richard M. The great quarry: Earth Science, Vol. 28, No. 4, p. 207-209, illus., August 1975.
- Petersen, Kenneth Lee. 10,000 years of climatic change reconstructed from fossil pollen, La Plata Mountains, southwestern Colorado: 211 p., Doctoral, 1981, Washington State Univ., Pullman, WA. available from: Univ. Microfilms.
- Peterson, E. J.; O'Rourke, J. A.; and Wagner, P. Correlation of mineralogy and trace element leaching behavior in modified in situ spent shales from Logan Wash, Colorado: in Process mineralogy; extractive metallurgy, mineral exploration, energy resources (Hausen, Donald M., editor; et al.), Am. Inst. Min. and Metall., New York, NY, United States, p. 539-554, illus. (incl. 3 tables), 11 ref., 1981. 110th AIME annual meeting, TMS-AIME Process Mineralogy Committee.
- **Petromotion.** Central Rocky Mountain region, Colorado, Utah and Wyoming: Petromotion, Denver, CD, United States, 1 sheet, colored economic geol. map, 197?.
- **Petromotion.** S.W. Denver Basin, Colorado: Petromotion, Denver, CO, United States, 1 sheet, colored econ. geol. map, 197?.
- Petromotion. Denver, Laramie, Hanna basins; Colorado and Wyoming: Petromotion, Denver, CO, United States, 1 sheet, colored econ. geol. map, 1971.
- **Petromotion**. Greater Green River basin; Wyoming and Colorado: Petromotion, Denver, CO, United States, 1 sheet, colored econ. geol. map, 1971.
- **Petromotion**. North Park Basin; Jackson and Grand counties, Colorado: Petromotion, Denver, CD, United States, 1 sheet, colored

econ. geol. map, 1973.

- Petromotion. Hugoton Field area, Colorado, Kansas, New Mexico and Oklahoma: Petromotion, Denver, CD, United States, 1 sheet, colored econ. geol. map, 1973.
- Petromotion. Denver Basin; Colorado, Wyoming, Kansas and Nebraska: Petromotion, Denver, CO, United States, 1 sheet, colored econ. geol. map, 1973.
- **Petromotion.** West central Rocky Mountain region: Petromotion, Denver, CO, United States, 1 sheet, colored econ. geol. map, 1973.
- **Petromotion**. Rocky Mountain region; oil and gas production: Petromotion, Denver, CO, United States, 1 sheet, colored econ. map, 1974.
- Petty, Patricia Curtis. Oil shale; tomorrow's answer: Mines Magazine, Vol. 71, No. 6, p. 9-14, illus., 2 ref., June 1981.

Phelps, David see Dungan, Michael A.

Picard, M. Dane see Cole, Rex D.

-- see Herr, Randy G.

Pillmore, C. L. see Orth, C. J.

- Pisarowicz, James A.; and Maslyn, R. Mark. Empirical confirmation of Curl's (1974) flow velocity calculations: *in* Proceedings of the Eighth international congress of speleology (Beck, Barry F., editor), Proceedings of the International Congress of Speleology, No. 8, p. 772-774 (incl. German sum.), illus. (incl. 2 tables, sketch map), 9 ref., 1981.
- Pitman, J. K. Isopach, structure contour, and resource maps of the R-6 oil-shale zone, Green River Formation, Piceance Creek basin, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-1069, 2 sheets, sect., maps 1:126,720, 1979. Reprint.
- Pitman, J. K. see also Dean, W. E.

Plant, J. A. see Howarth, R. J.

- Pollastro, R. M. (investigator). Reservoir properties of Niobrara Formation, Denver basin [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 35, 1981 [1982].
- Pollastro, Richard M. Authigenic kaolinite and associated pyrite in chalk of the Cretaceous Niobrara Formation, eastern Colorado: Journal of Sedimentary Petrology, Vol. 51, No. 2, p. 553-562, illus., 28 ref., June 1981.

Poole, Forrest G. see Sandberg, Charles A.

Porter, Andrew A.; and Nelson, John D. Strain controlled testing of expansive soils: *in* Proceedings of the Fourth international conference on expansive soils; Characterization and treatment of expansive soils for engineering design (Snethen, Donald R., editor), Proceedings of the International Conference on Expansive Soils, No. 4, p. 34-44, illus., 16 ref., 1980.

Potter, L. D. see Kidd, D. E.

Poundstone, David J. see Crafton, James W.

Pratt, H. R. see Swolfs, H. S.

Price, Vickey see Ullrich, Dick

- Price, W. E., Jr. (compiler). Water-resources investigations of the U. S. Geological Survey in Colorado; fiscal year 1981: Open-File Report (United States Geological Survey. 1978), No. 81-0150, 136 p., 1 table, sketch maps, index map 1:500,000, 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Prothero, Donald R.; Denham, Charles R.; and Farmer, Harlow G. Oligocene calibration of the magnetic polarity time scale: Geology (Boulder), Vol. 10, No. 12, p. 650-653, charts, 24 ref., December 1982.

Puffett, W. P. see Weir, G. W.

- Pugh, Clifford A. Hydraulic model studies of landslide-generated water waves; Morrow Point Reservoir: 53 p., illus. (incl. 3 tables), 7 ref., April 1982. (Rep. No. REC-ERC-82-9) available from: NTIS, Springfield, VA, United States.
- Radbruch-Hall, D. H.; Varnes, D. J.; and Savage, W. Z. Gravitational spreading of steep-sided ridges ("sackung") in western United States: in Section 13; The contribution of geology towards management of the environment (Jacobson, G., convener), Int. Assoc. Eng. Geol., Bull., No. 14, p. 23-35 (incl. French, English sum.), illus. (incl. sketch map), 20 ref., December 1976. 25th international geological congress.

Ranta, D. E. see White, W. H.

Ranta, Donald E. see Dowsett, Frederick R., Jr.

- Rasmussen, T. E.; and Callison, George. A new species of triconodont mammal from the Upper Jurassic of Colorado: Journal of Paleontology, Vol. 55, No. 3, p. 628-634, illus. (incl. tables, sketch map), 12 ref., May 1981.
- Rasmussen, T. E.; and Callison, George. A new herbivorous sphenodontid (Rhynchocephalia; Reptilia) from the Jurassic of Colorado: Journal of Paleontology, Vol. 55, No. 5, p. 1109-1116, illus., 17 ref., September 1981.

Ray, Daryll see Warren, John

Raymond, William H. see Sheridan, Douglas M.

Reed, J. C., Jr. (investigator). Precambrian rocks, northern Sangre de Cristo Range, Colorado [abstr.]: Geological Survey Professional Paper, No. 1275, p. 70, 1981 [1982].

Reed, T. L. see Dewey, R. S.

Reese, Douglas L. see Kunkel, Robert P.

- Reeves, James J.; and Major, Maurice W. Seismic seam waves in the coal basin of Colorado: in Technical papers, Fiftieth annual international meeting and exposition (Anonymous), Technical Papers - Annual International Meeting and Exposition, Society of Exploration Geophysicists, No. 50, p. 3159-3181, illus. (incl. strat. col.), 13 ref., 1980.
- Reheis, M. C. Geologic map and coal resources of the Easton Gulch Quadrangle, Moffat County, Colorado: U. S. Geol. Surv., Coal Invest. Map, No. C-0087, 1 sheet, geol. map 1:24,000, 1981.

Reheis, M. C. see also Hildebrand, R. T.

- Reid, Fred S.; and Berghorn, Claude E. Facies recognition and hydrocarbon potential of the Pennsylvanian Paradox Formation: *in* Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 111-117, illus. (incl. geol. sketch maps), 8 ref., 1981.
- Reif, Logan E. \$10 million in gold: Lapidary Journal, Vol. 29, No. 12, p. 2284-2287, illus., March 1976.

Reinhart, W. R. see Johnson, V. C.

Reinhart, William R. see Theis, Nicholas J.

- Reitsema, R. H.; Kaltenback, A. J.; and Lindberg, F. A. Source and migration of light hydrocarbons indicated by carbon isotopic ratios: AAPG Bulletin, Vol. 65, No. 9, p. 1536-1542, illus. (incl. 1 table), 19 ref., September 1981.
- Repplier, F. N.; and Fargo, R. L. Geothermal gradient map of Colorado: Colo. Geol. Surv., Map Ser., No. 20 (DOE/ET/28365-13), 1 sheet, geophys. surv. map 1:1,000,000, 1981.
- Repplier, F. N.; Healy, F. C.; Collins, D. B.; et al. Atlas of ground water quality in Colorado: Colo. Geol. Surv., Map Ser., No. 16, 7 sheets, 2 tables, hydrogeol. maps 1:500,000, 88 ref., 1981.

Repplier, Frank N. see Pearl, Richard Howard

Repplier, Frank R. see Pearl, Richard Howard

Rettke, Robert C. Probable burial diagenetic and provenance effects on Dakota Group clay mineralogy, Denver Basin: Journal of Sedimentary Petrology, Vol. 51, No. 2, p. 541-551, illus. (incl. sketch map), 24 ref., June 1981.

Reynolds, Robert C., Jr. see Nadeau, Paul H.

- Rice, D. D.; and Threikeld, C. N. Occurrence and origin of natural gas in ground water, southern Weld County, Colorado: Open-File Report (United States Geological Survey. 1978), No. 82-0496, 8 p., 2 tables, 10 ref., 1982. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CD, United States.
- Rice, D. D. (investigator). Indigenous biogenic gas in Niobrara Formation, eastern Denver basin [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 34-35, 1981 [1982].

Richardson, K. L. see Heistand, R. N.

Richardson, Ryden L. see Fenton, Donald M.

Richardson, Steven G.; McKell, C. M.; George, Melvin R.; et al. Weathering effects on some chemical and physical properties of retorted oil shale: Journal of Environmental Quality, Vol. 10, No. 2, p. 221-224, illus. (incl. 5 tables), 16 ref., June 1981.

Rightmire, Craig T. see Choate, Raoul

Riley, Jill K. see Anderson, Jule R.

- Rio Blanco Oil Shale Company. Rio Blanco Oil Shale Company: Tract C-a; modification to the detailed development plan; Lurgi demonstration project: variously paginated, illus. (incl. sketch maps), February 1981. available from; U. S. Geol. Surv., United States.
- Rio Blanco Oil Shale Company. Modular development phase; December 1979-November 1980; year-end report; Volume I: 513 p., illus. (incl. tables), March 31, 1981. (Rep. No. 7) available from: Rio Blanco Oil Shale Co., Aurora, CO, United States.
- Ririe, George Todd. Precambrian mineralization and tectonic framework of Fremont County, Colorado: 237 p., Doctoral, 1981, Univ. of Iowa, Iowa City, IA. available from: Univ. Microfilms.
- Ristinen, R. A. see Saether, O. M.

Robbins, L. A. see Dewey, R. S.

Robbins, Stephen L. Density determinations from borehole gravity data from a shallow lignite zone within the Denver Formation near Watkins, Colorado: Transactions of the SPWLA Annual Logging Symposium, No. 20, Vol. 2, p. JJ1-JJ20, illus. (incl. 5 tables, sketch map), 25 ref., 1979. Roberts, C. N. Fracture optimization in a tight gas play; Muddy "J" Formation, Wattenberg Field, Colorado: *in* Proceedings of the 1981 SPE/DOE symposium on low permeability gas reservoirs (Bixel, Harold, chairperson), Soc. Pet. Eng. AIME, Denver, CO, United States, p. 245-252, illus. (incl. 2 tables), 7 ref., 1981. SPE/DOE 9851.

Roberts, E. H. see Bell, M. W.

Robinson, C. S. see Wahlstrom, E. E.

-- see Warner, L. A.

- Robinson, Charles H.; and Dea, Peter A. Quaternary glacial and slope-failure deposits of the Crested Butte area, Gunnison County, Colorado: *in* Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; *et al.*), Guidebook - New Mexico Geological Society, No. 32, p. 155-163, illus. (incl. geol. sketch maps), 16 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Robson, S. G. Computer simulation of movement of DIMP-contaminated groundwater near the Rocky Mountain Arsenal, Colorado: *in* Permeability and groundwater contaminant transport (Zimmie, T. F., editor; *et al.*), ASTM Special Technical Publication = American Society for Testing and Materials Special Technical Publication, No. 746, p. 209-220, sketch maps, 4 ref., 1981.
- Robson, S. G.; and Romero, J. C. Geologic structure, hydrology, and water quality of the Dawson Aquifer in the Denver Basin, Colorado: U. S. Geol. Surv., Hydrol. Invest. Atlas, No. HA-0643, 3 sheets, hydrogeol. maps 1:250,000, 1981.
- Robson, S. G.; and Romero, J. C. Geologic structure, hydrology, and water quality of the Denver Aquifer in the Denver Basin, Colorado: Hydrologic Investigations Atlas - U. S. Geological Survey, No. HA-0646, 3 sheets, hydrogeol. map 1:500,000, 1981.
- Robson, S. G.; Romero, J. C.; and Zawistowski, Stanley. Geologic structure, hydrology, and water quality of the Arapahoe Aquifer in the Denver Basin, Colorado: Hydrologic Investigations Atlas - U. S. Geological Survey, No. HA-0647, 3 sheets, hydrogeol. maps, 1981.
- Robson, S. G.; and Saulnier, G. J., Jr. Hydrogeochemistry and simulated solute transport, Piceance Basin, northwestern Colorado: Geological Survey Professional Paper (Washington, D.C.), No. 1196, 65 p., 1981. Supersedes Open-file report 80-72.
- Robson, S. G.; Wacinski, Andrew; Zawistowski, Stanley; et al. Geologic structure, hydrology, and water quality of the Laramie-Fox Hills Aquifer in the Denver Basin, Colorado: Hydrologic Investigations Atlas -

U. S. Geological Survey, No. HA-0650, 3 sheets, hydrogeol. maps 1:500,000, 1981.

Robson, S. G.; and Malcolm, R. L. (investigators). Ground-water resources of the Denver basin [abstr.]: in Geological Survey research 1981, Geological Survey Professional Paper, No. 1275, p. 102-103, 1981 [1982].

Roedder, Edwin see Woods, T. L.

Rogers, W. P.; Ladwig, L. R.; Hornbaker, A. L.; et al. Guidelines and criteria for identification and land-use controls of geologic hazard and mineral resource areas: Special Publication - Colorado Geological Survey, No. 6, 146 p., illus. (incl. tables, sketch maps), 111 ref., 1979. Reprinted from 1974 version.

Rogers, William P. see Kirkham, Robert M.

Rohde, Byron H. Collecting in colorful Colorado: Lapidary Journal, Vol. 18, No. 1, p. 66-74, illus. (incl. sketch map), April 1964.

Romero, J. C. see Robson, S. G.

Rose, Charles Cleland. Seismic moment, stress drop, strain energy, dislocation radius, and location of seismic acoustical emissions associated with a high alpine snowpack at Berthoud Pass, Colorado: 72 p., Master's, 29 ref., 1981, Montana State Univ., Bozeman, MT.

Rosenbaum, J. G. see Larson, E. E.

Rosenlund, Gene C. see Theis, Nicholas J.

- Rountree, Russ. New discoveries, better prices, ease in regulations key in Colorado: Western Oil Reporter, Vol. 38, No. 1 (1981 forecast), p. 101-102, January 1981.
- Rountree, Russ. Bug Field discovery spurs new interest in Paradox Basin: Western Oil Reporter, Vol. 38, No. 8, p. 53-54, sketch map, August 1981.
- Rountree, Russ. Denver Basin operators zero in on new targets: Western Oil Reporter, Vol. 39, No. 2, p. 112-113, 116, illus., February 1982.
- Rountree, Russ. New Niobrara completions attract interest: Western Oil Reporter, Vol. 39, No. 2, p. 125, 127, illus., February 1982.
- Rountree, Russ. Deeper zones may have big oil reserves: Western Oil Reporter, Vol. 39, No. 2, p. 131-133, illus., February 1982.
- Rountree, Russ. Drilling to increase in NE Colorado: Western Dil Reporter, Vol. 39, No. 2, p. 135-136, illus., February 1982.
- Rountree, Russ. Colorado; credited as most active state in region: Western Dil Reporter,

Vol. 39, No. 7, p. 134-139, 1 table, June 1982.

- Rouse, Roland C.; Dunn, Peter J.; and Peacor, Donald R. Mercury amidonitrate crystals from Colorado: The Mineralogical Record, Vol. 13, No. 4, p. 233-234, illus., 5 ref., August 1982.
- Rowley, P. D.; Tweto, Ogden; Hansen, W. R.; et al. Geologic map of the Vernal 1 degrees by 2 degrees Quadrangle, Colorado, Utah, and Wyoming: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-1163, 1 sheet, geol. map 1:250,000, 1979. Reprint; supersedes Open-file reports 75-588 and 78-573.
- Rudd, Lawrence P. An analysis of the hillslope-floodplain boundary: Master's, 1980, Univ. of Denver, Denver, CO.

Runnells, D. D. see Saether, O. M.

Runnells, Donald D. see Saether, Ola M.

Ruskey, Frank see Shuchman, Robert A.

- Rutherford, David W. A geochemical baseline survey of selected toxic elements in surficial materials in the vicinity of the Paraho demonstration oil shale processing plant, Anvil Points, Garfield County, Colorado: Master's, 1979, Colorado School of Mines, Golden, CO.
- Ryder, Robert T.; Lee, Myung W.; and Smith, Gerald N. Seismic models of sandstone stratigraphic traps in Rocky Mountain basins: *in the collection* Methods in exploration series, Am. Assoc. Pet. Geol., Tulsa, OK, United States, 77 p., illus. (incl. geol. sketch maps), October 1981.
- Sabins, Floyd F., Jr. Remote sensing laboratory manual: Remote Sens. Enterpr., La Habra, CA, United States, variously paginated, illus., 1981.
- Saether, O. M.; Runnells, D. D.; Ristinen, R. A.; et al. Fluorine; its mineralogical residence in the oil shale of the Mahogany Zone of the Green River Formation, Piceance Creek basin, Colorado, U.S.A.: Chemical Geology, Vol. 31, No. 3, p. 169-184, illus. (incl. table), 1 p. ref., 1981.
- Saether, Ola M.; and Runnells, Donald D. Geochemistry of fluorine in oil shale leachates: *in* Thirteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, No. 13, p. 362-368, illus. (incl. 4 tables), 10 ref., August 1980.
- Sanborn, Albert F. Potential petroleum resources of northeastern Utah and northwestern Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 255-266,

sects., geol. sketch maps, 43 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Sandberg, Charles A.; and Poole, Forrest G. Conodont biostratigraphy and depositional complexes of Upper Devonian cratonic-platform and continental-shelf rocks in the Western United States: in Proceedings of the 1977 annual meeting of the Paleontological Society on Devonian of western North America (Murphy, Michael A., editor; et al.), Campus Museum Contributions, No. 4, p. 144-182, illus. (incl. sects., sketch maps), 125 ref., November 9, 1977.

Sandberg, Charles A. see also Johnson, John G.

Sandoval, Walter F. see Maassen, Larry W.

-- see Warren, Richard G.

Saulnier, G. J., Jr.; and Goddard, K. E. Use of mathematical models to predict impacts of mining energy minerals on the hydrologic system in northwestern Colorado: Mining Engineering, Vol. 34, No. 3, p. 285-293, illus. (incl. 1 table, sketch maps), 15 ref., March 1982. SME preprint 79-137, SME-AIME annual meeting, New Orleans, LA, Feb. 1979.

Saulnier, G. J., Jr. see also Robson, S. G.

Savage, W. Z. see Radbruch-Hall, D. H.

- Schenewerk, Philip Andrew; Sethi. Darshan Kumar; Fert1, Walter H.; et al. Natural gamma ray spectral logging aids; Granite Wash Reservoir evaluation: in Transactions of the SPWLA twenty-first annual logging symposium (Lang, William H., president), Transactions of the SPWLA Annual Logging Symposium, No. 21, p. BB1-BB23, illus. (incl. 2 tables, sects., geol. sketch maps), 9 ref., July 11, 1980.
- Schmidt, Terry E. Meteorite hunting: Earth Science (Falls Church, VA), Vol. 34, No. 4, p. 22-23, illus., 1981.
- Schrager, Debra. C. Clay Crawford: Mines Magazine, Vol. 71, No. 7, p. 14-15, illus., September 1981.

Schuenemeyer, John H. see Koch, George S., Jr.

- Schultz, Paul R. Colorado lapis lazuli from the Blue Wrinkle Mine in Gunnison County: Lapidary Journal, Vol. 34, No. 11, p. 2344-2346, illus., February 1981.
- Schumm, S. A. see Nadler, C. T.
- Schwab, A. P. see Soltanpour, P. N.
- Schwochow, S. D. see Rogers, W. P.
- Scott, Alan J. see Boyles, J. Michael
- Scott, G. L.; and Klipping, Sharon. Seismic surveying, salt anticline region, Paradox

Basin: *in* Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference -Rocky Mountain Association of Geologists, Vol. 1981, p. 161-168, illus. (incl. 1 table, sketch map), 8 ref., 1981.

- Scott, G. R. Paleovalley and geologic map of northeastern Colorado: Miscellaneous Investigations Series - U. S. Geological Survey, No. I-1378, 12 p., geol. map 1:250,000, 1982.
- Scott, G. R.; and Moore, D. W. Generalized surficial geologic map of the Kline Quadrangle, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-1317, 1 sheet, geol. map 1:24,000, 1 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Scott, G. R. see also Moore, D. W.

- Scott, James H. see Olhoeft, Gary R.
- Scott, Louis see Markgraf, Vera
- Scott, Robert W.; and Basan, Paul B. Introduction: in Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado (Basan, Paul B., editor), Soc. Econ. Paleontol. and Miner., Rocky Mtn. Sect., Denver, CO, United States, p. 1-5, illus. (incl. strat. col., sketch map), 1980.
- Scott, Robert W.; and Basan, Paul B. Trace fossils and depositional environments of the Purgatoire and Dakota formations at Canon City (Stop 3): in Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado (Basan, Paul B., editor), Soc. Econ. Paleontol. and Miner., Rocky Mtn. Sect., Denver, CO, United States, p. 22-29, illus. (incl. strat. col., sketch map), 15 ref., 1980

Scott, Robert W. see also Basan, Paul B.

Scroggs, D. L. see Rogers, W. P.

Seaman, L. see Murri, W. J.

- Sears, J. W.; Graff, P. J.; and Holden, G. S. Tectonic evolution of lower Proterozoic rocks, Uinta Mountains, Utah and Colorado: Geological Society of America Bulletin, Vol. 93, No. 10, p. 990-997, illus. (incl. sketch maps), 20 ref., October 1982.
- Sethi, Darshan Kumar see Schenewerk, Philip Andrew

Severson, R. C. see Gough, L. P.

- Sewell, J. Michael see Anderson, Jule R.
- Sexton, John L. see Cole, Rex D.

Shaffer, M. E. see Williamson, J. V.

Shagoury, Richard A. see Sutton, Christopher J.

- Shannon, J. R.; Walker, B. M.; Carten, R. B.; et al. Unidirectional solidification textures and their significance in determining relative ages of intrusions at the Henderson Mine, Colorado: Geology (Boulder), Vol. 10, No. 6, p. 293-297, illus., 20 ref., June 1982.
- Shannon, Spencer S., Jr.; Gallimore, David L.; Martell, Calvin J.; et al. Detailed uranium geochemical stream sediment survey data release for selected portions of the Craig NTMS Quadrangle, Colorado, and Rawlins NTMS Quadrangle, Wyoming, including concentrations of forty-five additional elements: LA - Los Alamos Scientific Laboratory, No. 8481, 132 p., illus., site location maps 1:126,720, 9 ref., April 1981. (Rep. No. GJBX-216-81) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program.

Shelton, D. C. see Rogers, W. P.

Shen, H. W. see Laronne, J. B.

Sheridan, Douglas M.; Raymond, William H.; and Cox, Leslie J. Precambrian sulfide deposits in the Gunnison region, Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 273-277, 5 anals., 2 tables, geol. sketch map, 34 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Sheridan, Michael F. see Burt, Donald M.

Shockey, D. A. see Murri, W. J.

- Shuchman, Robert A.; Jackson, Philip; Ruskey, Frank; et al. Geological reconnaissance of an oil shale region by remote sensing techniques: in Remote sensing of earth resources (Shahrokhi, F., editor), Annual Remote Sensing of Earth Resources Conference, No. 5, Vol. 5, p. 419-434, 1 table, 4 ref., 1977.
- Shultz, Albert W. Sedimentology of conglomerates of debris flow and water flow origin in the Permo-Pennsylvanian Cutler and Fountain formations of Colorado: Master's, 1980, Indiana Univ., Bloomington, IN.

Signor, D. C. see Helgesen, J. O.

-- see Jorgensen, D. G.

Simmons, E. C.; and Hedge, C. E. Minor-element and Sr-isotope geochemistry of Tertiary stocks, Colorado mineral belt: Contrib. Mineral. Petrol.--Beitr. Mineral. Petrol., Vol. 67, No. 4, p. 379-396, illus. (incl. 5 tables, sketch maps), 27 ref., December 15, 1978. Simmons, William B.; and Heinrich, E. William. The Black Cloud Pegmatite, Teller County, Colorado [abstr.]: *in* The mineralogy of pegmatites (Brown, Gordon E., Jr., editor), American Mineralogist, Vol. 67, No. 1-2, p. 184, February 1982.

Simon, Ruth S. see Wong, Ivan G.

- Sinnock, Scott. Glacial moraines, terraces and pediments of Grand Valley, western Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 113-120, illus. (incl. sketch map), 27 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Sinnock, Scott. Pleistocene drainage changes in Uncompany Plateau-Grand Valley region of western Colorado, including formation and abandonment of Unaweep Canyon; a hypothesis: in Western Slope. Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 127-136, illus. (incl. sketch maps), 18 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Siriwardane, H. J. see Desai, C. S.

- Slawson, G. C.; Kelly, K. E., Jr.; and Everett, L. G. Evaluation of ground-water pumping and bailing methods; application in the oil shale industry: Ground Water Monitoring Review, Vol. 2, No. 3 (Summer), p. 27-32, illus. (incl. 3 tables), 6 ref., 1982.
- Smagala, Tom. The Cretaceous Niobrara play: Oil and Gas Journal, Vol. 79, No. 10, p. 204-218, illus. (incl. sketch maps), 2 ref., March 9, 1981.
- Smith, C. B.; McCallum, M. E.; and Hedge, C. E. Rb/Sr isotopic ratios in selected lower crust-upper mantle nodules from Colorado-Wyoming kimberlites: Open-File Report (United States Geological Survey. 1978), No. 82-0178, 22 p., illus. (incl. 19 anal., 4 tables, sketch map), 16 ref., 1982. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Smith, Gerald N. see Ryder, Robert T.

Smith, J. W. see Giauque, R. D.

- Smith, John Ward. Dil shale resources of the United States: Mineral & Energy Resources, Vol. 23, No. 6, 20 p., illus. (incl. sect., sketch maps), 100 ref., 1980 [1981].
- Smith, John Ward. Alumina from oil shale: Mining Engineering, Vol. 33, No. 6, p. 693-697, illus. (incl. sect.), 17 ref., June 1981.

Smith, John Ward see also Chong, Ken P.

Smith, K. T. see Molenaar, C. M.

- Smith, M. C. Structure contours and overburden on the top of the Mohogany Bed, Green River Formation, eastern part of the Uinta Basin, Uintah, Duchesne, and Carbon counties, Utah: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-1311, 1 sheet, struc. contour map 1:126,720, 1981.
- Smith, M. C.; and O'Sullivan, R. B. Results of core drilling in 1978 for oil shale in the Eocene Green River Formation, Piceance Creek area of western Colorado: Open-File Report (United States Geological Survey. 1978), 190 p., 1 table, sketch maps, 1982. (Rep. No. 82-0476) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Smith, R. P. see White, W. H.

Smith, Robert see Brown, Phillip

Smythe, W. R. see Saether, O. M.

- Snyder, G. L.; Hopkins, R. T., Jr.; Domenico, J. A.; et al. Analyses of rock and stream-sediment samples, Mount Zirkel Wilderness and northern Park Range vicinity, Jackson and Routt counties, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0186, 108 p., 1568 anals., index map 1:48,000, 4 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Soares, E. F.; Unny, T. E.; and Lennox, W. C. Conjunctive use of deterministic and stochastic models for predicting sediment storage in large reservoirs; 3, Application of the two models in conjunction: Journal of Hydrology, Vol. 59, No. 1-2, p. 107-121, illus., October 1982.
- Soltanpour, P. N.; Workman, S. M.; and Schwab, A. P. Use of inductively-coupled plasma spectrometry for the simultaneous determination of macro- and micronutrients in NH/4_HCO/3_-DTPA extracts of soils: in Proceedings of the 43rd annual meeting, Soil Science Society of America (Walsh, L. M., president), Soil Science Society of America Journal, Vol. 43, No. 1, p. 75-78, 6 tables, 7 ref., February 1979.

Soltanpour, P. N. see also Gestring, W. D.

-- see also Havlin, J. L.

Sonnenberg, S. A. see Weimer, R. J.

- Sonnenberg, Stephen A. The Lanyard Field, a structural-stratigraphic trap, Denver Basin, Colorado: The Mountain Geologist, Vol. 19, No. 3, p. 62-72, 9 ref., July 1982.
- Sonnenberg, Stephen A.; and Weimer, Robert J. Tectonics, sedimentation, and petroleum

potential, northern Denver Basin, Colorado, Wyoming, and Nebraska: Colorado School of Mines Quarterly, Vol. 76, No. 2, 45 p., illus. (incl. 1 table, sects., geol. sketch maps), 62 ref., April 1981.

Soule, J. M. see Rogers, W. P.

Sowinski, Joan W. see Sutton, Christopher J.

- Spahr, N. E. Variations in climatic characteristics as related to evapotranspiration in South Park, central Park County, Colorado: Water-Resources Investigations, No. PB-81 219 610 (WRI 80-86), 154 p., 1981. available from: NTIS, Springfield, VA, United States.
- Spence, William. Review of the Denver Water Department induced seismicity program at Strontia Springs, Colorado: Open-File Report (United States Geological Survey. 1978), No. 82-0064, 23 p., illus. (incl. sketch maps), 30 ref., 1982. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Spencer, C. W. see Chamberlain, C. Kent

- Spicer, Claudia A. Conducting a fire assay for school children: Journal of Geological Education, Vol. 29, No. 2, p. 71-73, illus., 4 ref., March 1981.
- Stanford, Dennis; Bonnichsen, Robson; and Morlan, Richard E. The Ginsberg experiment; modern and prehistoric evidence of a bone-flaking technology: Science, Vol. 212, No. 4493, p. 438-440, illus., 13 ref., April 24, 1981. Yukon Refugium Proj.; Contrib. No. 41.

Stanley, Daniel R. see Morris, Armand V.

- Starch, Karl E. The mineral industry of Colorado: U. S. Bur. Mines, United States, 18 p., illus., 198?. Preprint from Minerals yearbook, 1980, U. S. Bur. Mines.
- Steele, T. D.; and Hillier, D. E. (compilers). Assessment of impacts of proposed coal-resource and related economic development on water resources, Yampa River basin, Colorado and Wyoming; a summary: Geological Survey Circular, No. 0839, 56 p., 1981.

Stein, Holly J. see Dowsett, Frederick R., Jr.

Steininger, R. C. see White, W. H.

Steven, T. A. see Tweto, Ogden

Stevenson, G. M.; and Baars, D. L. Four Corners-Intermountain area: in World energy developments, 1980 (Anonymous), AAPG Bulletin, Vol. 65, No. 10, p. 1840-1842, 2 tables, sketch map, October 1981.

Stevenson, G. M.; and Baars, D. L. Pre-Carboniferous paleotectonics of the San Juan Basin: *in* Proceedings of the Third international conference on basement tectonics (0'Leary, Dennis W., editor; *et al.*), Proceedings of the International Conference on Basement Tectonics, No. 3, p. 331-346, 1 tables, chart, sects., sketch maps, 23 ref., 1981.

Stevenson, G. M. see also Baars, D. L.

-- see also Baars, Don L.

Stewart, Daniel Russell. Comparison of rock mass classification systems; Mt. Axtell Tunnel, Gunnison County, Colorado: 136 p., Master's, 1981, Univ. of Arizona, Tucson, AZ.

Stormer, John C. see Dungan, Michael A.

Street, J. J. see Yekini, B.

- Sture, S.; Atkinson, R. H.; and Ko, H. Y. Multiaxial testing to determine material behavior for design of energy related structures: *in* High-pressure science and technology; Vol. 2, Applications and mechanical properties (Timmerhaus, Klaus D., editor; *et al.*), Proceedings of the AIRAPT International High Pressure Conference, No. 6, p. 272-281, illus. (incl. 1 table), 21 ref., 1979. Sixth AIRAPT international high pressure conference.
- Sugiura, Ray; and Kitcho, Catherine A. Collapse structures in the Paradox Basin: in Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 33-45, illus. (incl. geol. sketch maps), 23 ref., 1981.

Suhler, S. A. see Owen, T. E.

Suits, V. J.; and Cordell, Lindrith. Bouguer gravity map of the San Juan Basin area, Colorado, Arizona, and New Mexico: Dpen-File Report (United States Geological Survey. 1978), No. 81-0657, 1 sheet, gravity surv. map 1:500,000, 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Summer, R. M. see Lee, K.

- Suryanto, Untung. Stratigraphy and petroleum geology of the J Sandstone in portions of Boulder, Larimer, and Weld counties, Colorado: Master's, 1979, Colorado School of Mines, Golden, CO.
- Sutton, Christopher J.; Shagoury, Richard A.; Jones, Randolf F.; et al. Hazardous-waste generation in Colorado: in Hazardous wastes in Colorado; a preliminary evaluation of generation and geologic criteria for disposal (Hynes, Jeffrey, L.; et al.), Information Series - Colorado Geological Survey, No. 14, p. 1-32, illus. (incl. 5 tables, sketch map), 21 ref., 1980. With appendix.

- Swain, Frederick M. Petroleum in continental facies: in Petroleum geology in China (Mason, John Frederick, editor), PennWell Books, Tulsa, OK, United States, p. 5-25, illus. (incl. 92 anal., 13 tables, sects., geol. sketch maps), 39 ref., 1981. United Nations international meeting on petroleum geology.
- Swindle, Lewis J. Amethyst quartz with goethite inclusions: Lapidary Journal, Vol. 36, No. 1, p. 144, 146-151, 153-157, illus., 3 ref., April 1982.
- Swolfs, H. S.; Brechtel, C. E.; Brace, W. F.; et al. Field mechanical properties of a jointed sandstone: in Mechanical behavior of crustal rocks; the Handin volume (Carter, Neville L., editor; et al.), Geophysical Monograph, No. 24, p. 161-172, illus. (incl. 1 table), 14 ref., 1981.

Tatsumoto, M. see Basu, A. R.

- Taylor, Andrew M. Depositional environments of the Dakota Sandstone in southeastern Colorado: Soc. Econ. Paleontol. Mineral., Denver, CO, United States, 69 p., illus. (incl. sketch maps), 85 ref., 1980. Guidebook for SEPM field trip No. 3 held on June 11-13, 1980 in conjunction with the June 8-11, 1980 AAPG/SEPM/EMD Convention.
- Taylor, O. J. (investigator). Three-dimensional hydrologic model of the Piceance Basin, Colorado [abstr.]: Geological Survey Professional Paper, No. 1275, p. 180, 1981 [1982].
- Tewksbury, Barbara Jarvis. Polyphase deformation and contact relationships of the Precambrian Uncompangre Formation, Needle Mountains, southwestern Colorado: 475 p., Doctoral, 1981, Univ. of Colorado, Boulder, CO. available from: Univ. Microfilms.
- Thamm, John K.; Kovschak, Anthony A., Jr.; and Adams, Samuel S. Geology and recognition criteria for sandstone uranium deposits of the salt wash type, Colorado Plateau Province; final report: 135 p., illus. (incl. 15 tables, geol. sketch maps), 141 ref., January 1981. (Rep. No. GJBX-6(81)) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program.
- Theis, Nicholas J.; Madson, Michael E.; Rosenlund, Gene C.; et al. Durango Quadrangle, Colorado: 48 p., 2 tables, sketch maps, geol. map 1:50,000, econ. geol. maps 1:500,000, 95 ref., June 1981. (Rep. No. GJD-011(81)) available from: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.
- Thelin, Gail P.; Johnson, Thomas L.; and Johnson, Robert A. Mapping irrigated cropland on the High Plains using Landsat: in Satellite hydrology (Deutch, Morris, editor;

et al.), Proceedings of the Annual William T. Pecora Memorial Symposium on Remote Sensing, No. 5, p. 715-721, 2 tables, 4 ref., 1981. (Tech. Publ. No. TPS81-1 of Am. Water Resour. Assoc.).

Theobald, P. K. (investigator). Mineralization in the Williams Fork, Colorado [abstr.]: in Geological Survey research 1981, Geological Survey Professional Paper (Washington, D.C.), No. 1275, p. 15, 1981 [1982].

Thoen, W. L. see Luft, S. J.

Thomaidis, Nick see Baars, Don L.

Thomas, Gayle J. see Maassen, Larry W.

- Thomas, John A.; and Galey, John T., Jr. Exploration and geology of the Mt. Emmons molybdenite deposits, Gunnison County, Colorado: Economic Geology and the Bulletin of the Society of Economic Geologists, Vol. 77, No. 5, p. 1085-1104, illus. (incl. 5 anal., 1 table, sects., geol. sketch map), 15 ref., August 1982.
- Thomas, Lowell. My days at Cripple Creek: Earth Science, Vol. 28, No. 6, p. 285, December 1975.
- Thompson, Ren see Dungan, Michael A.
- Thorn, C. E. see Bovis, M. J.
- Threlkeld, C. N. see Rice, D. D.
- Tinsley, John C., III. Jet from Colorado: Earth Science, Vol. 27, No. 2, p. 106-108, illus., April 1974.
- Tobin, R. L. see Covay, K. J.
- Tokheim, R. E. see Murri, W. J.
- Tremain, C. M.; Boreck, D. L.; and Kelso, B. S. Methane in Cretaceous and Paleocene coals of western Colorado: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 241-248, 1 table, sects., geol. sketch maps, 17 ref., 1981. New Mexico Geological Society; Thirty-second field conference.
- Truebe, Henry A. Water-clear barite from Muddy Creek, Colorado: The Mineralogical Record, Vol. 12, No. 2, p. 79-80, illus. (incl. sketch map), 2 ref., April 1981.
- Truebe, Henry A. Shavano Peak ... a new Mt. Antero?: The Mineralogical Record, Vol. 12, No. 6, p. 365-367, illus. (incl. sketch map), 8 ref., December 1981.
- Tschudy, R. H. see Orth, C. J.
- Tur, Stephen M. see Flores, Romeo M.

- Turk, J. T.; and Parker, R. S. Water-quality characteristics of six small, semiarid watersheds in the Green River coal region of Colorado: Water-Resources Investigations, No. PB-82 207 390 (WRI 81-73), 101 p., 1982. available from: NTIS, Springfield, VA, United States.
- Turk, J. T. (investigator). Effects of energy-production emissions on Colorado lakes [abstr.]: Geological Survey Professional Paper, No. 1275, p. 226, 1981.
- Tuttle, Michele (investigator). Element baselines for the Piceance Creek Basin, Colorado [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 41, 1981 [1982].
- Tweto, O. L. (investigator). Relations between tectonism and mineralization in southwestern Colorado [abstr.]: *in* Geological Survey research 1981, Geological Survey Professional Paper (Washington, D.C.), No. 1275, p. 10-11, 1981 [1982].
- Tweto, Ogden (compiler). Geologic map of the Craig 1 degrees by 2 degrees quadrangle, northwestern Colorado: Miscellaneous Investigations Series - U. S. Geological Survey, No. I-0972, 1 sheet, geol. map 1:250,000, 1976. Reprint.
- Tweto, Ogden; Steven, T. A.; Hail, W. J., Jr. (compilers); et al. Preliminary geologic map of the Montrose 1 degrees by 2 degrees quadrangle, southwestern Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, No. MF-0761, 1 sheet, geol. map 1:250,000, 1976. Reprint.

Tweto, Ogden see also Rowley, P. D.

- Tyler, Noel. Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau: 285 p., Doctoral, 1981, Colorado State Univ., Fort Collins, CO. available from: Univ. Microfilms.
- U. S. Bureau of Land Management. Proposed wilderness designation of the wilderness study areas within the Gunnison Basin and American Flats/Silverton planning units of the Montrose District, Colorado: U. S. Bur. Land Manage., Montrose, CO, United States, 180 p., illus. (incl. geol. sketch maps; colored geol. map 1:52,493), 24 ref., 1982. Draft environmental impact statement.
- U. S. Bureau of Reclamation, Water and Power Resources Service, Lower Missouri Region.
 Colorado-Big Thompson-Windy Gap projects,
 Colorado: variously paginated, illus. (incl. tables), 90 ref., 1979. available from: U. S.
 Dep. Inter., Water Power Resour. Serv., Lower Mo. Reg., Denver, CO, United States. Final environmental statement.
- U. S. Department of Energy, Federal Energy Regulatory Commission, Office of Electric

Power Regulation. Yampa River basin; Colorado, Wyoming: 39 p., illus. (incl. 5 tables), 8 ref., September 1981. (Rep. No. FERC-0086) available from: Fed. Energy Regul. Comm., Off. Elec. Power Regul., San Francisco, CA, United States. Water resources appraisal for hydroelectric licensing; appraisal report.

- U. S. Geological Survey. Land use and land cover, 1975-76, Denver, Colorado: Land Use Land Cover Maps, L-Ser., No. L-0118, 1 sheet, land use map 1:250,000, 1981.
- U. S. Geological Survey. Land use and land cover and associated maps for Cheyenne, Wyoming, Nebraska, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0015, 4 sheets, land use maps 1:250,000, 1981. available from: U. S. Geol. Surv., Rocky Mt. Mapp. Cent., Denver, CO, United States.
- U. S. Geological Survey, Office of Water Data Coordination. Index to water data acquisition; Region 13, Rio Grande, 1980: in Catalog of information on water data (U. S. Geological Survey, Office of Water Data Coordination), U. S. Geol. Surv., Reston, VA, United States, 94 p., 1981.
- U. S. Geological Survey, Office of Water Data Coordination. Index to water data acquisition; Region 14, Upper Colorado, 1980: in Catalog of information on water data (U. S. Geological Survey, Office of Water Data Coordination), U. S. Geol. Surv., Reston, VA, United States, 157 p., 1981.
- Ullrich, Dick; Baars, Don L.; Price, Vickey (leaders); et al. First day; road log from Durango, Colorado, to Telluride, Colorado, via Silverton and Duray, Colorado: in Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, p. 237-262, illus. (incl. sects.), 1981.
- Union Carbide Corporation, Oak Ridge Gaseous Diffusion Plant. Hydrogeochemica] and stream sediment reconnaissance basic data for Limon Quadrangle, Colorado: 129 p., illus. (incl. 4 tables; site location map 1:250,000; geochem. map 1:250,000), 5 ref., July 31, 1981. (Rep. No. GJBX-367-81) (Rep. No. K/UR-372) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.
- University of Denver Research Institute see Colorado Energy Research Institute

Unny, T. E. see Soares, E. F.

U.S. Geological Survey; and Colorado Geological Survey. Energy resources map of Colorado: Miscellaneous Investigations Series - U.S. Geological Survey, No. I-1039, 1 sheet, econ. geol. map 1:500,000, 1977. Reprint. VanHorn, Larry E. see Hanley, Edward J.

Varnes, D. J. see Radbruch-Hall, D. H.

- Verbeek, Earl R. Unusual luminescence of calcite from the Piceance Creek basin, Rio Blanco Co., northwestern Colorado: Journal of the Fluorescent Mineral Society, Vol. 10, No. 1, p. 4-6, 3 ref., 1981 [1982].
- Vick, Steven G. Morphology and the role of landsliding in formation of some rock glaciers in the Mosquito Range, Colorado: Geological Society of America Bulletin, Vol. 92, No. 2, p. I 75-I 84, illus. (incl. tables, sketch map), 17 ref., February 1981.
- Vlek, P. L. G.; and Lindsay, W. L. Thermodynamic stability and solubility of molybdenum minerals in soils: *in* Proceedings of the 41st annual meeting, Soil Science Society of America (Stewart, B. A., editor), Soil Science Society of America Journal, Vol. 41, No. 1, p. 42-46, illus. (incl. 3 tables), 30 ref., February 1977.
- Volk, Richard W. Developments in eastern and northwestern Colorado and western Nebraska in 1967: AAPG Bulletin, Vol. 52, No. 6, p. 1047-1050, illus. (incl. 4 tables), June 1968.
- Voynick, Steve. Rockhounding in the sky: Lapidary Journal, Vol. 31, No. 6, p. 1440-1444, September 1977.
- Vuke, Susan. Depositional environments of the Early Cretaceous seaway, northwestern United States: Northwest Geology, Vol. 10, p. 1-12, illus. (incl. geol. sketch maps), 52 ref., 1981.

Wacinski, Andrew see Robson, S. G.

Wagner, Harvey see Shuchman, Robert A.

Wagner, P. see Peterson, E. J.

Wahl-Pierce, Frances see O'Sullivan, R. B.

- Wahlstrom, E. E. Summary of the engineering geology of the Harold D. Roberts Tunnel, Colorado: Geological Survey Professional Paper (Washington, D.C.), No. 0831-E, 15 p., 2 plates, 1981. Engineering geology of the Harold D. Roberts Tunnel, Colorado.
- Wahlstrom, E. E.; Robinson, C. S.; and Hornback,
 V. Q. Geology of the western part of the Harold D. Roberts Tunnel, Colorado (stations 0+00 to 690+00): Geological Survey Professional Paper (Washington), No. 0831-C, 58 p., illus., 1981. Engineering geology of the Harold D. Roberts Tunnel, Colorado.

Walker, B. M. see Shannon, J. R.

Walker, B. W. see Johnson, V. C.

Walker, T. R. see Larson, E. E.

- Walker, Theodore R.; Larson, Edwin E.; and Hoblitt, Richard P. Nature and origin of hematite in the Moenkopi Formation (Triassic), Colorado Plateau; a contribution to the origin of magnetism in red beds: JGR. Journal of Geophysical Research. B, Vol. 86, No. 1, p. 317-333, illus. (incl. sketch maps), 47 ref., January 10, 1981.
- Waltz, James; and Decker, Tim L. Hydro-fracturing offers many benefits: Johnson Drillers Journal, Vol. 53, No. 2, p. 4-9, illus., 1981.

Wang, Charles see Warren, John

Wang, Chien-Ying see Herrmann, Robert B.

- Warner, L. A.; and Robinson, C. S. Geology of the eastern part of the Harold D. Roberts Tunnel, Colorado (stations 690+00 to 1238+58): Geological Survey Professional Paper (Washington, D.C.), Nc. 0831-D, 31 p., illus., 1981. Engineering geology of the Harold D. Roberts Tunnel, Colorado.
- Warren, John; Mapp, Harry; Ray, Daryll; et al. Economics of declining water supplies in the Ogallala Aquifer: in Proceedings of a symposium on ground-water management (Lehr, Jay H., editor), Ground Water, Vol. 20, No. 1, p. 73-79, illus. (incl. 1 table, sketch map), 8 ref., February 1982.
- Warren, Richard G.; Gallimore, David L.; Martell, Calvin J.; et al. Data release for intermediate-density hydrogeochemical and stream sediment sampling in the Vallecito Creek special study area, Colorado, including concentrations of uranium and forty-six additional elements: LA - Los Alamos Scientific Laboratory, No. 8483, 101 p., illus. (incl. sketch maps), 15 ref., April 1981. (Rep. No. GJBX-217-81) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CD, United States. National Uranium Resource Evaluation Program.

Warriner, J. B. see Palmerton, J. B.

Wayland, Thomas E. see Carter, Thomas E.

Weaver, Glen D. Uncertainties of oil-shale development: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 229-232, 2 tables, 23 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Weaver, Thomas A. see Bolivar, Stephen L.

-- see Wecksung, George W.

Webster, James D. see Klusman, Ronald W.

Wecksung, George W.; Bolivar, Stephen L.; Balog, Susan H.; et al. Integration and analysis by digital image processing techniques of multiple geological, geochemical, and geophysical data sets for the Montrose Quadrangle, Colorado [abstr.]: *in* 1981 international geoscience and remote sensing symposium digest (Carver, Keith R., editor), Inst. Electr. and Electron. Eng., New York, NY, United States, p. 897, 1981.

Wecksung, George W. see also Bolivar, Stephen L.

Weeks, J. B.; and Gutentag, E. D. Bedrock geology, altitude of base, and 1980 saturated thickness of the High Plains Aquifer in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming: U. S. Geol. Surv., Hydrol. Invest. Atlas, No. HA-0648, 2 sheets, hydrogeol. map 1:2,500,000, 1981.

Weeks, J. B. see also Luckey, R. R.

- Weichman, Bernard E. Mining in the Saline Zone: in Dil shale (Love, William H., chairperson; et al.), Am. Min. Congr., United States, Vol. 4, p. 10, illus. (incl. sketch maps), 1980.
- Weiland, E. F.; Lindermann, J. W.; Connors, R. A.; et al. Geochemical and geostatistical evaluation of American Flats-Silverton planning units, San Juan volcanic province, Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0599, 126 p., illus. (incl. 1441 anals., 8 tables, sketch maps; geol. map 1:50,000; geochem. maps 1:50,000), 65 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States. With an introduction by Heran, William D.
- Weimer, Paul. The bedrock geology of the Ridgway area, Duray County, Colorado: 91 p., illus. (incl. 4 tables), Master's, 1980, Univ. of Colorado, Boulder, CO.
- Weimer, Paul. Bedrock geology of the Ridgeway area, northwestern flank, San Juan Mountains, Colorado: *in* Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; *et al.*), Guidebook - New Mexico Geological Society, No. 32, p. 97-104, 1 table, sects., sketch maps, 25 ref., 1981. New Mexico Geological Society; Thirty-second field conference.

Weimer, Paul see also Ullrich, Dick

- Weimer, R. J.; and Sonnenberg, S. A. Wattenberg Field, paleostructure-stratigraphic trap, Denver Basin, Colorado: Dil and Gas Journal, Vol. 80, No. 12, p. 204-210, sect., block diags., sketch maps, 10 ref., March 22, 1982.
- Weimer, Robert J. Recurrent movement on basement faults, a tectonic style for Colorado and Wyoming [abstr.]: *in* Rocky Mountain Foreland basement tectonics (Boyd, Donald W., editor; *et al.*), Contributions to Geology, Vol. 19, No. 2, p. 180, January 1981.
- Weimer, Robert J. see also Sonnenberg, Stephen A.

.

- Weir, G. W.; and Puffett, W. P. Incomplete manuscript on stratigraphy and structural geology and uranium-vanadium and copper deposits of the Lisbon Valley area, Utah-Colorado: Open-File Report (United States Geological Survey. 1978), No. 81-0039, 306 p., illus. (incl. geol. sketch map), 250 ref., 1981. available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Wendt, Gary see Brown, Phillip
- West, Robert M. The North American Phenacodontidae (Mammalia, Condylarthra): Contributions in Biology and Geology, No. 6, 78 p., illus. (incl. 22 tables, sketch map), 78 ref., January 20, 1976.
- Western States Land-Grant Universities and Colleges. Soils of the Western United States (exclusive of Hawaii and Alaska): Wash. State Univ., Pullman, WA, United States, 69 p.. illus. (incl. tables; colored soils map 1:255,905), 7 ref., September 1964. (Publ. in coop. with the U. S. Dep. Agric., Soil Conserv. Serv.).

Wheat, B. M. see Campbell, J. R.

- White, W. H.; Bookstrom, A. A.; Kamilli, R. J.; et al. Character and origin of climax-type molybdenum deposits: in Economic geology; Seventy-fifth anniversary volume; 1905-1980 (Skinner, Brian J., editor), Econ. Geol. Publ. Co., United States, p. 270-316, illus. (incl. 16 anal., 10 tables, geol. sketch maps), 98 ref., 1981.
- Whitney, J. W. Surficial geologic map of the Grand Junction 1 degrees by 2 degrees quadrangle, Colorado and Utah: Miscellaneous Investigations Series - U. S. Geological Survey, No. I-1289, 1 sheet, geomorphol. map 1:250,000, 1981.

Wickman, Donald W. see Anderson, David L.

- Wiegand, Del L. (editor). Geology of the Paradox Basin: Field Conference - Rocky Mountain Association of Geologists, Vol. 1981, 285 p., illus., 1981. Individual papers are cited separately.
- Wildung, R. E.; and Zachara, J. M. Geochemistry of oil shale solid waste disposal: in Proceedings of an International symposium on oil shale, the environmental challenges (Petersen, Kathy Kellogg, editor), Colo. Sch. Mines Press, Golden, CO, United States, p. 201-252, illus. (incl. 6 anal., 3 tables), 96 ref., 1981. With discussion.
- Williams, Roy E. Statistical identification of hydraulic connections between the surface of a mountain and internal mineralized sources: Ground Water, Vol. 20, No. 4, p. 466-478, illus. (incl. 2 tables, sketch maps), 15 ref., August 1982.

- Williamson, J. V.; and Shaffer, M. E. Seismic analysis of Spinney Mountain Dam: in International conference on recent advances in geotechnical earthquake engineering and soil dynamics; Vol. I (Prakash, Shamsher, editor), Univ. Mo. at Rolla, Rolla, MO, United States, p. 401-406, illus. (incl. 1 table, sketch map), 12 ref., 1981.
- Wilson, Mark V. H. Eocene freshwater fishes from the Coalmont Formation, Colorado: Journal of Paleontology, Vol. 55, No. 3, p. 671-674. illus., 22 ref., May 1981.
- Wilson, Michael D. Origins of clays controlling permeability in tight gas sands: in Proceedings of the 1981 SPE/DOE symposium on low permeability gas reservoirs (Bixel, Harold, chairperson), Soc. Pet. Eng. AIME, Denver, CO, United States, p. 157-164, illus. (incl. 1 table), 9 ref., 1981. SPE/DOE 9843.
- Wittstrom, Martin D., Jr. Sedimentology of the Leadville Limestone (Mississippian), northeastern Gunnison County, Colorado: Master's, 1979, Colorado School of Mines, Golden, CO.

Wobus, R. A. see Bryant, Bruce

Wollenberg, Harold A. see Brookins, Douglas G.

- Wong, Ivan G.; and Simon, Ruth S. Low level historical and contemporary seismicity in the Paradox Basin, Utah and its tectonic implications: *in* Geology of the Paradox Basin (Wiegand, Del L., editor), Field Conference -Rocky Mountain Association of Geologists, Vol. 1981, p. 169-185, illus. (incl. sketch maps), 30 ref., 1981.
- Woods, T. L.; Roedder, Edwin; and Bethke, P. M. Fluid-inclusion data on samples from Creede, Colorado, in relation to mineral paragenesis: Dpen-File Report (United States Geological Survey. 1978), 77 p., illus. (incl. 3 tables, geol. sketch map), 38 ref., 1982. (Rep. No. 82-0313) available from: U. S. Geol. Surv., Dpen-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.

Woodzick, T. L. see Hausel, W. D.

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Yekini, B.; Fiskell, J. G. A.; Berkheiser, V. E.; et al. Phosphate adsorbed and desorbed from three regional soils: in The Soil and Crop Science Society of Florida; proceedings, Fortieth annual meeting (Carlisle, V. W., president), Proceedings - Soil and Crop Science Society of Florida, Vol. 40, p. 50-53, illus. (incl. 1 table), 21 ref., 1981. Soil and Crop Science Society of Florida.

Yeoman, R. A. see Ludington, Steve

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Young, R. G.; Keighin, C. William; and Campbell, J. A. Second day; road log from Grand Junction to Glenwood Canyon and return to Grand Junction: *in* Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; *et al.*), Guidebook - New Mexico Geological Society, No. 32, p. 17-28, illus. (incl. sketch map), 1981. New Mexico Geological Society; Thirty-second field conference.

Young, Robert A. see Daubert, John T.

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- Zacharakis, Ted G. Revised heat flow map of Colorado: Colo. Geol. Surv., Map Ser., No. 18 (DOE/ET/28365-12), 1 sheet, geophys. surv. map 1:1,000,000, 1981.
- Zacharakis, Ted G. see also Pearl, Richard Howard

Zawistowski, Stanley see Robson, S. G.

- Zielinski, R. A. (investigator). Uranium mobility during glass diagenesis [abstr.]: Geological Survey Professional Paper (Washington), No. 1275, p. 46, 1981 [1982].
- Ziemba, E. A. Rio Blanco Dil Shale Company Tract C-a, Rio Blanco County, Colorado; summary of geology and current development: in Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.; et al.), Guidebook - New Mexico Geological Society, No. 32, p. 211-218, illus. (incl. sects., sketch maps), 1981. New Mexico Geological Society; Thirty-second field conference.
- Zietz, Isidore; and Kirby, J. R., Jr. Aeromagnetic map of Colorado: U. S. Geol. Surv., Geophys. Invest. Map, No. GP-0836, 1 sheet, aeromagn. map 1:500,000, 1972. Reprint.

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- -- A summary of DDE funded geothermal resource assessment efforts in Colorado by the Colorado Geological Survey (Pearl, Richard Howard)
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- -- An appraisal of the use of geothermal energy in state-owned buildings in Colorado (Meyer, Richard T.)
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- -- Hydrothermal resources of western Colorado (Pearl, Richard Howard)
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- -- Coal resource occurrence and coal development potential maps of the Adobe Downs Ranch Quadrangle, San Juan County, New Mexico, and La Plata County, Colorado (Dames and Moore)
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- -- Detailed uranium geochemical stream sediment survey data release for selected portions of the Craig NTMS Quadrangle, Colorado, and Rawlins NTMS Quadrangle, Wyoming, including concentrations of forty-five additional elements (Shannon, Spencer S., dr.)
- -- Durango Quadrangle, Colorado (Theis, Nicholas J.)
- -- Energy resources map of Colorado (U.S. Geological Survey)
- -- Geologic map and coal deposits of the western part of Ninemile Gap Quadrangle and the southern part of Axial Quadrangle, Moffat and Rio Blanco counties, Colorado (Nutt, C. J.)
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- M. C.)
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- -- S.W. Denver Basin, Colorado (Petromotion) -- Trinidad Quadrangle, Colorado (Johnson, V. C.) metal ores: Geochemical and
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- -- Precambrian mineralization and tectonic framework of Fremont County, Colorado (Ririe, George Todd)
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- mineral resources: A summary of mineral industry activities in Colorado, 1980; Part II, Metal-nonmetal (Anonymous)
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- -- Infrared detection of kimberlitic diatremes in northern Colorado and southern Wyoming (McCallum, M. E.)

- -- Integration and analysis by digital image processing techniques of multiple geological, geochemical, and geophysical data sets for the Montrose Quadrangle, Colorado (Wecksung, George W.)
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- -- Western mining directory for the industry (Anonymous)
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- -- Molybdenum; no slow-down at Thompson Creek (Anonymous)
- -- Monitoring program measures slope movement at Climax Mine (Anonymous)
- -- Noranda seeks moly in Colorado's Alma mining

- district (Anonymous) -- Tectonic setting and generation of Rocky Mountain porphyry molybdenum deposits (Bookstrom, Arthur A.)
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- -- Eastern Green River basin; a developing giant gas supply from deep, overpressured Upper Cretaceous sandstones (McPeek, L. A.)
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- -- The Cretaceous Niobrara
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- -- Central Rocky Mountain region, Colorado, Utah and Wyoming (Petromotion)
- -- Denver Basin; Colorado, Wyoming, Kansas and Nebraska (Petromotion)
- -- Seismic models of sandstone stratigraphic traps in Rocky Mountain basins (Ryder, Robert T.)
- -- The Lanyard Field, a structural-stratigraphic trap, Denver Basin, Colorado (Sonnenberg, Stephen A.)
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- -- Correlation of mineralogy and trace element leaching behavior in modified in situ spent shales from Logan Wash, Colorado (Peterson, E. J.)
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- -- Geochemical surveys of oil shale in the Piceance Creek basin, Colorado
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- -- Geohydrology and surface water hydrology programs of the Equity/DDE BX In Situ Oil Shale Project, Rio Blanco County, Colorado (Markley, D. E.)
- -- Geological reconnaissance of an oil shale region by remote sensing techniques (Shuchman, Robert A.)

- -- Geology and oil-shale resources in the central Roan Plateau, Colorado (Hail, W. J.)
- -- Geology of the nahcolite deposits and associated oil shales of the Green River Formation in the Piceance Creek basin, Colorado (Dyni, John Richard)
- -- Histograms showing oil-shale yield in two core holes in the No Name Ridge Quadrangle of western Colorado
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- -- Lacustrine turbidites in the Green River Formation, northwestern Colorado (Dyni, John R.)
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- -- Modular development phase; December 1979-November 1980; year-end report; Volume I (Rio Blanco Oil Shale Company)
- -- Dil shale (Knutson, Carroll F.)
- -- Oil shale; a framework for development (Lewis, A. E.)
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- -- Oil shale resources of the United States (Smith, John Ward)
- -- Oil shale; tomorrow's answer (Petty, Patricia Curtis)
- -- Oil shale 1982 a technology and policy primer (Colorado Energy Research Institute)
- -- Oxy readles giant Cathedral Bluffs oil shale project for 1985 start up (Anonymous)
- -- Results of core drilling in 1978 for oil shale in the Eocene Green River Formation, Piceance Creek area of western Colorado (Smith, M. C.)

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- -- Rio Blanco Oil Shale Company; Tract C-a; modification to the detailed development plan; Lurgi demonstration project (Rio Blanco Oil Shale Company)
- -- Rio Blanco Oil Shale Company Tract C-a, Rio Blanco County, Colorado; summary of geology and current development (Ziemba, E. A.)
- -- Rio Blanco oil shale project moves forward (Anonymous)
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- -- United States; commercial production of oil shale to start in 1983 (Anonymous)
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- Colorado (Rountree, Russ) -- New Niobrara completions attract interest
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-- Data release for

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- -- Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado (Dickinson, Kendell A.)
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- -- Hydrogeochemical and stream sediment reconnaissance basic data for Limon Quadrangle, Colorado (Union Carbide Corporation, Oak Ridge Gaseous Diffusion Plant)
- -- Incomplete manuscript on stratigraphy and structural geology and uranium-vanadium and copper deposits of the Lisbon Valley area, Utah-Colorado (Weir, G. W.)

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- -- Uranium resource assessment through

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- -- Water and energy in Colorado's future; the impacts of energy development on water use in 1985 and 2000 (Colorado Energy Research Institute)
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- -- Yampa River Dasin; Colorado, Wyoming (U. S. Department of Energy, Federal Energy Regulatory Commission, Office of Electric Power Regulation)
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- -- Installation restoration of Rocky Mountain Arsenal; Part I, Pilot containment operations (Kolmer, Joseph R.)
- -- Missouri River Basin Water Resources Management Plan; a comprehensive, coordinated joint plan for water and related land resources development, management, and conservation final environmental impact statement (Missouri River Basin Commission)

- -- Modular development phase; December 1979-November 1980; year-end report; Volume I (Rio Blanco Oil Shale Company)
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 - -- Plan of study for the Central Midwest Regional Aquifer System Analysis in parts of Arkansas, Colorado, Kansas, Missouri, Nebraska, New Mexico, Oklahoma, South Dakota, and Texas
 - (Jorgensen, D. G.) -- Potential use of a stream-aquifer model for management of a river basin; case of the South Platte River in Colorado (Murel-Seytoux, H. J.)

- -- Quality of ground water in Routt County, northwestern Colorado (Covay, K. J.)
- -- Regional study of the Dakota Aquifer (Darton's Dakota revisited) (Helgesen, J. D.)
- -- The groundwater watchers (Boyd, Vicky)
- -- Three-dimensional hydrologic model of the Piceance Basin, Colorado (Taylor, 0. J.)
- -- Water-level records for the northern High Plains of Colorado, 1977-81 (Borman, R. G.)
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- -- Characterization of floodflows along the Arkansas River without regulation by Pueblo Reservoir, Portland to John Martin Reservoir, southeastern Colorado (Little, J. R.)
- -- Characterization of urban runoff from Grange Hall Creek at Northglenn, Adams County, Colorado (Hall, D. C.)
- -- Empirical confirmation of Curl's (1974) flow velocity calculations (Pisarowicz, James A.)
- -- Flood frequency analysis for regulated rivers (Buchberger, Steven G.)
- -- Hydrologic and morphologic changes in channels of the Platte River basin; a historical perspective (Eschner, T. R.)
- -- Hydrologic data for urban storm runoff from nine sites in the Denver metropolitan area, Colorado (Gibbs, J. W.)
- -- Index of surface-water records to September 30, 1970; Part 6, Missouri River basin (Anonymous)
- -- Index of surface-water records to September 30, 1970; Part 8, Western Gulf of Mexico basins (Anonymous)
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- -- Optimal estimators of mean areal precipitation in regions of orographic influence (Chua, Siong-Huat)
- -- Preliminary analysis of historical streamflow and water-quality records (Goetz, Carole L.)
- -- Quality of water: Colorado River basin (Anonymous)
- -- Rainfall-runoff modeling and preliminary regional flood characteristics of small rural watersheds in the Arkansas River basin in Colorado (Livingston, R. K.)
- -- Simulated interactions between the proposed narrows reservoirs and the water-table aquifer along the South Platte River, Morgan County, Colorado (Burns, A. W.)
- -- Statistical identification of hydraulic connections between the surface of a mountain and internal mineralized sources (Williams, Roy E.)
- -- Statistical summaries of water-quality data for two coal areas of Jackson County, Colorado (Kuhn, Gerhard)
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- -- Variations in climatic characteristics as related to evapotranspiration in South Park, central Park County, Colorado (Spahr, N. E.)
- -- Water-quality characteristics of six small, semiarid watersheds in the Green River coal region of Colorado (Turk, J. T.)
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- -- Geologic structure, hydrology, and water quality of the Dawson Aquifer in the Denver Basin, Colorado (Robson, S. G.)
- -- Geologic structure, hydrology, and water quality of the Denver

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- springs. Geochemistry of spring water, southeastern Uinta Basin, Utah and Colorado (Kimball, B. A.) thermal waters:
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- -- Hydrogeochemistry and simulated solute transport, Piceance Basin, northwestern Colorado (Robson, S. G.)
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- -- Sediment analysis for selected sites on the South Platte River in Colorado and Nebraska, and the North Plate and Platte rivers, Nebraska; suspended sediment, bedload and bed material (Kircher, J. E.)
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- -- Ground-water development in western river basins; large economic gains with unseen costs (Daubert, John T.)
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ical sites, Yuma County, Colorado (Graham, Russell ₩.) Mammalia--Hippomorpha Eocene: Variation, sexual dimorphism, and social structure in the early Eocene horse Hyracotherium (Mammalia, Perissodactvla) (Gingerich, Philip D.) Mammalia--Insectivora Oligocene: An apternodontid (Insectivora) from the Chadronian Oligocene of northeastern Colorado (Galbreath, Edwin C.) Mammalia--Multituberculata Eocene: Multituberculates from the Wasatchian land-mammal age, early Eocene, of western North America (Krause, David) Mammalia--Myomorpha Oligocene: Metadiidaumo (Eomyidae, Rodentia) from Colorado and Wyoming (Korth, William W.) Mammalia--Triconodonta Jurassic: A new species of triconodont mammal from the Upper Jurassic of Colorado (Rasmussen, T. E.) maps see also under areal geology; economic geology; engineering geology; environmental geology; geochemistry; geomorphology; geophysical surveys; hydrogeology; soils; stratigraphy; see also under economic geology under Great Plains; Nebraska; Rocky Mountains; see also under geophysical surveys under Nebraska; see also under hydrogeology under Great Plains mass movements see under aeomorphology mathematical geology see also automatic data processing meetings see symposia mercury--abundance sediments: A geochemical baseline survey of selected toxic elements in surficial materials in the vicinity of the Paraho demonstration oil shale processing plant, Anvil Points, Garfield County, Colorado (Rutherford, David W.) Mesozoic see also under stratigraphy;see also under stratigraphy *under* Nebraska metal ores see aiso under economic geology; see also under economic geology under

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- mineralization: Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado (Dickinson, Kendell A.)
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- stream sediments: Data release for intermediate-density hydrogeochemical and stream sediment sampling in the Vallecito Creek special study area, Colorado, including concentrations of uranium and forty-six additional elements (Warren, Richard G.)
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- uranium ores: Detailed uranium hydrogeochemical and stream sediment reconnaissance data release for the eastern portion of the Montrose NTMS Quadrangle, Colorado, including concentrations of forty-five additonal elements (Maassen, Larry W.)
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- -- Uranium and trace elements in stream sediments as an exploration tool (Otton, James K.)
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- Maher, L. J., Jr. Pollen evidence suggests that climatic changes in the Colorado Rockies during the last 5000 years were out of phase with those in the northeastern United States
- Suryanto, Untung. Stratigraphy and petroleum geology of the J Sandstone in portions of Boulder, Larimer, and Weld counties, Colorado
- U. S. Bureau of Reclamation, Water and Power Resources Service, Lower Missouri Region. Colorado-Big Thompson-Windy Gap projects, Colorado
- Weimer, R. J. Wattenberg Field, paleostructure-stratigraphic trap, Denver Basin, Colorado

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- Knight, David Cooper. Stratigraphy and mineralogy of a zinc-rich sillimanite gneiss near Maysville, Chaffee County Colorado
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- Tweto, Ogden. Preliminary geologic map of the Montrose 1 degrees by 2 degrees quadrangle, southwestern Colorado

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- Borman, R. G. Water-level records for the northern High Plains of Colorado, 1977-81
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- Rose, Charles Cleland. Seismic moment, stress drop, strain energy, dislocation radius, and location of seismic acoustical emissions associated with a high alpine snowpack at Berthoud Pass, Colorado
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- Hildebrand, R. T. Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado
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- U. S. Geological Survey. Land use and land cover, 1975-76, Denver, Colorado

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- McCaslin, John C. Drilling in Colorado continues fast pace
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- Robson, S. G. Geologic structure, hydrology, and water quality of the Denver Aquifer in the Denver Basin, Colorado
- Robson, S. G. Geologic structure, hydrology, and water quality of the Laramie-Fox Hills Aquifer in the Denver Basin, Colorado
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- Fishbaugh, David A. Depositional model for the lower Fountain Formation in the Manitou Embayment, Colorado
- Larsen, Lynn S. Soil survey of El Paso County area, Colorado
- McLane, Michael. Upper Cretaceous coastal deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale

- Robson, S. G. Geologic structure, hydrology, and water quality of the Arapahoe Aquifer in the Denver Basin, Colorado
- Robson, S. G. Geologic structure, hydrology, and water quality of the Dawson Aquifer in the Denver Basin, Colorado
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- of landslide deposits, Denver 1 degrees by 2 degrees Quadrangle, Colorado
- McCaslin, John C. Denver Basin activity continues fast pace
- Robson, S. G. Geologic structure, hydrology, and water quality of the Arapahoe Aquifer in the Denver Basin, Colorado
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- Robson, S. G. Geologic structure, hydrology, and water quality of the Denver Aquifer in the Denver Basin, Colorado
- Robson, S. G. Geologic structure, hydrology, and water quality of the Laramie-Fox Hills Aquifer in the Denver Basin, Colorado
- Union Carbide Corporation, Oak Ridge Gaseous Diffusion Plant. Hydrogeochemical and stream sediment reconnaissance basic data for Limon Quadrangle, Colorado

Fremont County Alexander, Donald Henry. Geology, mineralogy, and geochemistry of the McClure Mountain alkalic complex, Fremont County, Colorado

- Basan, Paul B. Road log Basan, Paul B. Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado
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- Boler, F. M. Principal facts for gravity stations in the Pueblo 1 degrees by 2 degrees quadrangle, South-central Colorado
- Christopherson, K. R. Telluric profiling studies in the Penrose area, Colorado
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 - Colorado Garfield County
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- Colorado Energy Research Institute. Dil shale 1982; a technology and policy primer
- Costa, John E. Debris flows in small mountain stream channels of Colorado and . their hydrologic implications
- Dula, William F., Jr. Correlation between deformation lamellae, microfractures, macrofractures, and in situ stress measurements, White River Uplift, Colorado
- Hail, W. J., Jr. Preliminary geologic map of the Circle Dot Gulch Quadrangle, Garfield County, Colorado Haworth, Randol A.
- Stratigraphy of the Cedar Mountain and Dakota formations (Cretaceous), Garfield County, Colorado Hayes, Larry D. The Colony
- Shale Oil Project Hildebrand, R. T. Geology and
- chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado
- Hopkins, John M. Union Dil Company's Dil Shale Project Johnson, R. C. Preliminary geologic map of the Desert Gulch Quadrangle, Garfield County, Colorado
- Johnson, Ronald C. Cretaceous and Tertiary history and resources of the Piceance Creek basin, western Colorado
- Kilkelly, M. K. Revegetation studies on Tosco II and USBM retorted oil shales
- Meyer, Randall. Western states energy resource development
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Mesaverde Group, Piceance Creek basin, Colorado

- D'Sullivan, R. B. Preliminary geologic map of the McCarthy Gulch Quadrangle, Rio Blanco and Garfield counties, Colorado
- Peterson, E. J. Correlation of mineralogy and trace element leaching behavior in modified in situ spent shales from Logan Wash, Colorado
- Pitman, J. K. Isopach, structure contour, and resource maps of the R-6 oil-shale zone, Green River Formation, Piceance Creek basin, Colorado
- Rutherford, David W. A geochemical baseline survey of selected toxic elements in surficial materials in the vicinity of the Paraho demonstration oil shale processing plant, Anvil Points, Garfield County, Colorado
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Shannon, Spencer S., Jr.

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- Snyder, G. L. Analyses of rock and stream-sediment samples, Mount Zirkel Wilderness and northern Park Range vicinity, Jackson and Routt counties, Colorado
- Tweto, Ogden. Geologic map of the Craig 1 degrees by 2 degrees quadrangle, northwestern Colorado
- Wilson, Mark V. H. Eocene freshwater fishes from the Coalmont Formation, Colorado

Jefferson County

- Basan, Paul B. Road log Basan, Paul B. Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado
- Bryant, Bruce. Geologic map of the Denver 1 degrees by 2 degrees quadrangle, North-central Colorado; Sheet 1, Geology; Sheet 2, Structure
- Chamberlain, C. Kent. The trace fossils of the Cretaceous Dakota hogback along Alameda Avenue, west of Denver, Colorado (Stop 4)
- Colton, R. B. Preliminary map of landslide deposits, Denver 1 degrees by 2 degrees Quadrangle, Colorado
- Gibbs, J. W. Hydrologic data for urban storm runcff from nine sites in the Denver metropolitan area, Colorado
- Hall, D. C. Effects of residential wastewater treatment systems on ground-water quality in West-central Jefferson County, Colorado
- Heinrich, E. William. Kindreds and districts of rare-mineral pegmatites in Colorado
- Hsieh, Paul A. A reservoir analysis of the Denver earthquakes; a case of induced seismicity
- Lindstrom, Linda Jane. Stratigraphy of the South Platte Formation (Lower Cretaceous), Eldorado Springs to Golden, Colorado, and channel sandstone distribution of the J Member

- Pearl, Richard M. The dinosaur menagerie
- Scott, Robert W. Introduction Spence, William. Review of the
- Spence, William. Review of the Denver Water Department induced seismicity program at Strontia Springs, Colorado
- U. S. Geological Survey. Land use and land cover, 1975-76, Denver, Colorado
- Weimer, R. J. Wattenberg Field,
 - paleostructure-stratigraphic trap, Denver Basin, Colorado

Kiowa County

- Anderson, David L. Soil survey of Kiowa County, Colorado Anonymous. Survey helps locate
- oil, gas in SE Colorado Avis, Loren E. Promising Morrow sandstone discoveries in southeastern Colorado
- Borman, R. G. Water-level records for the northern High Plains of Colorado, 1977-81
- McCaslin, John C. New wildcatting developing in southeastern, eastern Colorado
- McCaslin, John C.
- Mississippian play advancing in Colorado area
- Mustard, M. H. Hydrology and chemical quality of ground water in Kiowa County, Colorado

Kit Carson County

- Avis, Loren E. Promising Morrow sandstone discoveries in southeastern Colorado
- Borman, R. G. Water-level records for the nortnern High Plains of Colorado, 1977-81
- Rountree, Russ. Drilling to increase in NE Colorado
- Union Carbide Corporation, Oak Ridge Gaseous Diffusion Plant. Hydrogeochemical and stream sediment reconnaissance basic data for Limon Quadrangle, Colorado

La Plata County

- Baars, Don L. Third day; road log from Moab, Utah to Durango, Colorado via Dead Horse Point, Utah
- Baker, L. A. Predicted limnology of a proposed reservoir in Southwest Colorado
- Bauer, Ronald F. Soil survey of Piedra area, Colorado; parts of Archuleta,

Hinsdale, La Plata, Mineral, and Rio Grande counties

- Dames and Moore. Coal resource occurrence and coal development potential maps of the Adobe Downs Ranch Duadrangle, San Juan County, New Mexico, and La Plata County, Colorado
- Dames and Moore. Coal resource occurrence and coal oevelopment potential maps of the La Plata Ouadrangle. San Juan County, New Mexico, and La Plata County, Colorado
- Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study
- Kirkham, Robert M. Geotechnical aspects of the search for a permanent repository for the Durango uranium tailings pile
- McCaslin, John C. San Juan Basin gas area yields oil find
- Moore, D. W. Generalized surficial geologic map of the Basin Mountain Quadrangle, Colorado
- Petersen, Kenneth Lee. 10,000 years of climatic change reconstructed from fossil pollen, La Plata Mountains,
- southwestern Colorado Scott, G. R. Generalized
- surficial geologic map of the Kline Quadrangle, Colorado
- Tewksbury, Barbara Jarvis. Polyphase deformation and contact relationships of the Precambrian Uncompangre Formation, Needle Mountains, southwestern Colorado
- Ullrich, Dick. First day; road log from Durango, Colorado, to Telluride, Colorado, via Silverton and Duray, Colorado

Warren, Richard G. Data release for intermediate-density hydrogeochemical and stream sediment sampling in the Vallecito Creek special study area, Colorado, including concentrations of uranium and forty-six additional elements

Lake County Anonymous. Monitoring program measures slope movement at Climax Mine Costa, John E. Debris flows in small mountain stream
channels of Colorado and
their hydrologic
implications

- Ekiert, Franciszek. Zloza molibdenu Climax i Henderson w St. Zjednoczonych
- Vick, Steven G. Morphology and the role of landsliding in formation of some rock glaciers in the Mosquito Range, Colorado
- Voynick, Steve. Rockhounding in the sky
- White, W. H. Character and origin of climax-type molybdenum deposits

Larimer County Collins, Donley S. Diamond collecting in northern Colorado

- Heinrich, E. William. Kindreds and districts of rare-mineral pegmatites in Colorado
- Lazaro, Rogelio Cruz. Adaptive real-time streamflow forecasting model for hydrosystem operational planning
- McCaslin, John C. Denver Basin activity continues fast pace
- Radbruch-Hall, D. H. Gravitational spreading of steep-sided ridges ("sackung") in western United States
- Rountree, Russ. Deeper zones may have big oil reserves
- Smith, C. B. Rb/Sr isotopic ratios in selected lower crust-upper mantle nodules from Colorado-Wyoming kimberlites
- Suryanto, Untung. Stratigraphy and petroleum geology of the J Sandstone in portions of Boulder, Larimer, and Weld counties, Colorado
- Tweto, Ogden. Geologic map of the Craig 1 degrees by 2 degrees quadrangle, northwestern Colorado
- U. S. Bureau of Reclamation,

Water and Power Resources Service, Lower Missouri Region. Colorado-Big Thompson-Windy Gap projects, Colorado

Las Animas County Flores, Romeo M Characteristics of deltaic deposits in the Cretaceous Pierre Shale, Trinidad Sandstone, and Vermejo Formation, Raton Basin,

Colorado Taylor, Andrew M. Depositional environments of the Dakota Sandstone in southeastern Colorado

Lincoln County Anonymous. Survey helps locate oil, gas in SE Colorado Borman, R. G. Water-level records for the northern High Plains of Colorado, 1977-81 Rountree, Russ. Drilling to

increase in NE Colorado Union Carbide Corporation, Dak Ridge Gaseous Diffusion Plant. Hydrogeochemical and stream sediment reconnaissance basic data for Limon Ouadrangle, Colorado

Logan County Borman, R. G. Water-level records for the northern High Plains of Colorado, 1977-81

- Galbreath, Edwin C. An apternodontid (Insectivora) from the Chadronian Dligocene of northeastern Colorado
- Korth, William W. Metadjidaumo (Eomyidae, Rodentia) from Colorado and Wyoming
- McCaslin, John C. Denver Basin activity continues fast pace
- Morel-Seytoux, H. J. Design and merit of a river-aquifer model for optimal use of agricultural water
- Rountree, Russ. Drilling to increase in NE Colorado
- Scott, G. R. Paleovalley and geologic map of northeastern Colorado
- U. S. Bureau of Reclamation, Water and Power Resources Service, Lower Missouri Region. Colorado-Big Thompson-Windy Gap projects, Colorado

McKinley County Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study McCaslin, John C. San Juan Basin gas area yields oil find Mesa County Campbell, John A. Uranium mineralization and depositional facies in the Permian rocks of the northern Paradox Basin, Utah and Colorado Cashion, W. B. Geologic and structure map of the Grand Junction Quadrangle. Colorado and Utah Cole, Rex D. Sulfur-isotope variations in marginal-lacustrine rocks of the Green River Formation, Colorado and Utah Colorado Energy Research Institute. Oil shale 1982; a technology and policy primer Gibboney, Melissa J. Paleoclimatic interpretations of the

- interpretations of the Permian Cutler Formation in western Colorado from a comparison of size-composition trends of the Cutler Formation and Holocene sands
- Gill, Douglas. Oil and gas bigger than shale in Grand Junction
- Hildebrand, R. T. Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado
- Johnson, Ronald C. Cretaceous and Tertiary history and resources of the Piceance Creek basin, western Colorado
- Larson, E. E. Paleomagnetism of the Moenkopi Formation, Colorado Plateau; basis for long-term model of acquisition of chemical remanent magnetism in red beds
- Lohman, S. W. The geologic story of Colorado National Monument
- Miller, Marvin E. Final report on PCB usage at the Grand Junction area office facility
- Nuccio, V. F. Map showing drill stem test and perforation recoveries of the Upper Cretaceous

Mesaverde Group, Piceance Creek basin, Colorado

- O'Sullivan, R. B. Stratigraphic sections of some Jurassic rocks from near Moab, Utah, to Slick Rick, Colorado
- Palmerton, J. B. Postshot in situ material property tests at the Mixed Company site, Colorado
- Rasmussen, T. E. A new herbivorous sphenodontid (Rhynchocephalia; Reptilia) from the Jurassic of Colorado
- Rasmussen, T. E. A new species of triconodont mammal from the Upper Jurassic of Colorado
- Scott, G. L. Seismic surveying, salt anticline ^ region, Paradox Basin
- Walker, Theodore R. Nature and origin of hematite in the Moenkopi Formation (Triassic), Colorado Plateau; a contribution to the origin of magnetism in red beds
- Whitney, J. W. Surficial geologic map of the Grand Junction 1 degrees by 2 degrees quadrangle, Colorado and Utah

Mineral County

- Bauer, Ronald F. Soil survey of Piedra area, Colorado; parts of Archuleta, Hinsdale, La Plata, Mineral, and Rio Grande counties Chua, Siong-Huat. Optimal estimators of mean areal precipitation in regions of
- orographic influence Ellwood, Brooks B. Estimates of flow direction for calc-alkaline welded tuffs and paleomagnetic data reliability from anisotropy of magnetic susceptibility measurements; central San Juan Mountains, Southwest
- Colorado Woods, T. L. Fluid-inclusion data on samples from Creede, Colorado, in relation to mineral paragenesis

Moffat County

Bell, M. W. Drilling-mud emanometry; a new technique for uranium exploration

Bressler, Stephen L. Preliminary paleomagnetic poles and correlation of the Proterozoic Uinta Mountain Group, Utah and Colorado Carter, Thomas E. A geologic report on the Sand Wash Drilling Project, Moffat and Routt counties, Colorado

- Colorado Energy Research Institute. Oil shale 1982; a technology and policy primer
- Dyni, John R. Lacustrine turbidites in the Green River Formation, northwestern Colorado
- Hail, W. J., Jr. Low-grade uranium in the Fort Union Formation, Crooked Wash area, northwestern Colorado
- Hildebrand, R. T. Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado
- Hildebrand, R. T. Geology and chemical analyses of coal, Mesaverde Group (Cretaceous), lower White River coal field, Moffat and Rio Blanco counties, Colorado
- Johnson, Ronald C. Cretaceous and Tertiary history and resources of the Piceance Creek basin, western Colorado
- Kilkelly, M. K. Revegetation studies on Tosco II and USBM retorted oil shales
- Luft, S. J. Measured sections of the Browns Park Formation (Miocene) in Moffat County, Colorado
- Martinez-Hernandez, Enrique. Palinologia del carbon y ambientes de deposito en el Cretacico superior, Noroeste de Colorado, EUA
- Murray, D. Keith. Upper Cretaceous (Campanian) coal resources of Western Colorado
- Nutt, C. J. Geologic map and coal deposits of the western part of Ninemile Gap Quadrangle and the southern part of Axial Quadrangle, Moffat and Rio Blanco counties, Colorado
- Pearl, Richard M. The great quarry
- Reheis, M. C. Geologic map and coal resources of the Easton Gulch Quadrangle, Moffat County, Colorado
- County, Colorado Rowley, P. D. Geologic map of the Vernal 1 degrees by 2 degrees Quadrangle, Colorado, Utah, and Wyoming
- Sears, J. W. Tectonic evolution of lower Proterozoic rocks, Uinta Mountains, Utah and Colorado

- Shannon, Spencer S., Jr. Detailed uranium geochemical stream sediment survey data release for selected portions of the Craig NTMS Ouadrangle, Colorado, and Rawlins NTMS Ouadrangle, Wyoming, including concentrations of forty-five additional elements
- Steele, T. D. Assessment of impacts of proposed coal-resource and related economic development on water resources, Yampa River basin, Colorado and Wyoming; a summary
- Turk, J. T. Water-quality characteristics of six small, semiarid watersheds in the Green River coal region of Colorado
- Tweto, Dgden. Geologic map of the Craig 1 degrees by 2 degrees quadrangle, northwestern Colorado

Montezuma County

- Baars, Don L. Third day; road log from Moab, Utah to Durango, Colorado via Dead Horse Point, Utah Frenzel, P. F. Preliminary
- Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study
- Krivanek, Connie M. New fields and exploration drilling, Paradox Basin, Utah and Colorado
- Lohman, S. W. Ancient drainage changes in and south of Unaweep Canyon, southwestern Colorado
- McCaslin, John C. Drilling in Colorado continues fast pace Petersen, Kenneth Lee. 10,000
- years of climatic change reconstructed from fossil pollen, La Plata Mountains, southwestern Colorado
- Montrose County Bolivar, Stephen L. Multisource data set integration and characterization of uranium mineralization for the Montrose Quadrangle, Colorado
- Brown, Phillip. Interrelationship of groundwater with overburden and reclaimed spoil at an active surface mine in "southwestern Colorado Campbell, John A. Uranium mineralization and

depositional facies in the Permian rocks of the northern Paradox Basin, Utah and Colorado

- Chenoweth, William L. The uranium-vanadium deposits of the Uravan mineral belt and adjacent areas, Colorado and Utah
- Goodknight, Craig S. Montrose Quadrangle, Colorado
- Hunter, William R. Soil survey of Paonia area. Colorado; parts of Delta, Gunnison, and Montrose counties
- Krivanek, Connie M. New fields and exploration drilling, Paradox Basin, Utah and Colorado
- Learned, Elizabeth A. The hanging flume of Dolores River canyon, Montrose County, Colorado
- Maassen, Larry W. Detailed uranium hydrogeochemical and stream sediment reconnaissance data release for the eastern portion of the Montrose NTMS Quadrangle, Colorado, including concentrations of forty-five additonal elements
- Pugh, Clifford A. Hydraulic model studies of landslide-generated water waves: Morrow Point Reservoir
- Scott, G. L. Seismic surveying, salt anticline region, Paradox Basin
- Tweto, Ogden. Preliminary geologic map of the Montrose 1 degrees by 2 degrees quadrangle, southwestern Colorado
- Wecksung, George W. Integration and analysis by digital image processing techniques of multiple geological, geochemical, and geophysical data sets for the Montrose Quadrangle, Colorado
- Weir, G. W. Incomplete manuscript on stratigraphy and structural geology and uranium-vanadium and copper deposits of the Lisbon Valley area, Utah-Colorado

Morgan County Burns, A. W. Simulated interactions between the proposed narrows reservoirs and the water-table aquifer along the South Platte River, Morgan County, Colorado Morel-Seytoux, H. J. Design and merit of a river-aquifer model for optimal use of agricultural water

- Scott, G. R. Paleovalley and geologic map of northeastern Colorado
- U. S. Bureau of Reclamation, Water and Power Resources Service, Lower Missouri Region. Colorado-Big Thompson-Windy Gap projects, Colorado

Dtero County Little, J. R. Characterization of floodflows along the Arkansas River without regulation by Pueblo Reservoir, Portland to John Martin Reservoir,

southeastern Colorado Taylor, Andrew M. Depositional environments of the Dakota Sandstone in southeastern .Colorado

Duray County

- Armstrong, B. R. A quantitative analysis of avalanche hazard on U. S. Highway 550, southwestern Colorado
- Billings, Patty. Fission track annealing related to vein mineralization and hydrothermal alteration, Duray County, Colorado
- Costa, John E. Debris flows in small mountain stream channels of Colorado and their hydrologic implications
- Goodknight, Craig S. Montrose Duadrangle, Colorado Luedke, R. G. Geologic map of
- Luedke, R. G. Geologic map of the Uncompangre (Duray) mining district, southwestern Colorado
- Maassen, Larry W. Detailed uranium hydrogeochemical and stream sediment reconnaissance data release for the eastern portion of the Montrose NTMS Ouadrangle, Colorado, including concentrations of forty-five additonal elements
- McCarthy, Kevin F. Duray, Colorado; resource characteristics and future plans
- Tweto, Ogden. Preliminary geologic map of the Montrose 1 degrees by 2 degrees quadrangle, southwestern Colorado
- Ullrich, Dick. First day: read log from Durango, Colorado, to Telluride, Colorado, via

Silverton and Duray, Colorado

Weimer, Paul. The bedrock geology of the Ridgway area, Ouray County, Colorado

Park County

- Boler, F. M. Principal facts for gravity stations in the Pueblo 1 degrees by 2 degrees quadrangle, South-central Colorado
- Bryant, Bruce. Geologic map of the Denver 1 degrees by 2 degrees quadrangle, North-central Colorado; Sheet 1, Geology; Sheet 2, Structure
- Colton, R. B. Preliminary map of landslide deposits, Denver 1 degrees by 2 degrees Quadrangle, Colorado
- Cortellini, Edmund A. Geology of some intrusions of the Guffey volcanic center
- Dickinson, K. A. Oligocene volcanic rocks; possible source of uranium in epigenetic deposits in parts of Chaffee, Park, and Fremont counties, Colorado
- Ludington, Steve. The Redskin Granite: evidence for thermogravitational diffusion in a Precambrian granite batholith
- Spahr, N. E. Variations in climatic characteristics as related to evapotranspiration in South Park, central Park County, Colorado
- Vick, Steven G. Morphology and the role of landsliding in formation of some rock glaciers in the Mosquito Range, Colorado

Phillips County

- Borman, R. G. Water-level records for the northern High Plains of Colorado, 1977-81
- Rountree, Russ. Drilling to increase in NE Colorado
- Scott, G. R. Paleovalley and geologic map of northeastern Colorado

Pitkin County

- Campbell, D. L. Aeromagnetic and complete Bouguer gravity anomaly maps of the Hunter-Fryingpan Wilderness Area, Pitkin County, Colorado
- Costa, John E. Debris flows in small mountain stream channels of Colorado and their hydrologic

implications

- Hildebrand, R. T. Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado
- Johnson, Ronald C. Cretaceous and Tertiary history and resources of the Piceance Creek basin, western Colorado
- Ludington, Steve. Geologic map of the Hunter-Fryingpan wilderness area and the Porphyry Mountain wilderness study area, Pitkin County, Colorado
- Ludington, Steve. Mineral resource potential of the Hunter-Fryingpan Wilderness^{*} and the Porphyry Mountain wilderness study area, Ditking County, Colorado
- Pitkin County, Colorado Reeves, James J. Seismic seam waves in the coal basin of Colorado

Prowers County

- Avis, Loren E. Promising Morrow sandstone discoveries in southeastern Colorado
- Borman, R. G. Water-level records for the northern High Plains of Colorado, 1977-81
- McCaslin, John C. New wildcatting developing in southeastern, eastern Colorado
- McCaslin, John C. Mississippian play advancing in Colorado area

Pueblo County

- Basan, Paul B. Codell Member of the Carlile Shale at Liberty Point and in the vicinity of Pueblo, Colorado (Stop 1)
- Basan, Paul B. Road log Basan, Paul B. Trace fossils of mearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado
- Boler, F. M. Principal facts for gravity stations in the Pueblo 1 degrees by 2 degrees quadrangle, South-central Colorado
- Cain, Doug. Waste-assimilation capacity of the Arkansas River in Pueblo County, Colorado, as it relates to water-quality guidelines and stream classification
- Fischer, A. G. Gilbert; bedding rhythms and

geochronology

- Little, J. R. Characterization of floodflows along the Arkansas River without regulation by Pueblo Reservoir, Portland to John Martin Reservoir, southeastern Colorado
- McLane, Michael. Upper Cretaceous coastal deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale
- Rudd, Lawrence P. An analysis of the hillslope-floodplain boundary
- Scott, Robert W. Introduction

Rio Blanco County

- Alley, W. M. The relative importance of ground-water and surface-water supplies to oil-shale development, Piceance Basin, Colorado Boardman, Charles R.
- Evaluation of low-permeability gas-bearing formations in Rio Blanco County. Colorado
- County, Colorado Cashion, W. B. Geologic and structure map of the Grand Junction Quadrangle, Colorado and Utah
- Cole, Rex D. Sulfur-isotope variations in marginal-lacustrine rocks of the Green River Formation, Colorado and Utah
- Colorado Energy Research Institute. Oil shale 1982; a technology and policy primer
- Dean, W. E. Geochemical surveys of oil shale in the Piceance Creek basin, Colorado
- Donnell, J. R. Preliminary geologic map of the Sagebrush Hill Quadrangle, Rio Blanco County, Colorado
- Dula, William F., Jr. Correlation between deformation lamellae, microfractures, macrofractures, and in situ stress measurements, White River Uplift, Colorado
- Dyni, John Richard. Geology of the nahcolite deposits and associated oil shales of the Green River Formation in the Piceance Creek basin, Colorado
- Giauque, R. D. Characterization of two core holes from the Naval Dil Shale Reserve Number 1
- Hail, W. J. Geology and oil-shale resources in the central Roan Plateau, Colorado

- Hail, W. J., Jr. Low-grade uranium in the Fort Union Formation, Crooked Wash area, northwestern Colorado
- Hildebrand, R. T. Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado
- Hildebrand, R. T. Geology and chemical analyses of coal, Mesaverde Group (Cretaceous), lower White River coal field, Moffat and Rio Blanco counties, Colorado
- Johnson, Douglas Edward. Effect of rehabilitation practices on plant establishment in the Piceance Basin of Colorado
- Johnson, Ronald C. Cretaceous and Tertiary history and resources of the Piceance Creek basin, western Colorado
- Johnson, Ronald C. Stratigraphic evidence for a deep Eocene Lake Uinta, Piceance Creek basin, Colorado
- Kilkelly, M. K. Revegetation studies on Tosco II and USBM retorted oil shales
- Kimball, B. A. Geochemistry of spring water, southeastern Uinta Basin, Utah and Colorado
- McCaslin, John C. Natomas plans deep Colorado wildcat
- Murray, D. Keith. Upper Cretaceous (Campanian) coal resources of Western Colorado
- Nuccio, V. F. Map showing drill stem test and perforation recoveries of the Upper Cretaceous Mesaverde Group, Piceance Creek basin, Colorado
- Nutt, C. J. Geologic map and coal deposits of the western part of Ninemile Gap Quadrangle and the southern part of Axial Quadrangle, Moffat and Rio Blanco counties, Colorado
- O'Sullivan, R. B. Histograms showing oil-shale yield in two core holes in the No Name Ridge Quadrangle of western Colorado
- O'Sullivan, R. B. Preliminary geologic map of the McCarthy Gulch Quadrangle, Rio Blanco and Garfield counties, Colorado
- Pisarowicz, James A. Empirical

confirmation of Curl's (1974) flow velocity calculations

- Pitman, J. K. Isopach, structure contour, and resource maps of the R-6 oil-shale zone, Green River Formation, Piceance Creek basin, Colorado
- Rio Blanco Oil Shale Company. Rio Blanco Oil Shale Company; Tract C-a; modification to the detailed development plan; Lurgi demonstration project
- Robson, S. G. Hydrogeochemistry and simulated solute transport, Piceance Basin, northwestern Colorado
- Rowley, P. D. Geologic map of the Vernal 1 degrees by 2 degrees Quadrangle, Colorado, Utah, and Wyoming Saether, D. M. Fluorine; its
- mineralogical residence in the oil shale of the Mahogany Zone of the Green River Formation, Piceance Creek basin, Colorado, U.S.A.
- Shannon, Spencer S., Jr. Detailed uranium geochemical stream sediment survey data release for selected portions of the Craig NTMS Quadrangle, Colorado, and Rawlins NTMS Quadrangle, Wyoming, including concentrations of forty-five additional elements
- Slawson, G. C. Evaluation of ground-water pumping and bailing methods; application in the oil shale industry
- Smith, M. C. Structure contours and overburden on the top of the Mohogany Bed, Green River Formation, eastern part of the Uinta Basin, Uintah, Duchesne, and Carbon counties, Utah
- Smith, M. C. Results of core drilling in 1978 for oil shale in the Eocene Green River Formation, Piceance Creek area of western Colorado
- Swolfs, H. S. Field mechanical properties of a jointed sandstone
- Tuttle, Michele. Element baselines for the Piceance Creek Basin, Colorado Tweto, Ogden. Geologic map of the Craig 1 degrees by 2
- degrees quadrangle, northwestern Colorado Verbeek, Earl R. Unusual luminescence of calcite from

the Piceance Creek basin, Rio Blanco Co., northwestern Colorado

- Weichman, Bernard E. Mining in the Saline Zone
- Whitney, J. W. Surficial geologic map of the Grand Junction 1 degrees by 2 degrees quadrangle, Colorado and Utah
- Ziemba, E. A. Rio Blanco Oil Shale Company Tract C-a, Rio Blanco County, Colorado; summary of geology and current development

Rio Grande County

- Bauer, Ronald F. Soil survey of Piedra area, Colorado; parts of Archuleta, Hinsdale, La Plata, Mineral, and Rio Grande counties
- Ellwood, Brooks B. Estimates of flow direction for calc-alkaline welded tuffs and paleomagnetic data reliability from anisotropy of magnetic susceptibility measurements; central San Juan Mountains, Southwest Colorado

Routt County

- Carter, Thomas E. A geologic report on the Sand Wash Drilling Project, Moffat and Routt counties, Colorado
- Covay, K. J. Quality of ground water in Routt County, northwestern Colorado
- Ellis, S. R. Effects of effluents from a coal-fired electric-generating powerplant on local ground water near Hayden, Colorado
- Hildebrand, R. T. Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado
- Martinez-Hernandez, Enrique. Palinologia del carbon y ambientes de deposito en el Cretacico superior, Noroeste de Colorado, EUA
- Shannon, Spencer S., Jr. Detailed uranium geochemical stream sediment survey data release for selected portions of the Craig NTMS Quadrangle, Colorado, and Rawlins NTMS Quadrangle, Wyoming, including concentrations of forty-five additional elements
- and stream-sediments amples, Mount Zirkel Wilderness and

northern Park Range vicinity, Jackson and Routt counties, Colorado

- Steele, T. D. Assessment of impacts of proposed coal-resource and related economic development on water resources, Yampa River basin, Colorado and Wyoming; a summary
- Turk, J. T. Water-quality characteristics of six small, semiarid watersheds in the Green River coal region of Colorado
- Tweto, Dgden. Geologic map of the Craig 1 degrees by 2 degrees quadrangle, northwestern Colorado

Saguache County Afifi, Abdulkader M. Stratigraphy, petrology, and structure of Precambrian metavolcanic rocks in the Iris District, Gunnison and Saguache counties, Colorado

Andrews, Sarah. Sedimentology of Great Sand Dunes, Colorado

Boler, F. M. Principal facts for gravity stations in the Pueblo 1 degrees by 2 degrees quadrangle, South-central Colorado

- Bolivar, Stephen L. Multisource data set integration and characterization of uranium mineralization for the Montrose Quadrangle, Colorado
- Goodknight, Craig S. Montrose Quadrangle, Colorado
- Goodknight, Craig S. Uranium in the Gunnison Country, Colorado
- Grout, Marilyn Ann. Rockwall erosion in the northern Sangre de Cristo Mountains, Colorado: contributing factors, sequence, and rate Hutchinson, Robert M.

Hutchinson, Robert M. Structure and petrology of Cochetopa Pluton and its metamorphic wallrocks, Saguache County, Colorado

Maassen, Larry W. Detailed uranium hydrogeochemical and stream sediment reconnaissance data release for the eastern portion of the Montrose NTMS Ouadrangle, Colorado, including concentrations of forty-five additonal elements

McCulla, Michael. The genesis of the Los Ochos uranium deposits, Saguache County, Colorado Nash, J. Thomas. Geology of dolomite-hosted uranium deposits at the Pitch Mine, Saguache County, Colorado Tweto, Dgden. Preliminary geologic map of the Montrose 1 degrees by 2 degrees quadrangle, southwestern Colorado

- San Juan County Armstrong, B. R. A quantitative analysis of avalanche hazard on U. S. Highway 550, southwestern Colorado
- Baars, Don L. Third day; road log from Moab, Utah to Durango, Colorado via Dead Horse Point, Utah
- Campbell, John A. Uranium mineralization and depositional facies in the Permian rocks of the northern Paradox Basin, Utah and Colorado
- Chua, Siong-Huat. Dptimal estimators of mean areal precipitation in regions of orographic influence
- Dames and Moore. Coal resource occurrence and coal development potential maps of the Adobe Downs Ranch Quadrangle, San Juan County, New Mexico, and La Plata County, Colorado
- Dames and Moore. Coal resource occurrence and coal development potential maps of the La Plata Ouadrangle, San Juan County, New Mexico, and La Plata County, Colorado
- Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study
- Heran, W. D. Contour maps of uranium, uranium-thorium ratio, and total field magnetics, Lake City area, San Juan Mountains, Colorado
- Heran, W. D. Stacked profiles of data from a helicopter airborne radiometric and magnetic survey of the Lake City area, San Juan Mountains, Colorado
- Krivanek, Connie M. New fields and exploration drilling, Paradox Basin, Utah and Colorado
- Langston, David J. The geology and geochemistry of the northeasterly gold veins, Sunnyside Mine, San Juan County, Colorado
- Larson, E. E. Paleomagnetism of the Moenkopi Formation. Colorado Plateau; basis for long-term model of acquisition of chemical

remanent magnetism in red beds

- Maher, L. J., Jr. Pollen evidence suggests that climatic changes in the Colorado Rockies during the last 5000 years were out of phase with those in the northeastern United States
- McCaslin, John C. San Juan Basin gas area yields oil find
- Molenaar, C. M. Second day; road log from Telluride, Colorado to Moab, Utah, via Paradox Valley and Lisbon Valley
- Rountree, Russ. Bug Field discovery spurs new interest in Paradox Basin
- Scott, G. L. Seismic surveying, salt anticline region, Paradox Basin
- Tewksbury, Barbara Jarvis. Polyphase deformation and contact relationships of the Precambrian Uncompangre Formation, Needle Mountains, southwestern Colorado
- Ullrich, Dick. First day; road log from Durango, Colorado, to Telluride, Colorado, via Silverton and Duray, Colorado
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