# **Information Series 19**

# 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

by

American Geological Institute



Colorado Geological Survey Department of Natural Resources Denver, Colorado 1983

\$7.00

i i

#### CONTENTS

Serials List	1
Bibliography	7
Subject Index	47
County Index	89
Rock-Unit Index	103

### 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

iv

#### BIBLIOGRAPHY AND INDEX OF COLORADO GEOLOGY

#### 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.

Workman, S. M. see Soltanpour, P. N.

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

Young, C. see Murri, W. J.

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.

Zachara, J. M. see Wildung, R. E.

- 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.

## SUBJECT INDEX

absolute age see also geochronology; isotopes absolute age--dates gneisses: New K-Ar ages from the Eldora-Bryan Stock and Idaho Springs Formation, Front Range, Colorado (Brookins, Douglas G.) igneous rocks: Ages of igneous rocks in the South Park-Breckenridge region, Colorado, and their relation to the tectonic history of the Front-Range uplift (Bryant, Bruce) intrusive rocks: Geochemistry of a contact metamorphosed zone; implications for radwaste disposal in crystalline rocks (Brookins, Douglas G.) kimberlite: Fission-track dating of the Green Mountain kimberlite diatreme, near Boulder, Colorado (Larson, E. E.) aeromagnetic surveys see magnetic surveys under geophysical surveys aluminum--geochemistry carbonate rocks: Geology of dolomite-hosted uranium deposits at the Pitch Mine, Saguache County, Colorado (Nash, J. Thomas) aluminum ores see also under economic geology ammonites see Mollusca aquifers see under ground water archaeology see also under stratigraphy; see also under stratigraphy under Pleistocene archeology see archaeology under stratigraphy; see archaeology under stratigraphy under Pleistocene areal geology bibliography: Bibliography of the geology of the Green River Formation,

Colorado, Utah, and Wyoming, to March 1, 1977 (Mullens, Marjorie C.)

- -- Bibliography of theses and dissertations on Colorado, 1968-1980 (Kirk, Cheryl L.)
- Colorado National Monument: The geologic story of Colorado National Monument (Lohman, S. W.)
- guidebook: Depositional systems, Upper Cretaceous Mancos Shale and Mesaverde Group, northwestern Colorado (Boyles, J. Michael)
- -- Field trip guide; Keystone to Denver (Ott, H. L.)
- -- Mileage log (Kiteley, Louise W.)
- -- Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.)
- Gunnison River: Geologic and physiographic highlights of the Black Canyon of the Gunnison River and vicinity, Colorado (Hansen, Wallace R.)
- maps: Geologic and structure map of the Grand Junction Quadrangle, Colorado and Utah (Cashion, W. B.)
- -- Geologic map of the Craig 1 degrees by 2 degrees quadrangle, northwestern Colorado (Tweto, Ogden)
- -- Geologic map of the Denver 1 degrees by 2 degrees quadrangle, North-central Colorado; Sheet 1, Geology; Sheet 2, Structure (Bryant, Bruce) -- Geologic map of the
- -- Geologic map of the Hunter-Fryingpan wilderness area and the Porphyry Mountain wilderness study area, Pitkin County, Colorado

(Ludington, Steve)

- -- Geologic map of the Mount Richthofen Quadrangle and the western part of the Fall River Pass Quadrangle, Grand and Jackson counties, Colorado (O'Neill, J. M.)
- -- Geologic map of the Uncompangre (Ouray) mining district, southwestern Colorado (Luedke, R. G.)
- -- Geologic map of the Vernal 1 degrees by 2 degrees Quadrangle, Colorado, Utah, and Wyoming (Rowley, P. D.)
- -- Precambrian rocks of southwestern United States and adjacent areas of Mexico (Condie, K. C.)
- -- Preliminary geologic map of the Circle Dot Gulch Quadrangle, Garfield County, Colorado (Hail, W. J., Jr.)
- -- Preliminary geologic map of the Desert Gulch Quadrangle, Garfield County, Colorado (Johnson, R. C.)
- -- Preliminary geologic map of the McCarthy Gulch Quadrangle, Rio Blanco and Garfield counties, Colorado (O'Sullivan, R. B.)
- -- Preliminary geologic map of the Montrose 1 degrees by 2 degrees quadrangle, southwestern Colorado (Tweto, Ogden)
- -- Preliminary geologic map of the Sagebrush Hill Quadrangle, Rio Blanco County, Colorado (Donnell, J. R.)
- Paradox Basin: First day; road log from Durango, Colorado, to Telluride, Colorado, via Silverton and Duray, Colorado (Ullrich, Dick)
- -- Geology of the Paradox Basin (Wiegand, Del L.)

- -- Second day; road log from Telluride, Colorado to Moab, Utah, via Paradox Valley and Lisbon Valley (Molenaar, C. M.)
- -- Third day; road log from Moab, Utah to Durango, Colorado via Dead Horse Point, Utah (Baars, Don L.) *regional*: Our trip to
- Indian country; 1981 (Haik, Vernon)
- road log: 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 (Molenaar, C. M.)
- -- Second day; road log from Grand Junction to Glenwood Canyon and return to Grand Junction (Young, R. G.)
- -- Supplemental road log No. 1; Montrose to Durango, Colorado (Lee, K.)
- -- Supplemental road log No. 2; Gunnison to Saguache, Colorado (Epis, Rudy C.)
- -- Third day; Road log from Grand Junction to crested Butte via Delta, Montrose and Gunnison (Goodknight, Craig S.)
- Uncompany District: Geologic map of the Uncompany (Duray) mining district, southwestern Colorado (Luedke, R. G.)
- artifacts see archaeology under stratigraphy;see archaeology under stratigraphy under Pleistocene
- associations see also survey organizations
- atmosphere--geochemistry hydroxyl ion: Vertical column abundance of atmospheric OH at solar maximum from Friz Peak (Burnett, Clyde R.)
- automatic data processing--economic geology base metals: Los Alamos "sandwich" finds base metals in Colorado (Anonymous) mineral exploration: Uranium resource assessment through
  - statistical analysis of exploration, geochemical, and other data; final

report (Koch, George S., Jr.)

- uranium ores: Multisource data set integration and characterization of uranium mineralization for the Montrose Quadrangle, Colorado (Bolivar, Stephen L.)
- -- Uranium resource assessment through statistical analysis of exploration geochemical and other data (Koch, George S., Jr.)
- water resources: Economics of declining water supplies in the Ogallala Aquifer (Warren, John)
- automatic data processing--engineering geology
- explosions: Computer simulation of fracture in small scale borehole experiments in oil shale (Murri, W. J.) rock mechanics:
- Subterranean stress engineering experiments (Campbell, J. R.)
- waterways: Adaptive real-time streamflow forecasting model for hydrosystem operational planning (Lazaro, Rogelio Cruz)
- Cruz) automatic data processing-environmental geology pollution: Computer
- simulation of movement of DIMP-contaminated groundwater near the Rocky Mountain Arsenal, Colorado (Robson, S. G.)
- automatic data processing--geophysical methods
- well-logging: Natural gamma ray spectral logging aids; Granite Wash Reservoir evaluation (Schenewerk, Philip Andrew)
- base metals see also under economic geology;see also under economic geology under automatic data processing
- **bibliography** see also under areal geology; economic geology
- Bivalvia see under Mollusca boron--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.) boron--analysis plasma emission spectroscopy: Boron analysis in soil extracts and plant tissue by plasma emission spectroscopy (Gestring, W. D.) brachiopods--biostratigraphy Devonian: Lower and Middle Devonian continental-shelf rocks of the western United States (Johnson, John G.) burrows see ichnofossils calcite see also under carbonates under minerals Canada see also Great Plains; **Rocky Mountains** Canada--structural geology deformation: Stress orientations from borehole wall fractures with examples from Colorado, East Texas, and northern Canada (Gough, D. I.) carbon--isotopes C-13/C-12: Source and migration of light hydrocarbons indicated by carbon isotopic ratios (Reitsema, R. H.) carbonate rocks see under sedimentary rocks carbonates see under minerals catalogs--hydrogeology data acquisition: Index to water data acquisition; Region 13, Rio Grande, 1980 (U. S. Geological Survey, Office of Water Data Coordination) -- Index to water data acquisition; Region 14, Upper Colorado, 1980 (U. S. Geological Survey, Office of Water Data Coordination) **Caves** see under solution features under geomorphology Cenozoic see also under geochronology Central America see also Nicaragua chemical analysis see also spectroscopy chemical analysis--methods electrolytic analysis: Nonlinear complex resistivity logging (Olhoeft, Gary R.) cirques see under glacial features under glacial geology clastic rocks see under sedimentary rocks

clastic sediments see under sediments

Devonian continental-shelf

-- Lower and Middle

rocks of the western

clay mineralogy--areal studies Burial and contact metamorphism in the Mancos

Shale (Nadeau, Paul H.) -- Paleoclimate reconstructed from

ŧ,

Paleosols; evidence from the Rocky Mountains and East Africa (Mahaney, W. C.)

-- Probable burial diagenetic and provenance effects on Dakota Group clay mineralogy, Denver Basin (Rettke, Robert C.)

-- Rockwall erosion in the northern Sangre de Cristo Mountains, Colorado; contributing factors, sequence, and rate (Grout, Marilyn Ann)

Great Basin: Early precipitation of authigenic clay by meteoric water, Pictured Cliffs, San Juan Basin, New Mexico and Colorado (Cumella, Stephen P.)

Rocky Mountains: Paleoclimate reconstructed from Paleosols; evidence from the Rocky Mountains and East Africa (Mahaney, W. C.)

clay mineralogy--experimental
 studies

mixed-layer minerals Micaceous vermiculite, glauconite, and mixed-layered kaolinite-montmorillonite examination by ultramicrotomy and high resolution electron

microscopy (Lee, S. Y.) **Clay mineralogy--mineral data**  *kaolinite*: Authigenic kaolinite and associated pyrite in chalk of the Cretaceous Niobrara

Formation, eastern Colorado (Pollastro, Richard M.) **Climate, ancient** see

paleoclimatology **Coal** see also under economic geology;see also under organic residues under

sedimentary rocks Colorado Plateau--areal

**geology** Colorado National Monument: The geologic story of

Colorado National Monument (Lohman, S. W.)

Colorado Plateau--economic geology molybdenum ores: Topaz

rhyolites; distribution, origin and significance to exploration for porphyry molybdenite deposits (Burt, Donald M.)

- uranium ores: Geology and recognition criteria for sandstone uranium deposits of the salt wash type, Colorado Plateau Province; final report (Thamm, John K.)
- -- Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau (Tyler, Noel)
- vanadium ores: Geology and recognition criteria for sandstone uranium deposits of the salt wash type, Colorado Plateau Province; final report (Thamm, John K.)

Colorado Plateau--stratigraphy Triassic: Nature and origin of hematite in the Moenkopi Formation (Triassic), Colorado Plateau; a contribution to the origin of magnetism in red beds (Walker, Theodore R.) -- Paleomagnetism of the Moenkopi Formation, Colorado Plateau; basis

for long-term model of acquisition of chemical remanent magnetism in red beds (Larson, E. E.) Colorado Plateau--structural

geology tectonics:

Pre-Carboniferous paleotectonics of the San Juan Basin (Stevenson, G. M.)

-- Pre-Laramide tectonic history of Colorado Plateau (Baars, D. L.)

concretions see under secondary structures under sedimentary structures

conglomerate see also under clastic rocks under

- sedimentary rocks congresses see symposia
- Connecticut--mineralogy oxides: A U. S. review; Chrysoberyl (Jacobson,
  - Mark I.)

Conodonts--biostratigraphy Devonian: Conodont biostratigraphy and depositional complexes of Upper Devonian cratonic-platform and continental-shelf rocks in the Western United States (Sandberg, Charles A.)

United States (Johnson, John G.) conservation see also under environmental geology copper ores see also under economic geology Cretaceous see also under stratigraphy crust see also under tectonophysics; see also under tectonophysics under Rocky Mountains crystal chemistry see also crystal growth; crystal structure; minerals crystal growth see also crystal structure; minerals crystal growth--oxides goethite: Amethyst quartz with goethite inclusions (Swindle, Lewis J.) crystal growth--sulfates barite: Water-clear barite from Muddy Creek, Colorado (Truebe, Henry A.) crystal structure see also crystal growth; minerals crystal structure--sheet silicates, clay minerals mixed-layer minerals: Micaceous vermiculite, glauconite, and mixed-layered kaolinite-montmorillonite examination by ultramicrotomy and high resolution electron microscopy (Lee, S. Y.) crystallography see also mineralogy dams see also under engineering geology deformation see also geophysics; structural analysis deformation--field studies stress: Correlation between deformation lamellae, microfractures, macrofractures, and in situ stress measurements, White River Uplift, Colorado (Dula, William F., Jr.) -- Field mechanical properties of a jointed sandstone (Swolfs, H. S.) Stress analysis of a deeply eroded analog of the San Andreas Fault, California (Kohlstedt, D. L.) - -Stress analysis of

-- Stress analysis of deeply eroded analogs of the San Andreas Fault (a renewal) (Kohlstedt, D. L.)

-- Stress orientations from borehole wall fractures with examples from Colorado, East Texas, and northern Canada (Gough, D. I.) deposition see under sedimentation deposition of ores see mineral deposits, genesis Devonian see also under geochronology; stratigraphy diabase see under igneous rocks diagenesis see also sedimentation diagenesis--effects clay minerals: Probable burial diagenetic and provenance effects on Dakota Group clay mineralogy, Denver Basin (Rettke, Robert C.) reservoir properties: Reservoir properties of Niobrara Formation, Denver basin (Pollastro, R. M.) diagenesis--geochemistry uranium: Uranium mobility during glass diagenesis (Zielinski, R. A.) diagenesis--materials sandstone: Early precipitation of authigenic clay by meteoric water, Pictured Cliffs, San Juan Basin, New Mexico and Colorado (Cumella, Stephen P.) Mineralogy and diagenesis of core samples of Upper Cretaceous sandstones, Twin Arrow Inc. 4-14x C and K well, Piceance Creek basin, northwestern Colorado (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 (Hansley, P. L.) uranium ores: Uranium mineralization and depositional facies in the Permian rocks of the northern Paradox Basin. Utah and Colorado (Campbell, John A.) diagenesis--processes authigenesis: Authigenic

kaolinite and associated pyrite in chalk of the Cretaceous Niobrara Formation, eastern Colorado (Pollastro, Richard M.)

cementation: Petrography of Upper Cambrian Lodore Formation, Northeast Utah and Northwest Colorado (Herr, Randy G.) diamond see under native elements under minerals diamonds see also under economic geology diastrophism see orogeny diatremes see under intrusions differentiation see under magmas dinosaurs see under Reptilia dolostone see also under carbonate rocks under sedimentary rocks drainage patterns see under fluvial features under geomorphology drilling see under petroleum engineering under engineering geology dunes see under eolian features under geomorphology Earth-current surveys see under geophysical surveys earthquakes see under seismology; see also engineering geology; seismology earthquakes--prediction precursors: Preliminary analysis of meteorological and seasonal influences on crustal gas emission relevant to earthquake prediction (Klusman, Ronald W.) Eastern U.S. see also Connecticut; New York ecology see also under environmental geology ecology--analysis human ecology: Soil as an environmental factor in aging (Beeson, Kenneth C.) economic geology aluminum ores: Alumina from oil shale (Smith, John Ward) base metals: Los Alamos "sandwich" finds base metals in Colorado (Anonymous) Precambrian sulfide deposits in the Gunnison region, Colorado (Sheridan, Douglas M.) bibliography: Bibliography of geothermal reports in Colorado (Pearl, Richard Howard) coal: A critical evaluation of published Western coal-resource estimates (Glass, Gary B.) -- A summary of mineral industry activities in Colorado, 1979; Part 1,

Coal (Colorado Division of Mines, Department of Natural Resources)

- -- A summary of mineral industry activities in Colorado; 1980 (Colorado Division of Mines, Department of Natural Resources)
- -- Active/licensed coal mines of Colorado (Jones, David C.)
- -- Characteristics of deltaic deposits in the Cretaceous Pierre Shale, Trinidad Sandstone, and Vermejo Formation, Raton Basin, Colorado (Flores, Romeo M.)
- -- 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 Quadrangle, San Juan County, New Mexico, and La Plata County, Colorado (Dames and Moore)
- -- Coking coals of western Colorado (Ladwig, L. R.)
- -- 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.)
- -- Geologic map and coal resources of the Easton Gulch Quadrangle, Moffat County, Colorado (Reheis, M. C.)
- -- Geology and chemical analyses of coal, Mesaverde Group (Cretaceous), lower White River coal field, Moffat and Rio Blanco counties, Colorado (Hildebrand, R. T.)
- -- Japanese join development of Colorado coal mine (Anonymous)
- -- Methane in Cretaceous and Paleocene coals of western Colorado (Tremain, C. M.)
- -- Upper Cretaceous (Campanian) coal resources of Western Colorado (Murray, D. Keith)
- -- U.S. Geological Survey projects in western coal

- geology (Mapel, W. J.) copper ores: Incomplete manuscript on stratigraphy and structural geology and uranium-vanadium and copper deposits of the Lisbon Valley area, Utah-Colorado (Weir, G. W.)
- diamonds: Diamond collecting in northern Colorado (Collins, Donley S.)
- -- Diamond exploration in Colorado and Wyoming (Hausel, W. Dan)
- -- Geological and geophysical investigations of kimberlite in the Laramie Range of southeastern Wyoming (Hausel, W. D.)
- energy sources: A discussion of legal and institutional constraints on energy-related water development in the Yampa River basin, Colorado (Knudsen, Walter I., Jr.)
- -- Energy resources map of Colorado (U.S. Geological Survey)
- -- Geology of the Paradox Basin (Wiegand, Del L.)
- -- Permit requirements for energy and other natural resources for the State of Colorado (Camp Dresser and McKee)
- -- Use of mathematical models to predict impacts of mining energy minerals on the hydrologic system in northwestern Colorado (Saulnier, G. J., Jr.)
- -- Western states energy resource development (Meyer, Randall)
- fuel resources: Bug Field discovery spurs new interest in Paradox Basin (Rountree, Russ)
- -- Colorado; credited as most active state in region (Rountree, Russ)
- -- Denver Basin activity continues fast pace (McCaslin, John C.)
- -- Denver Basin operators zero in on new targets (Rountree, Russ)
- -- Denver, Laramie, Hanna basins; Colorado and Wyoming (Petromotion)
- -- Developments in eastern and northwestern Colorado and western Nebraska in 1967 (Volk, Richard W.)
- -- Developments in Four Corners intermountain area

in 1967 (Kunkel, Robert P.)

- -- Drilling in Colorado continues fast pace (McCaslin, John C.)
- -- Drilling to increase in NE Colorado (Rountree, Russ)
- Facies recognition and hydrocarbon potential of the Pennsylvanian Paradox Formation (Reid, Fred S.)
   Four
- Corners-Intermountain area (Stevenson, G. M.)
- -- Greater Green River basin; Wyoming and Colorado (Petromotion)
- -- Mississippian play advancing in Colorado area (McCaslin, John C.)
- -- Natomas plans deep Colorado wildcat (McCaslin, John C.)
- -- New fields and exploration drilling, Paradox Basin, Utah and Colorado (Krivanek, Connie M.)
- -- New wildcatting developing in southeastern, eastern Colorado (McCaslin, John C.)
- -- Oil and gas bigger than shale in Grand Junction (Gill, Douglas)
- -- Oil and gas geology of the San Juan Basin (Hill, James M.)
- -- Petroleum geology of the Devonian and Mississippian rocks of the Four Corners region (Gustafson, V. 0.)
- -- Petroleum in continental facies (Swain, Frederick M.)
- -- Possible gas find could heat up activity in Raton Basin (McCaslin, John C.)
- -- Promising Morrow sandstone discoveries in southeastern Colorado (Avis, Loren E.)
- -- San Juan Basin gas area yields oil find (McCaslin, John C.)
- -- Seismic mapping key to Paradox Basin (McCaslin, John C.)
- -- Seismic surveying, salt anticline region, Paradox Basin (Scott, G. L.)
- -- Southern Rockies; eastern and northwestern Colorado (Dolson, John)
- -- Subtle stratigraphic traps in Paleozoic rocks of Paradox Basin (Baars, D. L.)

- -- Survey helps locate oil, gas in SE Colorado (Anonymous)
- -- S.W. Denver Basin, Colorado (Petromotion)
- gems: A U. S. review; Chrysoberyl (Jacobson, Mark I.)
- -- Colorado lapis lazuli from the Blue Wrinkle Mine in Gunnison County (Schultz, Paul R.)
- -- Jet from Colorado (Tinsley, John C., III)
- -- Western gem hunters atlas (Johnson, H. Cyril)
- geothermal energy: A ground water convection model for Rio Grande Rift geothermal resources (Harder, Vicki)
- -- A summary of DDE funded geothermal resource assessment efforts in Colorado by the Colorado Geological Survey (Pearl, Richard Howard)
- -- A summary of the geology of the San Luis Basin, Colorado-New Mexico, with emphasis on the geothermal potential for the Monte Vista Graben (Burroughs, Richard L.)
- -- An appraisal of the use of geothermal energy in state-owned buildings in Colorado (Meyer, Richard T.)
- -- Bibliography of geothermal reports in Colorado (Pearl, Richard Howard)
- -- Colorado's hydrothermal resource base; an assessment (Pearl, Richard Howard)
- -- Geophysical methods in prospecting for geothermal resources (Keller, G. V.)
- -- Groundwater heat pumps in Colorado; an efficient and cost-effective way to heat and cool your home (Garing, Kenneth L.)
- -- Hydrothermal resources of western Colorado (Pearl, Richard Howard)
- -- Duray, Colorado; resource characteristics and future plans (McCarthy, Kevin P.)
- gold ores: \$10 million in gold (Reif, Logan E.)
- -- In search of gold (Mitchell, James R.)
- -- My days at Cripple Creek (Thomas, Lowell)
- -- The geology and geochemistry of the northeasterly gold veins,

Sunnyside Mine, San Juan County, Colorado (Langston, David J.)

- -- The hanging flume of Dolores River canyon, Montrose County, Colorado (Learned, Elizabeth A.)
- maps: Active/licensed coal
  mines of Colorado (Jones,
  David C.)
- -- Central Rocky Mountain region, Colorado, Utah and Wyoming (Petromotion)
- -- 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 Quadrangle, San Juan County, New Mexico, and La Plata County, Colorado (Dames and Moore)
- -- Contour maps of uranium, uranium-thorium ratio, and total field magnetics, Lake City area, San Juan Mountains, Colorado (Heran, W. D.)
- -- Denver Basin; Colorado, Wyoming, Kansas and Nebraska (Petromotion)
- -- Denver, Laramie, Hanna basins; Colorado and Wyoming (Petromotion)
- -- 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.)
- -- Geologic map and coal resources of the Easton Gulch Quadrangle, Moffat County, Colorado (Reheis,

- M. C.)
- -- Greater Green River basin; Wyoming and
- Colorado (Petromotion) -- Isopach, structure contour, and resource maps of the R-6 oil-shale zone, Green River Formation, Piceance Creek basin, Colorado (Pitman, J. K.)
- -- Leadville Quadrangle, Colorado (Collins, Donna Bishop)
- -- Mineral resource potential of the Hunter-Fryingpan Wilderness and the Porphyry Mountain wilderness study area, Pitkin County, Colorado (Ludington, Steve)
- -- Montrose Quadrangle, Colorado (Goodknight, Craig S.)
- North Park Basin; Jackson and Grand counties, Colorado (Petromotion)
   Rock Springs Quadrangle,
- Wyoming and Colorado (Morris, Armand V.)
- -- S.W. Denver Basin, Colorado (Petromotion) -- Trinidad Quadrangle, Colorado (Johnson, V. C.) metal ores: Geochemical and
- geostatistical evaluation of American Flats-Silverton planning units, San Juan volcanic province, Colorado (Weiland, E. F.)
- -- Model for the formation of uranium/lithophile element deposits in fluorine-rich volcanic rocks (Burt, Donald M.)
- -- Precambrian mineralization and tectonic framework of Fremont County, Colorado (Ririe, George Todd)
- Proterozoic syngenetic massive sulfide deposits in the Gunnison gold belt, Colorado (Drobeck, P. A.)
- mineral resources: A summary of mineral industry activities in Colorado, 1980; Part II, Metal-nonmetal (Anonymous)
- -- Geophysical studies in the Powderhorn Wilderness Study Area, Colorado (Martin, R. A.)
- -- 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.)
- -- Mineral resource potential of the Hunter-Fryingpan Wilderness and the Porphyry Mountain wilderness study area, Pitkin County, Colorado (Ludington, Steve) -- Mineralization in the
- Williams Fork, Colorado (Theobald, P. K.)
- -- Regional geophysical studies in the Pueblo 1 degrees X2 degrees quadrangle, Colorado (Boler, F. M.)
- -- Relations between tectonism and mineralization in southwestern Colorado (Tweto, O. L.)
- -- The mineral industry of Colorado (Starch, Karl E.)
- -- Western mining directory for the industry (Anonymous)
- -- Western mining directory for the industry (Anonymous)
- -- Western mining directory for the industry (Anonymous)
- -- Wisconsin mining taxes; can changes be made that will encourage mine development? (Anonymous)
- molybdenum ores: Character and origin of climax~type molybdenum deposits (White, W. H.)
- -- Exploration and geclogy of the Mt. Emmons molybdenite deposits, Gunnison County, Colorado (Thomas, John A.)
- -- Four moly projects continue development (Anonymous)
- -- Geology of the Mount Emmons molybdenum deposit, Crested Butte, Colorado (Dowsett, Frederick R., Jr.)
- -- 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.)
- -- The Climax and Henderson molybdenum deposits in the USA (Ekiert, Franciszek) -- The Henderson Mine
- (Mayers, D.) museums: C. Clay Crawford
- (Schrager, Debra) natural gas: Colorado's Niobrara still holds
- interest (McCaslin, John
  C.)
  -- Early precipitation of
- authigenic clay by meteoric water, Pictured Cliffs, San Juan Basin, New Mexico and Colorado (Cumella, Stephen P.)
- -- Eastern Green River basin; a developing giant gas supply from deep, overpressured Upper Cretaceous sandstones (McPeek, L. A.)
- -- Evaluation of low-permeability gas-bearing formations in Rio Blanco County, Colorado (Boardman, Charles R.)
- Fracture optimization in a tight gas play; Muddy
   "J" Formation, Wattenberg Field, Colorado (Roberts, C. N.)
- -- Indigenous biogenic gas in Niobrara Formation, eastern Denver basin (Rice, D. D.)
- -- 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 (Choate, Raoul)
- -- Mineralogy and diagenesis of core samples of Upper Cretaceous sandstones, Twin Arrow Inc. 4-14x C and K well, Piceance Creek basin, northwestern Colorado (Hansley, P. L.)
- -- New discoveries, better prices, ease in regulations key in
- Colorado (Rountree, Russ) -- Niobrara Development Program, Washington County, Colorado (Hanley, Edward J.)

- -- The Cretaceous Niobrara
- play (Smagala, Tom) -- Wattenberg Field, paleostructure-stratigraphic trap, Denver Basin, Colorado (Weimer, R. J.)
- oil and gas fields: Bedrock geology of the Ridgeway area, northwestern flank, San Juan Mountains, Colorado (Weimer, Paul)
- -- 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.)
- oil shale: Characterization of two core holes from the Naval Oil Shale Reserve Number 1 (Giauque, R. D.)
- -- Comparative analysis of nine selected oil shale properties (Leon, Herman I.)
- -- Correlation of mineralogy and trace element leaching behavior in modified in situ spent shales from Logan Wash, Colorado (Peterson, E. J.)
- -- Cretaceous and Tertiary history and resources of the Piceance Creek basin, western Colorado (Johnson, Ronald C.)
- -- Element baselines for the Piceance Creek Basin, Colorado (Tuttle, Michele)
- -- Geochemical surveys of oil shale in the Piceance Creek basin, Colorado
- (Dean, W. E.)
  -- Geochemistry of fluorine
  in oil shale leachates
  (Saether, Ola M.)
- -- Geochemistry of oil shale solid waste disposal (Wildung, R. E.)
- -- 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
- (O'Sullivan, R. B.) -- Hydrogeologic consequences of the modified in situ retorting process, Piceance Creek Basin, Colorado (Mehran, M.)
- -- Isopach, structure contour, and resource maps of the R-6 oil-shale zone, Green River Formation, Piceance Creek basin, Colorado (Pitman, J. K.)
- -- Lacustrine turbidites in the Green River Formation, northwestern Colorado (Dyni, John R.)
- -- Mining in the Saline Zone (Weichman, Bernard E.)
- -- 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.)
- -- Oil shale; an impending energy source (Cook, Glenn L.)
- -- 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.)

-11

- -- 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)
- -- Shale oil; a synthetic fuel of the future (Hopkins, J. M.)
- -- Tensile strengths of Colorado and Utah oil shales (Chong, Ken P.)
- -- The Colony Shale Oil Project (Hayes, Larry D.)
- -- The relative importance of ground-water and surface-water supplies to oil-shale development, Piceance Basin, Colorado (Alley, W. M.)
- -- Uncertainties of oil-shale development (Weaver, Glen D.)
- -- Union Dil Company's Dil Shale Project (Hopkins, John M.)
- -- United States; commercial production of oil shale to start in 1983 (Anonymous)
- petroleum: Deeper zones may have big oil reserves (Rountree, Russ)
- -- Determining subsurface stratigraphic position by fluid-entry analysis during air drilling (Mathias, J. Paul)
- -- New discoveries, better prices, ease in regulations key in
- Colorado (Rountree, Russ) -- New Niobrara completions attract interest
- (Rountree, Russ) -- North Park Basin; Jackson and Grand counties, Colorado (Petromotion)
- -- Potential petroleum resources of northeastern Utah and northwestern Colorado (Sanborn, Albert F.)
- -- 'Sky-high basin' getting another look (McCaslin, John C.)
- -- Stratigraphy and petroleum geology of the J Sandstone in portions of

Boulder, Larimer, and Weld counties, Colorado (Suryanto, Untung) polymetallic ores: Fluid-inclusion data on samples from Creede, Colorado, in relation to mineral paragenesis (Woods, T. L.) sodium carbonate: Geology of the nahcolite deposits and associated oil shales of the Green River Formation in the Piceance Creek basin, Colorado (Dyni, John Richard) thorium ores: Thorium resource appraisal, Wet Mountains, Colorado (Armbrustmacher, T. J.) tungsten ores: Tungsten mining in Boulder County, ~ Colorado, during World War I (House, Cadwell Burl) uranium ores: A geologic report on the Sand Wash Drilling Project, Moffat and Routt counties, Colorado (Carter, Thomas E.) -- Aerial radiometric and magnetic survey, Limon National Topographic Map, Colorado; Nebraska-Dakotas project (Geodata International) -- Aerial radiometric and magnetic survey, Sterling National Topographic Map, Colorado/Kansas/Nebraska; Nebraska-Dakotas project (Geodata International) -- Contour maps of uranium, uranium-thorium ratio, and total field magnetics, Lake City area, San Juan Mountains, Colorado

(Heran, W. D.)

-- Data release for

intermediate-density

hydrogeochemical and

special study area,

-- Detailed uranium

geochemical stream

Wyoming, including

forty-five additional

concentrations of

sediment survey data

release for selected

G.)

Colorado, including

stream sediment sampling

concentrations of uranium

elements (Warren, Richard

portions of the Craig NTMS

Quadrangle, Colorado, and

elements (Shannon, Spencer

Rawlins NTMS Quadrangle,

and forty-six additional

in the Vallecito Creek

S., Jr.)

- -- 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.)
- -- Drilling-mud emanometry; a new technique for uranium exploration (Bell, M. W.)
- -- Durango Quadrangle, Colorado (Theis, Nicholas J.)
- -- Geochemical and geostatistical evaluation of American Flats-Silverton planning units, San Juan volcanic province, Colorado (Weiland, E. F.)
- -- Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado (Dickinson, K. A.)
- -- Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado (Dickinson, Kendell A.)
- -- Geologic map and coal resources of the Easton Gulch Quadrangle, Moffat County, Colorado (Reheis, M. C.)
- -- Geology and recognition criteria for sandstone uranium deposits of the salt wash type, Colorado Plateau Province; final report (Thamm, John K.)
- -- Geology of dolomite-hosted uranium deposits at the Pitch Mine, Saguache County, Colorado (Nash, J. Thomas)
- -- 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.)

- -- Jasperoid as a possible indicator of uranium source, Pitch mine, Colorado (Nash, J. T.)
- -- Lamar Quadrangle, Colorado and Kansas (Maarouf, A. M.)
- -- Leadville Quadrangle, Colorado (Collins, Donna Bishop)
- -- Low-grade uranium in the Fort Union Formation, Crooked Wash area, northwestern Colorado (Hail, W. J., Jr.)
- -- Montrose Quadrangle, Colorado (Goodknight, Craig S.)
- -- Multisource data set integration and characterization of uranium mineralization for the Montrose Quadrangle, Colorado (Bolivar, Stephen L.)
- -- Oligocene volcanic rocks; possible source of uranium in epigenetic deposits in parts of Chaffee, Park, and Fremont counties, Colorado (Dickinson, K. A.)
- -- Organic geochemistry of uranium in the Grants mineral belt (Leventhal, J. S.)
- Proterozoic origins of uranium mineralization in the Colorado Front Range (Nelson, Carl E.)
- -- Rock Springs Quadrangle, Wyoming and Colorado (Morris, Armand V.)
- -- Stacked profiles of data from a helicopter airborne radiometric and magnetic survey of the Lake City area, San Juan Mountains, Colorado (Heran, W. D.)
- -- Stratigraphy and uranium paragenesis, Lake City caldera, Colorado (Hon, K. A.)
- -- Survey of lands held for uranium exploration, development, and production in fourteen western states in the six-month period ending December 31, 1980 (Bendix Field Engineering Corporation, Grand Junction Operations)
- -- The genesis of the Los Ochos uranium deposits, Saguache County, Colorado (McCulla, Michael)
- -- The uranium-vanadium deposits of the Uravan mineral belt and adjacent

areas, Colorado and Utah (Chenoweth, William L.)

- Trinidad Quadrangle, Colorado (Johnson, V. C.)
   Underground uranium ore leaching (Anonymous)
- -- Uranium and trace
- elements as an exploration tool (Otton, James K.) -- Uranium content in
- Precambrian rocks, Colorado and Wyoming (Hills, F. A.)
- -- Uranium favorability in the Pueblo 1 degrees X2 degrees NURE quadrangle, Colorado (Dickinson, K. A.)
- -- 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 (Goff, Sue)
- -- Uranium in big sagebrush from Western U.S. and evidence of possible mineralisation in the Dwyhee Mountains of Idaho (Erdman, J. A.)
- -- Uranium in the Gunnison Country, Colorado (Goodknight, Craig S.)
- Uranium mineralization and depositional facies in the Permian rocks of the northern Paradox Basin, Utah and Colorado (Campbell, John A.)
- -- Uranium mobility during glass diagenesis (Zielinski, R. A.)
- -- Uranium potential of Precambrian quartz-pebble conglomerates in the United States; a summary (Anderson, Jule R.)
- -- Uranium potential of the Burro Canyon Formation in western Colorado (Craig, L. C.)
- -- Uranium resource assessment through statistical analysis of exploration geochemical and other data; final report (Koch, George S., Jr.)
- -- Uranium resource assessment through statistical analysis of exploration geochemical and other data (Koch, George S., Jr.)
- -- Uranium resource assessment through

statistical analysis of exploration, geochemical, and other data; final report (Koch, George S., Jr.)

- vanadium ores: Geology and recognition criteria for sandstone uranium deposits of the salt wash type, Colorado Plateau Province; final report (Thamm, John K.)
- -- Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau (Tyler, Noel)
- -- The uranium-vanadium deposits of the Uravan mineral belt and adjacent areas, Colorado and Utah (Chenoweth, William L.)
- water resources: A discussion of legal and institutional constraints on energy-related water development in the Yampa River basin, Colorado (Knudsen, Walter I., Jr.)
- -- Assessment of impacts of proposed coal-resource and related economic development on water resources, Yampa River basin, Colorado and Wyoming; a summary (Steele, T. D.)
- Colorado (Anonymous)
   Ground-water development in western river basins; large economic gains with unseen costs (Daubert, John T.)
- -- Hydro-fracturing offers many benefits (Waltz, James)
- -- Index to water data acquisition; Region 13, Rio Grande, 1980 (U. S. Geological Survey, Office of Water Data Coordination)
- -- Index to water data acquisition; Region 14, Upper Colorado, 1980 (U. S. Geological Survey, Dffice of Water Data Coordination)
- -- Optimizing salinity control strategies for the upper Colorado River basin (Evans, Robert George)
- -- The national ground water picture (Eisel, Leo M.)
- -- The Ogallala; half full or half empty? (McCray, Kevin)

- -- The relative importance of ground-water and surface-water supplies to oil-shale development, Piceance Basin, Colorado (Alley, W. M.) -- Water and energy in
- -- Water and energy in Colorado's future; the impacts of energy development on water use in 1985 and 2000 (Colorado Energy Research Institute)
- Water-resources investigations of the U.
  S. Geological Survey in Colorado; fiscal year 1981 (Price, W. E., Jr.)
  Yampa River basin;
- -- Yampa River Dasin; Colorado, Wyoming (U. S. Department of Energy, Federal Energy Regulatory Commission, Office of Electric Power Regulation)
- zinc ores: Stratigraphy and mineralogy of a zinc-rich sillimanite gneiss near Maysville, Chaffee County, Colorado (Knight, David Cooper)
- economic geology--education elementary geology: Conducting a fire assay for school children (Spicer, Claudia A.)
- education--economic geology elementary school: Conducting a fire assay for school children (Spicer, Claudia A.)
- education-general
- graduate-level education: Bibliography of theses and dissertations on Colorado, 1968-1980 (Kirk, Cheryl L.)
- non-geologists: Geology for non-geologists (Henry, Rebekah)
- education--geophysics college-level education: CSM Geophysic Department (Keller, G. V.)
- electrical logging see under well-logging
- electromagnetic surveys see under geophysical surveys
- electron microscopy see also
   chemical analysis;
   spectroscopy
- elementary geology see under education under economic geology
- energy sources see also under economic geology
- engineering geology see also deformation; environmental geology; ground water; mining geology; rock mechanics; soil mechanics

engineering geology

- dams: Hydraulic sediment model study for proposed Blanco Diversion Dam modification (Dodge, R. A.)
- -- Seismic analysis of Spinney Mountain Dam (Williamson, J. V.)
- earthquakes: Earthquake potential in Colorado; a preliminary evaluation (Kirkham, Robert M.)
- -- Review of the Denver Water Department induced seismicity program at Strontia Springs, Colorado (Spence, William)
- -- Seismic analysis of Spinney Mountain Dam (Williamson, J. V.)
- explosions: Postshot in \_ situ material property tests at the Mixed Company site, Colorado (Palmerton, J. B.)
- foundations: Numerical models for track support structures (Desai, C. S.)
- -- Public awareness of homes built on shrink-swell soils (Holtz, Wesley G.)
- geologic hazards: A high-resolution controlled-source audiomagnetotelluric system for mining applications (Duff, B. M.)
- -- A reservoir analysis of the Denver earthquakes; a case of induced seismicity (Hsieh, Paul Anthony)
- -- Debris flows in small mountain stream channels of Colorado and their hydrologic implications (Costa, John E.)
- -- Guidelines and criteria for identification and land-use controls of geologic hazard and mineral resource areas (Rogers, W. P.)
- -- Hydraulic model studies of landslide-generated water waves; Morrow Point Reservoir (Pugh, Clifford A.)
- -- Inventory of geological hazards (DeGraff, Jerome V.)
- -- Preliminary map of landslide deposits, Denver 1 degrees by 2 degrees Quadrangle, Colorado (Colton, R. B.)
- *land use*: Guidelines and criteria for identification and

land-use controls of geologic hazard and mineral resource areas (Rogers, W. P.) maps: Preliminary map of landslide deposits, Denver 1 degrees by 2 degrees Quadrangle, Colorado (Colton, R. B.)

- (Colton, R. B.)
  -- Siting considerations
  for hazardous waste
  disposal (Hynes, Jeffrey
  L.)
- petroleum engineering: A practical model for evaluating a well producing from a tight gas formation (Crafton, James W.)
- reservoirs: Conjunctive use of deterministic and stochastic models for predicting sediment storage in large reservoirs; 3, Application of the two models in conjunction (Soares, E. F.)
- -- Predicted limnology of a proposed reservoir in Southwest Colorado (Baker, L. A.)
- rock mechanics: Field mechanical properties of a jointed sandstone (Swolfs, H. S.)
- -- Hugoniots of Colorado oil shale (Carter, W. J.)
- -- Is piezomagnetism influenced by microcracks during cyclic loading? (Martin, Randolph J., III)
- -- Mechanical behavior of Mesaverde shale and sandstone at high pressure (Lin, Wunan)
- -- Subterranean stress engineering experiments (Campbell, J. R.)
- slope stability: Gravitational spreading of steep-sided ridges ("sackung") in western United States (Radbruch-Hall, D. H.)
- Monitoring program measures slope movement at Climax Mine (Anonymous)
- -- Preliminary map of landslide deposits, Denver 1 degrees by 2 degrees Quadrangle, Colorado (Colton, R. B.)
- -- Quaternary glacial and slope-failure deposits of the Crested Butte area, Gunnison County, Colorado (Robinson, Charles H.)
- -- Seismic analysis of Spinney Mountain Dam

(Williamson, J. V.) Seismic moment, stress drop, strain energy, dislocation radius, and location of seismic acoustical emissions associated with a high alpine snowpack at Berthoud Pass, Colorado (Rose, Charles Cleland)

- soil mechanics: Field test sections on expansive soil (Johnson, L. D.)
- -- Home landscaping and maintenance on swelling soil (Jochim, Candace L.)
- -- Origins of clays controlling permeability in tight gas sands (Wilson, Michael D.)
- -- Strain controlled testing of expansive soils (Porter, Andrew A.)
- tunnels: Comparison of rock mass classification systems; Mt. Axtell Tunnel, Gunnison County, Colorado (Stewart, Danie) Russell)
- -- Geology of the eastern part of the Harold D. Roberts Tunnel, Colorado (stations 690+00 to 1238+58) (Warner, L. A.)
- -- Geology of the western part of the Harold D. Roberts Tunnel, Colorado (stations 0+00 to 690+00) (Wahlstrom, E. E.)
- -- Summary of the engineering geology of the Harold D. Roberts Tunnel, Colorado (Wahlstrom, E. E.)
- underground installations: 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 (Dewey, R. S.)
- waste disposal: A reservoir analysis of the Denver earthquakes; a case of induced seismicity (Hsieh, Paul A.)
- Computer simulation of movement of **DIMP-contaminated** groundwater near the Rocky Mountain Arsenal, Colorado (Robson, S. G.)
- Generic aspects of salt repositories (Laughon, Bob)
- -- Geochemistry of a contact metamorphosed

zone: implications for radwaste disposal in crystalline rocks (Brookins, Douglas G.)

- -- Geochemistry of fluorine in oil shale leachates (Saether, Ola M.)
- -- Geochemistry of oil shale solid waste disposal (Wildung, R. E.)
- Geotechnical aspects of the search for a permanent repository for the Durango uranium tailings pile (Kirkham, Robert M.)
- -- Hazardous-waste generation in Colorado (Sutton, Christopher J.)
- -- Hydrogeologic influences on the long term disposal of uranium mill tailings (Kaufmann, R. F.)
- -- Legal ramifications of excluding out-of-state disposal (Burnett, Janice L.)
- -- Regional environmental characterization report for the Paradox Bedded Salt region and surrounding territory (Bechtel National)
- -- Siting considerations for hazardous waste disposal (Hynes, Jeffrey L.)
- -- The Denver earthquakes of 1967-1968 (Herrmann. Robert B.)
- waterways: Adaptive real-time streamflow forecasting model for hydrosystem operational planning (Lazaro, Rogelio Cruz)
- engineering geology--petroleum engineering
- *\_drilling*: Determining subsurface stratigraphic position by fluid-entry analysis during air drilling (Mathias, J. Paul) reservoir rocks: A
- practical model for evaluating a well producing from a tight gas formation (Crafton, James ₩.)
- engineering
  - geology--techniques hydraulic fracturing: Hydro-fracturing offers many benefits (Waltz, James)
- environmental geology see also engineering geology

environmental geology

- conservation: Revegetation studies on Tosco II and USBM retorted oil shales (Kilkelly, M. K.)
- ecology: Environmental controls influencing the altitude and form of the forest-alpine tundra ecotone, Colorado Front Range (Hansen-Bristow, Katherine Jane)
- -- Soil as an environmental factor in aging (Beeson, Kenneth C.)
- geologic hazards: Δ quantitative analysis of avalanche hazard on U. S. Highway 550, southwestern Colorado (Armstrong, B. R.)
- -- Earthquake potential in Colorado; a preliminary evaluation (Kirkham, Robert M.)
- -- Map of snow avalanche areas and known accident sites in the Telluride region, San Miguel County, Colorado (Armstrong, B. R.)
- impact statements: Assessment of impacts of proposed coal-resource and related economic development on water resources, Yampa River basin, Colorado and Wyoming; a summary (Steele, T. D.)
- -- Colorado-Big Thompson-Windy Gap projects, Colorado (U. S. Bureau of Reclamation, Water and Power Resources Service, Lower Missouri Region)
- -- Installation restoration at Rocky Mountain Arsenal; Part II, Expanded north boundary containment operations (Campbell, Donald L.)
- -- 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)
- -- Paraho environmental data; Part I, Process characterization; Part II, Air quality; Part III, Water quality (Heistand, R. N.)
- -- Preliminary data report for the San Juan Basin-Crownpoint surveillance study (Frenzel, P. F.)
- -- 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. Bureau of Land Management)
- -- Rio Blanco Oil Shale Company; Tract C-a; modification to the detailed development plan; Lurgi demonstration project (Rio Blanco Oil Shale Company)
- -- Uinta-southwestern Utah regional coal (Anonymous)
- land use: Environmental geology of the Greater Denver area, Colorado, U.S.A. (Hansen, Wallace R.)
- -- Home landscaping and maintenance on swelling soil (Jochim, Candace L.)
- -- Land use and land cover and associated maps for Cheyenne, Wyoming, Nebraska, Colorado (U. S. Geological Survey)
- -- Land use and land cover, 1975-76, Denver, Colorado (U. S. Geological Survey)
- -- Permit requirements for energy and other natural resources for the State of Colorado (Camp Dresser and McKee)
- -- Soil property relationships on selected landscape segments under cultivated vs. rangeland conditions (Muhaimeed, Ahmad Saleh)
- -- State lands status map (Bretz, T. E.) -- Statistical
- identification of hydraulic connections between the surface of a mountain and internal mineralized sources

(Williams, Roy E.)

- -- Uncertainties of oil-shale development (Weaver, Glen D.)
- -- Use of mathematical models to predict impacts of mining energy minerals on the hydrologic system in northwestern Colorado (Saulnier, G. J., Jr.)
- -- Weathering effects on some chemical and physical properties of retorted oil shale (Richardson, Steven G.)
- maps: Land use and land cover and associated maps for Cheyenne, Wyoming, Nebraska, Colorado (U. S. Geological Survey)
- -- Land use and land cover, 1375-76, Denver, Colorado-(U. S. Geological Survey)
- -- Map of snow avalanche areas and known accident sites in the Telluride region, San Miguel County, Colorado (Armstrong, B. R.)
- -- State lands status map (Bretz, T. E.)
- pollution: 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.)
- -- Effects of a cattle feedlot on ground-water quality in the South Platte River valley near Greeley, Colorado (Borman, R. G.)
- -- Effects of effluents from a coal-fired electric-generating powerplant on local ground water near Hayden, Colorado (Ellis, S. R.)
- -- Effects of energy-production emissions on Colorado lakes (Turk, J. T.)
- -- Effects of residential wastewater treatment systems on ground-water quality in West-central Jefferson County, Colorado (Hall, D. C.)
- -- Element concentrations in rehabilitation species from thirteen coal-stripmines in five western states and Alaska (Gough, L. P.)

- -- Evaluation of ground-water pumping and bailing methods; application in the oil shale industry (Slawson, G. C.)
- -- Final report on PCB usage at the Grand Junction area office facility (Miller, Marvin E.)
- -- Hydrogeochemistry and simulated solute transport, Piceance Basin, northwestern Colorado (Robson, S. G.)
- -- Hydrogeologic influences on the long term disposal of uranium mill tailings (Kaufmann, R. F.)
- -- Optimizing salinity control strategies for the upper Colorado River basin (Evans, Robert George)
- -- Rocky Mountain Arsenal; landmark case of groundwater polluted by organic chemicals, and being cleaned up (Anonymous)
- -- The effect of erosion on solute pickup from Mancos Shale hillslopes, Colorado, U.S.A. (Laronne, J. B.)
- -- Waste-assimilation capacity of the Arkansas River in Pueblo County, Colorado, as it relates to water-quality guidelines and stream classification (Cain, Doug)
- reclamation: Effect of rehabilitation practices on plant establishment in the Piceance Basin of Colorado (Johnson, Douglas Edward)
- -- Element concentrations in rehabilitation species from thirteen coal-stripmines in five western states and Alaska (Gough, L. P.)
- Eocene see also under stratigraphy
- eolian features see under geomorphology
- epeirogeny see also orogeny eruptive rocks see igneous rocks
- excursions see road log under areal geology
- experimental studies see under clay mineralogy; geophysics
- **explosions** see also under engineering geology; see also under engineering geology under automatic data processing

faulting see faults faults--displacements active faults: Earthquake potential in Colorado; a preliminary evaluation (Kirkham, Robert M.) normal faults: Characteristics of surface faults in the Paradox Basin (Kitcho, Catherine A.) reactivation: Tectonic evolution of lower Proterozoic rocks, Uinta Mountains, Utah and Colorado (Sears, J. W.) faults--effects shear zones: Stress analysis of a deeply eroded analog of the San Andreas Fault, California (Kohistedt, D. L.) -- Stress analysis of deeply eroded analogs of the San Andreas Fault (a renewal) (Kohlstedt, D. L.) faults--systems block structures: Pre-Carboniferous paleotectonics of the San Juan Basin (Stevenson, G. M.) fish see also Pisces fission-track dating see under geochronology fluid inclusions see also inclusions fluid inclusions--interpretation ore-forming fluids: Fluid-inclusion data on samples from Creede, Colorado, in relation to mineral paragenesis (Woods, T. L.) fluorine--abundance oil shale: Fluorine; its mineralogical residence in the oil shale of the Mahogany Zone of the Green River Formation, Piceance Creek basin, Colorado, U.S.A. (Saether, O. M.) 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.) fluorine--geochemistry magmas: Topaz rhyolites; distribution, origin and significance to

(Burt, Donald M.) oil shale: Geochemistry of fluorine in oil shale leachates (Saether, Ola M.) fluvial features see under aeomorphology folds see also faults foliation see also structural analysis foundations see also under engineering geology; rock mechanics; soil mechanics fractures--genesis shear: Stress orientations from borehole wall fractures with examples from Colorado, East Texas, and northern Canada (Gough, D. I.) fractures--patterns orientation: Correlation between deformation lamellae, microfractures, macrofractures, and in situ stress measurements, White River Uplift, Colorado (Dula, William F., Jr.) fractures--style joints: Structure and petrology of Cochetopa Pluton and its metamorphic wallrocks, Saguache County, Colorado (Hutchinson, Robert M.) fuel resources see also under economic geology; see also under economic geology under Great Plains; Nebraska; Nicaragua; Rocky Mountains gamma-gamma methods see under radioactivity under well-logging gamma-ray methods see under radioactivity under well-logging gas inclusions see fluid inclusions gems see also under economic geology gems--resources topaz: November's gem (Jenkins, John E.) genesis of ore deposits see mineral deposits, genesis geochemistry atmosphere: Vertical column abundance of atmospheric OH at solar maximum from Friz Peak (Burnett, Clyde R.) fluorine: Fluorine; its mineralogical residence in the oil shale of the Mahogany Zone of the Green River Formation, Piceance

Creek basin, Colorado,

U.S.A. (Saether, O. M.)

igneous rocks: Volcanism and the tectonic development of the Rio Grande Rift and environs, New Mexico-Colorado, from analysis of petrochemical data (Gornitz, Vivien M.) isotopes: Minor-element and Sr-isotope geochemistry of Tertiary stocks, Colorado mineral belt (Simmons, E. C.) -- Neodymium isotopes in the Colorado Front Range and crust-mantle evolution in the Proterozoic (DePaolo, D. J.) -- Rb/Sr isotopic ratios in selected lower crust-upper mantle nodules from Colorado-Wyoming kimberlites (Smith, C. B.) -- Solar neutrino production of technetium-97 and technetium-98 (Cowan, G. A.) -- Sulfur-isotope variations in marginal-lacustrine rocks of the Green River Formation, Colorado and Utah (Cole, Rex D.) magmas: Three distinct magma groups in the Wet Mountains area, Colorado (Armbrustmacher, T. J.) maps: Hydrogeochemical and stream sediment reconnaissance basic data for Limon Quadrangle. Colorado (Union Carbide Corporation, Oak Ridge Gaseous Diffusion Plant) metals: Analysis of metallic cations in the Lake Powell ecosystem and tributaries (Kidd, D. E.) organic materials: The chemistry of shale oil and its refined products (Fenton, Donald M.) trace elements: Analyses of rock and stream-sediment samples, Mount Zirkel Wilderness and northern Park Range vicinity, Jackson and Routt counties, Colorado (Snyder, G. L.) Element concentrations in rehabilitation species from thirteen coal-stripmines in five western states and Alaska (Gough, L. P.) -- Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork

exploration for porphyry

molybdenite deposits

Formation (Upper Cretaceous), northwestern Colorado (Hildebrand, R. Τ.) -- Iridium abunance measurements across the Cretaceous-Tertiary boundary in the San Juan and Raton basins of northern New Mexico (Orth,

- C. J.) -- The Redskin Granite; evidence for thermogravitational diffusion in a Precambrian granite batholith (Ludington, Steve)
- -- Uranium and trace elements in stream sediments as an exploration tool (Otton, James K.)
- weathering: Chemical and mineralogical composition and behavior of the Mancos Shale as a diffuse source of salts in the upper Colorado River basin (Evangelou, Vasilios Petros)
- geochemistry--processes chemical fractionation: Classification and fractionation of organic solutes in natural waters (Leenheer, Jerry A.) leaching: Underground
  - uranium ore leaching (Anonymous) solution: Chemical and
  - mineralogical composition and behavior of the Mancos Shale as a diffuse source of salts in the upper Colorado River basin (Evangelou, Vasilios Petros)

geochemistry--surveys

- 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.)
- -- Analyses of rock and stream-sediment samples, Mount Zirkel Wilderness and northern Park Range vicinity, Jackson and Routt counties, Colorado (Snyder, G. L.)
- -- 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 ₩.)

- -- Durango Quadrangle, Colorado (Theis, Nicholas J.)
- -- Element baselines for the Piceance Creek Basin, Colorado (Tuttle, Michele)
- Element concentrations in rehabilitation species from thirteen coal-stripmines in five western states and Alaska (Gough, L. P.)

-- Geochemical surveys of oil shale in the Piceance Creek basin, Colorado (Dean, W. E.)

- Hydrogeochemical and stream sediment reconnaissance basic data for Limon Quadrangle, Colorado (Union Carbide Corporation, Oak Ridge Gaseous Diffusion Plant)
- -- Integration and analysis by digital image processing techniques of multiple geological, geochemical, and geophysical data sets for the Montrose Quadrangle, Colorado (Wecksung, George W.)
- -- Leadville Quadrangle. Colorado (Collins, Donna Bishop)
- -- Rock Springs Quadrangle, Wyoming and Colorado (Morris, Armand V.)
- Trinidad Quadrangle, Colorado (Johnson, V. C.)
- -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 (Goff, Sue)
- geochronology see also absolute age
- geochronology
  - absolute age: Ages of igneous rocks in the South Park-Breckenridge region, Colorado, and their relation to the tectonic history of the Front-Range uplift (Bryant, Bruce) Cenozoic: Fission track annealing related to vein mineralization and
    - hydrothermal alteration,

Quray County, Colorado (Billings, Patty)

- Devonian: Fission-track dating of the Green Mountain kimberlite diatreme, near Boulder, Colorado (Larson, E. E.)
- Oligocene: Oligocene calibration of the magnetic polarity time scale (Prothero, Donald R.)
- Paleocene: New K-Ar ages from the Eldora-Bryan Stock and Idaho Springs Formation, Front Range, Colorado (Brookins, Douglas G.)
- geochronology--fission-track dating
  - Cenozoic: Fission track annealing related to vein mineralization and hydrothermal alteration, Ouray County, Colorado (Billings, Patty)
- geochronology--methods
- sedimentation rates: Gilbert; bedding rhythms and geochronology (Fischer, A. G.)
- sediments: Rockwall erosion in the northern Sangre de Cristo Mountains, Colorado; contributing factors, sequence, and
- rate (Grout, Marilyn Ann) geochronology--time scales Oligocene: Oligocene
- calibration of the magnetic polarity time scale (Prothero, Donald R.)
- geologic hazards see also under engineering geology; environmental geology
- geologic time see absolute age; geochronology
- geology--education general: Geology for non-geologists (Henry, Rebekah)
- geomorphology see also glacial geology
- geomorphology
  - eolian features: Sedimentology of Great Sand Dunes, Colorado (Andrews, Sarah)
  - fluvial features: Ancient drainage changes in and south of Unaweep Canyon, southwestern Colorado (Lohman, S. W.)
  - Metamorphosis of South Platte and Arkansas rivers, eastern Colorado (Nadler, C. T.)
  - 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 (Crowley, Kervin David)

- glacial geology: Allometry and cirque evolution (Olyphant, Greg A.)
- -- Glacial moraines, terraces and pediments of Grand Valley, western Colorado (Sinnock, Scott)
- -- Morphology and the role of landsliding in formation of some rock glaciers in the Mosquito Range, Colorado (Vick, Steven G.)
- -- Pleistocene drainage changes in Uncompanyre Plateau-Grand Valley region of western Colorado, including formation and abandonment of Unaweep Canyon; a hypothesis (Sinnock, Scott)
- Pleistocene surficial deposits of the Grand Mesa area, Colorado (Cole, Rex D.)
- -- Quaternary glacial and slope-failure deposits of the Crested Butte area, Gunnison County, Colorado (Robinson, Charles H.)
- -- Topoclimatic factors and the development of rock glacier facies, Sangre de Cristo Mountains, southern Colorado (Morris, Scott E.)
- landform description: An analysis of the hillslope-floodplain boundary (Rudd, Lawrence P.)
- landform evolution: Rockwall erosion in the northern Sangre de Cristo Mountains, Colorado; contributing factors, sequence, and rate (Grout, Marilyn Ann)
- maps: Generalized surficial geologic map of the Basin Mountain Quadrangle, Colorado (Moore, D. W.)
- -- Generalized surficial geologic map of the Kline Quadrangle, Colorado (Scott, G. R.)
- -- Paleovalley and geologic map of northeastern Colorado (Scott, G. R.)
- -- Surficial geologic map of the Grand Junction 1

degrees by 2 degrees quadrangle, Colorado and Utah (Whitney, J. W.)

- solution features: Subsurface void detection using surface resistivity and borehole electromagnetic techniques (Owen, T. E.)
- -- The Deep Creek caves; a thermal/meltwater complex? (Davis, Donald G.)
- geomorphology--eolian features dunes: Sedimentology of Great Sand Dunes, Colorado (Andrews, Sarah)
- geomorphology-fluvial features buried valleys: Paleovalley and geologic map of
  - and geologic map of northeastern Colorado (Scott, G. R.) channel geometry: Drigin,
  - channel geometry: 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 (Crowley, Kervin David)
  - channels: Hydrologic and morphologic changes in channels of the Platte River basin; a historical perspective (Eschner, T. R.)
  - drainage patterns: Ancient drainage changes in and south of Unaweep Canyon, southwestern Colorado (Lohman, S. W.)
  - rivers: Metamorphosis of South Platte and Arkansas rivers, eastern Colorado (Nadler C T )
  - (Nadler, C. T.)
     terraces: Glacial moraines, terraces and pediments of Grand Valley, western Colorado (Sinnock, Scott)
  - valleys: Geologic and physiographic highlights of the Black Canyon of the Gunnison River and vicinity, Colorado (Hansen, Wallace R.)
- geomorphology--landform description
  - canyons: The geologic story of Colorado National Monument (Lohman, S. W.)
  - floodplains: An analysis of the hillslope-floodplain boundary (Rudd, Lawrence P.)
  - terrain classification: A method of evaluating landform classification

systems for renewable resource assessment and planning (Kolenbrander, Lawrence Gene) geomorphology--landform evolution mountains: Rockwall erosion in the northern Sangre de Cristo Mountains, Colorado; contributing factors, sequence, and rate (Grout, Marilyn Ann) valleys: Pleistocene drainage changes in Uncompangre Plateau-Grand Valley region of western Colorado, including formation and abandonment of Unaweep Canyon; a hypothesis (Sinnock, Scott) geomorphology--maps surficial geology: Surficial geologic map of the Grand Junction 1 degrees by 2 degrees quadrangle, Colorado and Utah (Whitney, J. W.) surficial geology maps: Generalized surficial geologic map of the Basin Mountain Quadrangle, Colorado (Moore, D. W.) Generalized surficial geologic map of the Kline Quadrangle, Colorado (Scott, G. R.) geomorphology--mass movements collapse structures: Collapse structures in the Paradox Basin (Sugiura, Ray) landslides: Morphology and the role of landsliding in formation of some rock glaciers in the Mosquito Range, Colorado (Vick, Steven G.) sackung: Gravitational spreading of steep-sided ridges ("sackung") in western United States (Radbruch-Hall, D. H.) geomorphology--solution features caves: Empirical confirmation of Curl's (1974) flow velocity calculations (Pisarowicz, James A.) The Deep Creek caves; a thermal/meltwater complex? (Davis, Donald G.) solution cavities: Subsurface void detection using surface resistivity and borehole electromagnetic techniques

(Owen, T. E.)

- geophysical methods see under automatic data processing; mineral exploration geophysical surveys see under Great Plains; mineral exploration; Nebraska; see Earth-current surveys under geophysical surveys; see electromagnetic surveys under geophysical surveys; see gravity surveys under geophysical surveys; see magnetic surveys under geophysical surveys; see magnetotelluric surveys under geophysical surveys; see seismic surveys under geophysical surveys; see surveys under geophysical surveys; soils geophysical surveys
  - Earth-current surveys: Telluric profiling studies in the Penrose area, Colorado (Christopherson, K. R.)
  - electromagnetic surveys: Analog records from an airborne electromagnetic survey (using the Dighem II system) of parts of the Lake City Caldera, Hinsdale County, Colorado (Dighem)
  - -- Evaluation of geophysical techniques for diatreme delineation in the Colorado-Wyoming kimberlite province (Carlson, Jon A.)
  - -- Subsurface void detection using surface resistivity and borehole electromagnetic techniques (Owen, T. E.)
  - gravity surveys: Bouguer gravity map of the San Juan Basin area, Colorado, Arizona, and New Mexico (Suits, V. J.)
  - -- Principal facts for gravity stations in the Pueblo 1 degrees by 2 degrees quadrangle, South-central Colorado (Boler, F. M.)
  - (Boler, F. M.) heat flow: Geothermal gradient map of Colorado (Repplier, F. N.)
  - -- Revised heat flow map of Colorado (Zacharakis, Ted G.)
  - magnetic surveys: Aeromagnetic map of Colorado (Zietz, Isidore)
  - -- Geophysical studies in the Powderhorn Wilderness Study Area, Colorado (Martin, R. A.)

- magnetotelluric surveys: A high-resolution controlled-source audiomagnetotelluric system for mining applications (Duff, B. M.)
- maps: Aerial radiometric and magnetic survey. Limon National Topographic Map, Colorado: Nebraska-Dakotas project (Geodata International)
- -- Aerial radiometric and magnetic survey, Sterling National Topographic Map, Colorado/Kansas/Nebraska; Nebraska-Dakotas project (Geodata International)
- -- Aeromagnetic and complete Bouguer gravity anomaly maps of the Hunter-Fryingpan Wilderness Area, Pitkin County, Colorado (Campbell, D. L.)
- Aeromagnetic map of Colorado (Zietz, Isidore)
   Bouguer gravity map of the San Juan Basin area,
- Colorado, Arizona, and New Mexico (Suits, V. J.) -- Contour maps of uranium, uranium-thorium ratio, and
- uranium-thorium ratio, and total field magnetics, Lake City area, San Juan Mountains, Colorado (Heran, W. D.)
- -- Geothermal gradient map of Colorado (Repplier, F. N.)
- -- Map showing drill stem test and perforation recoveries of the Upper Cretaceous Mesaverde Group, Piceance Creek basin, Colorado (Nuccio, V. F.)
- -- Revised heat flow map of Colorado (Zacharakis, Ted G.)
- remote sensing: Geological reconnaissance of an oil shale region by remote sensing techniques (Shuchman, Robert A.)
- -- 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.)

- seismic surveys: Geophysical methods in prospecting for geothermal resources (Keller, G. V.)
- -- Seismic mapping key to Paradox Basin (McCaslin, John C.)
- -- Seismic models of sandstone stratigraphic traps in Rocky Mountain basins (Ryder, Robert T.)
- -- Seismic seam waves in the coal basin of Colorado (Reeves, James J.)
- -- Seismic surveying, salt anticline region, Paradox Basin (Scott, G. L.)
- surveys: Aeromagnetic and complete Bouguer gravity anomaly maps of the Hunter-Fryingpan Wilderness Area, Pitkin County, Colorado (Campbell, D. L.)
- -- Contour maps of uranium, uranium-thorium ratio, and total field magnetics, Lake City area, San Juan Mountains, Colorado (Heran, W. D.)
- -- Geological and geophysical investigations of kimberlite in the Laramie Range of southeastern Wyoming (Hausel, W. D.)
- -- Regional geophysical studies in the Pueblo 1 degrees X2 degrees quadrangle, Colorado (Boler, F. M.)
- -- Stacked profiles of data from a helicopter airborne radiometric and magnetic survey of the Lake City area, San Juan Mountains, Colorado (Heran, W. D.)
- well-logging: Density
  determinations from
  borehole gravity data from
  a shallow lignite zone
  within the Denver
  Formation near Watkins,
  Colorado (Robbins, Stephen
  L.)
- **geophysics** see also deformation; engineering geology
- geophysics--experimental studies

fracturing: Computer
 simulation of fracture in
 small scale borehole
 experiments in oil shale
 (Murri, W. J.)

- high pressure: Hugoniots of Colorado oil shale (Carter, W. J.)
- -- Microstructure of laboratory and nuclear

explosively deformed gas-bearing sandstones (Dengler, L. A.) -- Multiaxial testing to determine material behavior for design of energy related structures (Sture, S.) -- Oil shales under dynamic stress (Olinger, B.) geophysics--practice education: CSM Geophysic Department (Keller, G. V.) geosynclines see also orogeny geotechnics see engineering geology geothermal energy see also under economic geology glacial geology see also geomorphology glacial geology--glacial features changes: Pleistocene drainage changes in Uncompangre Plateau-Grand Valley region of western Colorado, including formation and abandonment of Unaweep Canyon; a hypothesis (Sinnock, Scott) cirgues: Allometry and cirque evolution (Olyphant, Greg A.) -- Quaternary glacial and slope-failure deposits of the Crested Butte area, Gunnison County, Colerado (Robinson, Charles H.) moraines: Glacial moraines, terraces and pediments of Grand Valley, western Colorade (Sinnock, Scott) outwash plains: Pleistocene surficial deposits of the Grand Mesa area, Colorado (Cole, Rex D.) glacial geology--glaciation effects: The Deep Creek caves; a thermal/meltwater complex? (Davis, Donald G.) glacial geology--glaciers rock glaciers: Morphology and the role of landsliding in formation of some rock glaciers in the Mosquito Range, Colorado (Vick, Steven G.) Topoclimatic factors and the development of rock glacier facies, Sangre de Cristo Mountains, southern

- Colorado (Morris, Scott E.) glaciation see under glacial geology
- glaciers see under glacial geology

gold ores see also under economic geology granites see under igneous rocks gravity surveys see under geophysical surveys Great Plains--economic geology fuel resources: Hugoton Field area, Colorado, Kansas, New Mexico and Oklahoma (Petromotion) maps: Hugoton Field area, Colorado, Kansas, New Mexico and Oklahoma (Petromotion) water resources: Economics of declining water supplies in the Ogallala Aquifer (Warren, John) Great Plains--environmental geology land use: Mapping irrigated cropland on the High Plains using Landsat (Thelin, Gail P.) Great Plains--geochronology Digocene: Oligocene calibration of the magnetic polarity time scale (Prothero, Donald R.) Great Plains--geophysical surveys remote sensing: Mapping irrigated cropland on the High Plains using Landsat (Thelin, Gail P.) Great Plains--hydrogeology ground water: Mapping irrigated cropland on the High Plains using Landsat (Thelin, Gail P.) -- 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.) Water-level records for the northern High Plains of Colorado, 1977-81 (Borman, R. G.) hydrology: Hydrologic and morphologic changes in channels of the Platte River basin; a historical perspective (Eschner, T. R.)

maps: 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 (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 (Luckey, R. R.) Great Plains--paleontology Mammalia: Multituberculates from the Wasatchian land-mammal age, early Eocene, of western North America (Krause, David) ground water see also hydrogeology; hydrology ground water--aquifers models: Design and merit of a river-aquifer model for optimal use of agricultural water (Morel-Seytoux, H. J.) ground water--geochemistry chemical analysis: Nonlinear complex resistivity logging (Olhoeft, Gary R.) organic materials: Classification and fractionation of organic solutes in natural waters (Leenheer, Jerry A.) ground water--surveys A ground water convection model for Rio Grande Rift geothermal resources (Harder, Vicki) -- Atlas of ground water quality in Colorado (Repplier, F. N.) -- Bailing and construction considerations for deep aquifer monitoring wells on Western oil shale leases (Kelly, K. E.) -- Computer simulation of movement of DIMP-contaminated groundwater near the Rocky Mountain Arsenal, Colorado (Robson, S. G.) -- Effects of a cattle feedlot on ground-water quality in the South Platte River valley near Greeley, Colorado (Borman. R. G.) -- Effects of effluents from a coal-fired electric-generating powerplant on local ground water near Hayden,

Colorado (Ellis, S. R.) -- Effects of residential wastewater treatment systems on ground-water quality in West-central Jefferson County, Colorado (Hall, D. C.)
Empirical confirmation of Curl's (1974) flow velocity calculations (Pisarowicz, James A.)
Evaluation of ground-water pumping and bailing methods; application in the oil shale industry (Slawson, G. C.)

- -- G. K. Gilbert and ground water, or "I have drawn this map with much reluctance" (Agnew, Allen F.)
- -- Generalized fence diagram showing stratigraphy and potentiometric surface of the Tertiary formations in southeastern Wyoming and an adjacent part of Colorado (Cooley, M. E.)
- Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado (Dickinson, Kendell A.)
- -- 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 Laramie-Fox Hills Aquifer in the Denver Basin, Colorado (Robson, S. G.)
- -- Ground-water development in western river basins; large economic gains with unseen costs (Daubert, John T.)
- -- Ground-water resources of the Denver basin (Robson, S. G.)
- -- Hydrogeochemistry and simulated solute transport, Piceance Basin, northwestern Colorado (Robson, S. G.)
- -- Hydrogeologic consequences of the modified in situ retorting process, Piceance Creek Basin, Colorado (Mehran, M.)
- -- Hydrology and chemical quality of ground water in Kiowa County, Colorado (Mustard, M. H.)
- -- Hydrothermal resources of western Colorado (Pearl, Richard Howard)
- -- Interrelationship of groundwater with

overburden and reclaimed spoil at an active surface mine in southwestern Colorado (Brown, Phillip) -- 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.)

- -- Preliminary data report for the San Juan Basin-Crownpoint surveillance study (Frenzel, P. F.)
- -- Quality of ground water in Routt County, northwestern Colorado (Covay, K. J.)
- -- Rocky Mountain Arsenal; landmark case of groundwater polluted by organic chemicals, and being cleaned up (Anonymous)
- -- Simulated interactions between the proposed narrows reservoirs and the water-table aquifer along the South Platte River, Morgan County, Colorado (Burns, A. W.)
- -- The groundwater watchers (Boyd, Vicky)
- -- The national ground water picture (Eisel, Leo M.)
- -- The relative importance of ground-water and surface-water supplies to oil-shale development, Piceance Basin, Colorado (Alley, W. M.)
- -- Three-dimensional hydrologic model of the Piceance Basin. Colorado (Taylor, O. J.)
- -- Water-level records for the northern High Plains of Colorado, 1977-81 (Borman, R. G.)
- -- Water-resources investigations of the U. S. Geological Survey in Colorado; fiscal year 1981 (Price, W. E., Jr.) Dakota Aquifer: Regional
- Dakota Aquifer: Regional study of the Dakota Aquifer (Darton's Dakota revisited) (Helgesen, J. 0.)

- Dawson Aquifer: Geologic structure, hydrology, and water quality of the Dawson Aquifer in the Denver Basin, Colorado (Robson, S. G.)
- Denver Aquifer: Geologic structure, hydrology, and water quality of the Denver Aquifer in the Denver Basin, Colorado (Robson, S. G.)
- Great Plains: Mapping irrigated cropland on the High Plains using Landsat (Thelin, Gail P.)
- -- 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 (Luckey, R. R.)
- High Plains Aquifer: 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 (Weeks, J. B.)
- Laramie-Fox Hills Aquifer: Occurrence and origin of natural gas in ground water, southern Weld County, Colorado (Rice, D. D.)
- Ogallala Aquifer: Economics of declining water supplies in the Ogallala Aquifer (Warren, John)
- Ogallala Formation: The Ogallala; half full or half empty? (McCray, Kevin)
- Piceance Creek: Geohydrology and surface water hydrology programs of the Equity/DOE BX In Situ Dil Shale Project, Rio Blanco County,
- Colorado (Markley, D. E.) guidebook see under areal geclogy
- heat flow see also under geophysical surveys; tectonophysics
- heavy minerals see under geochemical methods under mineral exploration; see under petrography under sedimentary rocks; see also placers
- Holocene see also under stratigraphy; see also under

stratigraphy under Rocky Mountains

- hot springs see thermal waters
   under hydrogeology
- human ecology see under analysis under ecology
- hydrocarbons see under organic materials
- hydrogeology see also ground water; hydrology
- hydrogeology
  - ground water: Atlas of ground water quality in Colorado (Repplier, F. N.) -- Bailing and construction
  - considerations for deep aquifer monitoring wells on Western oil shale leases (Kelly, K. E.)
  - -- Evaluation of ground-water pumping and bailing methods; application in the oil shale industry (Slawson, G. C.)
  - -- G. K. Gilbert and ground water, or "I have drawn this map with much reluctance" (Agnew, Allen F.)
  - -- Ground-water resources of the Denver basin (Robson, S. G.)
  - -- Hydrogeologic consequences of the modified in situ retorting process, Piceance Creek Basin, Colorado (Mehran, M.)
  - -- Hydrology and chemical quality of ground water in Kiowa County, Colorado (Mustard, M. H.)
  - -- Interrelationship of groundwater with overburden and reclaimed spoil at an active surface mine in southwestern Colorado (Brown, Phillip)
  - -- Dccurrence and origin of natural gas in ground water, southern Wald County, Colorado (Rice, D. D.)
  - -- 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.)
- hydrology: Changes in surface-water hydrology, Platte River basin in Colorado, Wyoming, and Nebraska upstream from Duncan, Nebraska (Kircher, J. E.)
- -- 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)
- Index of surface-water records to September 30, 1970; Part 9, Colorado River basin (Anonymous)

- -- 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)
- -- The Colorado (Clinton, M. J.)
- -- 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.)
- maps: Atlas of ground water quality in Colorado (Repplier, F. N.) -- 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 (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 (Robson, S. G.) springs: Geochemistry of

- springs. Geochemistry of spring water, southeastern Uinta Basin, Utah and Colorado (Kimball, B. A.) thermal waters:
- Hydrothermal resources of western Colorado (Pear!, Richard Howard)

## hydrogeology--concepts

- history: G. K. Gilbert and ground water, or "I have drawn this map with much reluctance" (Agnew, Allen F.)
- hydrology see also ground water; hydrogeology
- hydrology--rivers and streams models: Design and merit of a river-aquifer model for optimal use of agricultural water (Morel-Sevtoux, H. J.)
- hydrology--surveys
- A discussion of legal and institutional constraints on energy-related water development in the Yampa River basin, Colorado (Knudsen, Walter I., Jr.)
- -- A quantitative analysis of avalanche hazard on U. S. Highway 550, southwestern Colorado (Armstrong, B. R.)
- -- Characterization of urban runoff from Grange Hall Creek at Northglenn, Adams County, Colorado (Hall, D. C.)
- -- Debris flows in small mountain stream channels of Colorado and their hydrologic implications (Costa, John E.)
- -- Effects of energy-production emissions on Colorado lakes (Turk, J. T.)
- -- Empirical confirmation of Curl's (1974) flow velocity calculations (Pisarowicz, James A.)
- -- 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 8, Western Gulf of Mexico basins

(Anonymous)

- -- Optimal estimators of mean areal precipitation in regions of orographic influence (Chua, Siong-Huat)
- -- Rainfall-runoff modeling and preliminary regional flood characteristics of small rural watersheds in the Arkansas River basin in Colorado (Livingston, R. K.)
- -- 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)
- -- The effect of erosion on solute pickup from Mancos Shale hillslopes, Colorado, U.S.A. (Laronne, J. B.)
- -- The relative importance of ground-water and surface-water supplies to oil-shale development, Piceance Basin, Colorado (Alley, W. M.)
- -- Use of mathematical models to predict impacts of mining energy minerals on the hydrologic system in northwestern Colorado (Saulnier, G. J., Jr.)
- -- Variations in climatic characteristics as related to evapotranspiration in South Park, central Park County, Colorado (Spahr, N. E.)
- -- Water-resources investigations of the U. S. Geological Survey in Colorado; fiscal year 1981 (Price, W. E., Jr.)
- Arkansas River: Characterization of floodflows along the Arkansas River without regulation by Pueblo Reservoir, Portland to John Martin Reservoir, southeastern Colorado (Little, J. R.)
- -- Waste-assimilation capacity of the Arkansas River in Pueblo County, Colorado, as it relates to water-quality guidelines and stream classification (Cain, Doug)

- Cache La Poudre River: Adaptive real-time streamflow forecasting model for hydrosystem operational planning (Lazaro, Rogelio Cruz)
- Colorado River: Chemical and mineralogical composition and behavior of the Mancos Shale as a diffuse source of salts in the upper Colorado River basin (Evangelou, Vasilios Petros)
- -- Flood frequency analysis for regulated rivers (Buchberger, Steven G.)
- -- Index of surface-water records to September 30, 1970; Part 9, Colorado River basin (Anonymous)
- -- Index to water data acquisition; Region 14, Upper Colorado, 1980 (U. S. Geological Survey, Dffice of Water Data Coordination)
- -- Optimizing salinity control strategies for the upper Colorado River basin (Evans, Robert George)
- -- Quality of water; Colorado River basin (Anonymous)
- -- The Colorado (Clinton, M. J.)
- Green River: Water-quality characteristics of six small, semiarid watersheds in the Green River coal region of Colorado (Turk. J. T.)
- Missouri River: Index of surface-water records to September 30, 1970; Part 6, Missouri River basin (Anonymous)
- Piceance Creek: Geohydrology and surface water hydrology programs of the Equity/DDE BX In Situ Oil Shale Project, Rio Blanco County, Colorado (Markley, D. E.)
- -- Hydrogeochemistry and simulated solute transport, Piceance Basin, northwestern Colorado (Robson, S. G.)
- Platte River: Changes in surface-water hydrology, Platte River basin in Colorado, Wyoming, and Nebraska upstream from Duncan, Nebraska (Kircher, J. E.)
- -- Hydrologic and morphologic changes in channels of the Platte River basin; a historical

perspective (Eschner, T. R.)

- -- Potential use of a stream-aquifer model for management of a river basin; case of the South Platte River in Colcrado (Murel-Seytoux, H. J.)
- -- 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.)
- Rio Grande: Index to water data acquisition; Region 13, Rio Grande, 1980 (U. S. Geological Survey, Office of Water Data Coordination)
- San Juan Basin: Preliminary analysis of historical streamflow and water-quality records (Goetz, Carole L.)
- South Platte River: Effects of a cattle feedlot on ground-water quality in the South Platte River valley near Greeley, Colorado (Borman, R. G.)
- -- Ground-water development in western river basins; large economic gains with unseen costs (Daubert, John T.)
- -- Simulated interactions between the proposed narrows reservoirs and the water-table aquifer along the South Platte River, Morgan County, Colorado (Burns, A. W.)
- (Burns, A. W.) Yampa River: Assessment of impacts of proposed coal-resource and related economic development on water resources, Yampa River basin, Colorado and Wyoming; a summary (Steele, T. D.)
- hydrothermal alteration see under processes under metasomatism
- hydrothermal processes see under molybdenum ores under mineral deposits, genesis;see under processes under mineral deposits, genesis
- ice ages see glacial geology ichnofossils--paleoecology Cretaceous: Codell Member of the Carlile Shale at Liberty Point and in the vicinity of Pueblo, Colorado (Stop 1) (Basan,
- Paul B.) -- Cores for interpreting trace fossils and environments of deposition (Chamberlain, C. Kent) -- Road log (Basan, Paul В.) - -The trace fossils of the Cretaceous Dakota hogback along Alameda Avenue, west of Denver, Colorado (Stop 4) (Chamberlain, C. Kent) -- Trace fossils and depositional environments of the Purgatoire and Dakota formations at Canon City (Stop 3) (Scott, Robert W.) Ordovician: Ordovician Harding Formation at Indian Springs Ranch (Fischer, William A.) Road log (Basan, Paul B.) igneous rocks see also fluid inclusions; inclusions; intrusions; lava; magmas; metamorphic rocks; metasomatism igneous rocks--alkalic composition complexes: Geology, mineralogy, and geochemistry of the McClure Mountain alkalic complex, Fremont County, Colorado (Alexander, Donald Henry) genesis: The complex of alkaline rocks at Iron Hill, Powderhorn District, Gunnison County, Colorado (Armbrustmacher, Theodore J.) -- Three distinct magma groups in the Wet Mountains area, Colorado (Armbrustmacher, T. J.) igneous rocks--diabase properties: Is piezomagnetism influenced by microcracks during cyclic loading? (Martin, Randolph J., III) igneous rocks--geochemistry isotopes: Nd-isotopes in selected mantle-derived rocks and minerals and their implications for mantle evolution (Basu, A. R.)
  - -- Neodymium isotopes in the Colorado Front Range and crust-mantle evolution in the Proterozoic (DePaolo, D. J.)
- igneous rocks--granites composition: 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 (Howarth, R. J.) genesis: The Redskin Granite; evidence for thermogravitational diffusion in a Precambrian granite batholith (Ludington, Steve) pegmatite: Kindreds and districts of rare-mineral pegmatites in Colorado (Heinrich, E. William) -- The Black Cloud Pegmatite, Teller County, Colorado (Simmons, William B.) textures: Unidirectional solidification textures and their significance in determining relative ages of intrusions at the Henderson Mine, Colorado (Shannon, J. R.) igneous rocks--monzonites genesis: A study of Laramide igneous intrusions, east of Ward, Boulder County, Colorado (Gallagher, James Robert) igneous rocks--petrology lithostratigraphy: West Elk volcanic field, Gunnison and Delta counties, Colorado (Gaskill, D. L.) plutons: Structure and petrology of Cochetopa Pluton and its metamorphic wallrocks, Saguache County, Colorado (Hutchinson, Robert M.) igneous rocks--plutonic rocks petrology: Igneous rocks of the Elk Mountains and vicinity, Colorado; chemistry and related ore deposits (Mutschler, Felix E.) igneous rocks--pyroclastics tuff: West Elk volcanic field, Gunnison and Delta counties, Colorado (Gaskill, D. L.) welded tuff: 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 (Ellwood, Brooks B.)

igneous rocks--rhyolites topaz rhyolites: Topaz rhyolites; distribution, origin and significance to exploration for porphyry molybdenite deposits (Burt, Donald M.)

- igneous rocks--ultramafics kimberlite: Geological and geophysical investigations of kimberlite in the Laramie Range of southeastern Wyoming (Hausel, W. D.)
- igneous rocks--volcanic rocks alteration: Geology and hydrothermal alteration of the Iron Beds area, Hinsdale County, Colorado (Caskey, Deborah Jane)
  - chemical composition: Volcanism and the tectonic development of the Rio Grande Rift and environs, New Mexico-Colorado, from analysis of petrochemical data (Gornitz, Vivien M.)
  - geochemistry: Oligocene volcanic rocks; possible source of uranium in epigenetic deposits in parts of Chaffee, Park, and Fremont counties, Colorado (Dickinson, K. A.)
  - uranium ores: Model for the formation of uranium/lithophile element deposits in fluorine-rich volcanic rocks (Burt, Donald M.)
- impact statements see also under environmental geology;see also under environmental geology under Nebraska
- inclusions see also fluid inclusions
- inclusions--mineral inclusions
   goethite: Amethyst quartz
   with goethite inclusions
   (Swindle, Lewis J.)
  inclusions--xenoliths
   analysis: Rb/Sr isotopic
   ratios in selected lower
   crust-upper mantle nodules
   from Colorado-Wyoming
- kimberlites (Smith, C. B.)
  intrusions see also igneous
  rocks; metamorphism;
- metasomatism intrusions--age
- Cenozoic: Fission track annealing related to vein mineralization and hydrothermal alteration, Ouray County, Colorado (Billings, Patty)

intrusions--diatremes igneous rocks: Evaluation of geophysical techniques for diatreme delineation in the Colorado-Wyoming kimberlite province (Carlson, Jon A.) remote sensing: Infrared detection of kimberlitic diatremes in northern Colorado and southern Wyoming (McCallum, M. E.) intrusions--laccoliths composition: West Elk volcanic field, Gunnison and Delta counties, Colorado (Gaskill, D. L.) intrusions--petrology monzonite: A study of Laramide igneous intrusions, east of Ward, Boulder County, Colorado (Gallagher, James Robert) petrofabrics: Geology of some intrusions of the Guffey volcanic center (Cortellini, Edmund A.) intrusions--plutons composition: Structure and petrology of Cochetopa Pluton and its metamorphic wallrocks, Saguache County, Colorado (Hutchinson, Robert M.) geochemistry: Uranium content in Precambrian rocks, Colorado and Wyoming (Hills, F. A.) *kimberlite*: Fission-track dating of the Green Mountain kimberlite diatreme, near Boulder. Colorado (Larson, E. E.) intrusions--stocks absolute age: New K-Ar ages from the Eldora-Bryan Stock and Idaho Springs Formation, Front Range, Colorado (Brookins, Douglas G.) crystallization: Unidirectional solidification textures and their significance in determining relative ages of intrusions at the Henderson Mine, Colorado (Shannon, J. R.) emplacement: Exploration and geology of the Mt. Emmons molybdenite

deposits, Gunnison County, Colorado (Thomas, John A.) geochemistry: Geochemistry of a contact metamorphosed zone; implications for radwaste disposal in crystalline rocks (Brookins, Douglas G.)

Tertiary Minor-element and Sr-isotope geochemistry of Tertiary stocks, Colorado mineral belt (Simmons, E. C.) Invertebrata see also ichnofossils; Mollusca invertebrates see also brachiopods; conodonts iridium--geochemistry Evidence sedimentary rocks: 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 (Fassett, James Ε.) -- Iridium abunance measurements across the Cretaceous-Tertiary boundary in the San Juan and Raton basins of northern New Mexico (Orth, C. J.) iron--analysis chemical analysis: Evaluation of NH/4\_HCO/3\_-DTPA soil test for iron and zinc (Havlin, J. L.) iron--geochemistry aureoles: Geochemistry of a contact metamorphosed zone; implications for radwaste disposal in crystalline rocks (Brookins, Douglas G.) carbonate rocks: Geology of dolomite-hosted uranium deposits at the Pitch Mine, Saguache County, Colorado (Nash, J. Thomas) isotope dating see absolute age isotopes see also absolute age; geochronology isotopes--carbon C-13/C-12: Source and migration of light hydrocarbons indicated by carbon isotopic ratios (Reitsema, R. H.) isotopes--inclusions xenoliths: Rb/Sr isotopic ratios in selected lower crust-upper mantle nodules from Colorado-Wyoming kimberlites (Smith, C. B.) isotopes--neodymium Nd-144/Nd-143: Nd-isotopes in selected mantle-derived rocks and minerals and their implications for mantle evolution (Basu, A. R.)

-- Neodymium isotopes in the Colorado Front Range

and crust-mantle evolution in the Proterozoic (DePaolo, D. J.) isotopes--ratios aureoles: Geochemistry of a contact metamorphosed zone; implications for radwaste disposal in crystalline rocks (Brookins, Douglas G.) isotopes--strontium Sr-87/Sr-86: Minor-element and Sr-isotope geochemistry of Tertiary stocks, Colorado mineral belt (Simmons, E. C.) isotopes--sulfur S-34/S-32: Sulfur-isotope variations in marginal-lacustrine rocks of the Green River Formation, Colorado and Utah (Cole, Rex D.) isotopes--technetium Tc-97: Solar neutrino production of technetium-97 and technetium-98 (Cowan, G. A.) joints see under style under fractures Jurassic see also under stratigraphy laccoliths see under intrusions Lamellibranchiata see Bivalvia under Mollusca land use see also under engineering geology; environmental geology; see also under environmental geology under Great Plains land use--agriculture irrigation: Mapping irrigated cropland on the High Plains using Landsat (Thelin, Gail P.) land use--classification terrain classification: Δ method of evaluating landform classification systems for renewable resource assessment and planning (Kolenbrander, Lawrence Gene) landform description see under geomorphology landform evolution see under geomorphology landslides see under mass movements under geomorphology lava see also igneous rocks; magmas lava--geochemistry trace elements: Late Cenozoic volcanism of the northern New Mexico-southern Colorado portion of the Rio Grande

Rift (Dungan, Michael A.) lebensspuren see under biogenic structures under sedimentary structures lineation see also structural analysis liquid inclusions see fluid inclusions magmas see also igneous rocks; intrusions; lava magmas--classification geochemistry: Three distinct magma groups in the Wet Mountains area, Colorado (Armbrustmacher, T. J.) magmas--differentiation fractional crystallization: A study of Laramide igneous intrusions, east of Ward, Boulder County, Colorado (Gallagher, James Robert) Geology, mineralogy, and geochemistry of the McClure Mountain alkalic complex, Fremont County, Colorado (Alexander, Donald Henry) The Redskin Granite: evidence for thermogravitational diffusion in a Precambrian granite batholith (Ludington, Steve) magmas--genesis evolution: Topaz rhyolites; distribution, origin and significance to exploration for porphyry molybdenite deposits (Burt, Donald M.) rift zones: Late Cenozoic volcanism of the northern New Mexico-southern Colorado portion of the Rio Grande Rift (Dungan, Michael A.) magmas--geochemistry rare earths: Uranium content in Precambrian rocks, Colorado and Wyoming (Hills, F. A.) magnetic surveys see under geophysical surveys magnetism of rocks and minerals see paleomagnetism magnetotelluric surveys see under geophysical surveys Mammalia--Condylarthra Paleogene: The North American Phenacodontidae (Mammalia, Condylarthra) (West, Robert M.) Mammalia--faunal studies Pleistocene: Preliminary report on late Pleistocene vertebrates from the Selby and Dutton archeological/paleontolog-

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

Rocky Mountains metals--geochemistry sediments: Analysis of metallic cations in the Lake Powell ecosystem and tributaries (Kidd, D. E.) surface water: Predicted limnology of a proposed reservoir in Southwest Colorado (Baker, L. A.) metamorphic rocks see also igneous rocks; metamorphism; metasomatism metamorphic rocks--geochemistry isotopes: Neodymium isotopes in the Colorado Front Range and crust-mantle evolution in the Proterozoic (DePaolo, D. J.) metamorphic rocks--gneisses absolute age: New K-Ar ages from the Eldora-Bryan Stock and Idaho Springs Formation, Front Range, Colorado (Brookins, Douglas G.) metamorphic rocks--lithostratigraphy Precambrian: Precambrian rocks, northern Sangre de Cristo Range, Colorado (Reed, J. C., Jr.) metamorphic rocks--metaigneous rocks petrology: Structure and petrology of Cochetopa Pluton and its metamorphic wallrocks, Saguache County, Colorado (Hutchinson, Robert M.) metamorphic rocks--metasedimentary rocks gneisses: Stratigraphy and mineralogy of a zinc-rich sillimanite gneiss near Maysville, Chaffee County, Colorado (Knight, David Cooper) textures: Polyphase deformation and contact relationships of the Precambrian Uncompangre Formation, Needle Mountains, southwestern Colorado (Tewksbury, Barbara Jarvis) metamorphic rocks--metavolcanic rocks greenstone: Geochemistry of the Dubois greenstone succession; an early Proterozoic bimodal volcanic association in West-central Colorado (Condie, K. C.) intrusive rocks: Stratigraphy, petrology, and structure of

Precambrian metavolcanic rocks in the Iris District, Gunnison and Saguache counties, Colorado (Afifi, Abdulkader M.) metamorphic rocks--quartzites textures: Correlation between deformation lamellae, microfractures, macrofractures, and in situ stress measurements, White River Uplift, Colorado (Dula, William F., Jr.) metamorphism see also metamorphic rocks; metasomatism metamorphism--contact metamorphism clay mineralogy: Burial and contact metamorphism in the Mancos Shale (Nadeau, Paul H.) metasomatic rocks see also igneous rocks; metamorphic rocks; metamorphism; metasomatism metasomatism see also metamorphism metasomatism--materials igneous rocks: Igneous rocks of the Elk Mountains and vicinity, Colorado; chemistry and related ore deposits (Mutschler, Felix E.) metasomatism--processes hydrothermal alteration: Geology and hydrothermal alteration of the Iron Beds area, Hinsdale County, Colorado (Caskey, Deborah Jane) Geology of the Mount Emmons molybdenum deposit, Crested Butte, Colorado (Dowsett, Frederick R., Jr.) meteor craters see also meteorites meteorites--detection Truckton Meteorite: Meteorite hunting (Schmidt, Terry E.) methods see under chemical analysis; geochronology; mineral exploration; mining geology; paleomagnetism; spectroscopy Midwest see also Nebraska mineral deposits. genesis--controls geochemical controls: The genesis of the Los Ochos uranium deposits, Saguache County, Colorado (McCulla, Michael) lithologic controls: The geology and geochemistry

.

of the northeasterly gold veins, Sunnyside Mine, San Juan County, Colorado (Langston, David J.) structural controls: Relations between tectonism and mineralization in southwestern Colorado (Tweto, O. L.) mineral deposits, genesis--metal ores metamorphism: Precambrian mineralization and tectonic framework of Fremont County, Colorado (Ririe, George Todd) processes: Model for the formation of uranium/lithophile element deposits in fluorine-rich volcanic rocks (Burt. Donald M.) mineral deposits, genesis--molybdenum ores hydrothermal processes: Exploration and geology of the Mt. Emmons molybdenite deposits, Gunnison County, Colorado (Thomas, John A.) processes: Character and origin of climax-type molybdenum deposits (White, W. H.) structural controls: The Climax and Henderson molybdenum deposits in the USA (Ekiert, Franciszek) mineral deposits. genesis--polymetallic ores ore-forming fluids: Fluid-inclusion data on samples from Creede, Colorado, in relation to mineral paragenesis (Woods, T. L.) mineral deposits, genes is--processes hydrothermal processes: Geology and hydrothermal alteration of the Iron Beds area, Hinsdale County, Colorado (Caskey, Deborah Jane) plate tectonics: Tectonic setting and generation of Rocky Mountain porphyry molybdenum deposits (Bookstrom, Arthur A.) Volcano-tectonic setting of Tertiary ore deposits. southern Rocky Mountains (Lipman, Peter W.) sedimentary processes: Geology and recognition criteria for sandstone uranium deposits of the salt wash type, Colorado Plateau Province; final report (Thamm, John K.)

mineral deposits, genesis--uranium ores controls: Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado (Dickinson, K. A.)

- diagenesis: Uranium mineralization and depositional facies in the Permian rocks of the northern Paradox Basin, Utah and Colorado (Campbell, John A.)
- geochemical controls: Dligocene volcanic rocks; possible source of uranium in epigenetic deposits in parts of Chaffee, Park, and Fremont counties, Colorado (Dickinson, K. A.)
- mineralization: Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado (Dickinson, Kendell A.)
- -- Proterozoic origins of uranium mineralization in the Colorado Front Range (Nelson, Carl E.)
- ore-forming fluids: Jasperoid as a possible indicator of uranium source, Pitch mine, Colorado (Nash, J. T.)

# mineral deposits,

genesis--zinc ores processes: Stratigraphy and mineralogy of a zinc-rich sillimanite gneiss near Maysville, Chaffee County, Colorado (Knight, David Cooper)

#### mineral exploration--applications uranium ores: Survey of lands held for uranium

exploration, development, and production in fourteen western states in the six-month period ending December 31, 1980 (Bendix Field Engineering Corporation, Grand Junction Operations)

# mineral

# exploration--geobotanical methods

uranium ores: Uranium in big sagebrush from Western U.S. and evidence of possible mineralisation in the Owyhee Mountains of Idaho (Erdman, J. A.)

# mineral exploration--geochemical methods heavy minerals: Mineralization in the Williams Fork, Colorado (Theobald, P. K.) statistical analysis: Uranium resource assessment through statistical analysis of exploration, geochemical, and other data; final report (Koch, George S., Ur.) stream sediments: Data

- 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.)
- -- 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., Jr.)
- -- Geochemical and geostatistical evaluation of American Flats-Silverton planning units, San Juan volcanic province, Colorado (Weiland, E. F.)
- -- 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 (Howarth, R. J.)
- trace elements: Analyses of rock and stream-sediment samples, Mount Zirkel Wilderness and northern Park Range vicinity, Jackson and Routt counties, Colorado (Snyder, G. L.)
- -- The geology and geochemistry of the northeasterly gold veins, Sunnyside Mine, San Juan County, Colorado (Langston, David J.)

- 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.)
- -- Drilling-mud emanometry; a new technique for uranium exploration (Bell, M. W.)
- -- Hydrogeochemical and stream sediment reconnaissance basic data for Limon Quadrangle, Colorado (Union Carbide Corporation, Oak Ridge Gaseous Diffusion Plant)
- -- Uranium and trace elements as an exploration tool (Otton, James K.)
- -- Uranium and trace elements in stream sediments as an exploration tool (Otton, James K.)
- -- 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 (Goff, Sue)

mineral

#### exploration--geological methods

uranium ores: Uranium potential of Precambrian quartz-pebble conglomerates in the United States; a summary (Anderson, Jule R.)

mineral

# exploration--geophysical methods

- magnetic methods: Geophysical studies in the Powderhorn Wilderness Study Area, Colorado (Martin, R. A.)
- mineral resources: Regional geophysical studies in the Pueblo 1 degrees X2 degrees quadrangle, Colorado (Boler, F. M.)
- uranium ores: Aerial radiometric and magnetic survey, Limon National Topographic Map, Colorado; Nebraska-Dakotas project (Geodata International)
- -- Aerial radiometric and magnetic survey, Sterling

National Topographic Map, Colorado/Kansas/Nebraska; Nebraska-Dakotas project (Geodata International) mineral exploration--geophysical surveys well-logging: A geologic report on the Sand Wash Drilling Project, Moffat and Routt counties. Colorado (Carter, Thomas E.) mineral exploration--methods uranium ores: Durango Quadrangle, Colorado (Theis, Nicholas J.) Leadville Quadrangle, Colorado (Collins, Donna Bishop) Multisource data set integration and characterization of uranium mineralization for the Montrose Quadrangle, Colorado (Bolivar, Stephen L.) -- Rock Springs Quadrangle, Wyoming and Colorado (Morris, Armand V.) -- Trinidad Quadrangle, Colorado (Johnson, V. C.) mineral exploration--programs uranium ores: Uranium favorability in the Pueblo 1 degrees X2 degrees NURE quadrangle, Colorado (Dickinson, K. A.) mineral exploration--remote sensing mineral resources: Integration and analysis by digital image processing techniques of multiple geological, geochemical, and geophysical data sets for the Montrose Quadrangle, Colorado (Wecksung, George W.) uranium ores: 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 (Heran, W. D.) mineral exploration--statistical methods System of Uranium Resource Evaluation: Uranium

resource assessment through statistical

analysis of exploration geochemical and other data; final report (Koch. George S., Jr.) mineral inclusions see under inclusions mineral prospecting see mineral exploration mineral resources see also under economic geology mineralogy carbonates: Unusual luminescence of calcite from the Piceance Creek basin, Rio Blanco Co., northwestern Colorado (Verbeek, Earl R.) miscellaneous minerals: Collecting in colorful Colorado (Rohde, Byron H.) Rockhounding in the sky (Voynick, Steve) -- Shavano Peak ... a new Mt. Antero? (Truebe, Henry A.) organic compounds: Mercury amidonitrate crystals from Colorado (Rouse, Roland C.) orthosilicates, garnet group: Garnets on Ruby Mountain (Gilliam, Juanita) cxides: A U. S. review; Chrysoberyl (Jacobson, Mark I.) -- Amethyst quartz with goethite inclusions (Swindle, Lewis J.) sulfates: Water-clear barite from Muddy Creek, Colorado (Truebe, Henry Α.) minerals see also crystal growth; crystal structure minerals--carbonates aragonite: Aragonite; for a common mineral, it's amazingly scarce (Jones, Bob) calcite: Unusual luminescence of calcite from the Piceance Creek basin, Rio Blanco Co., northwestern Colorado (Verbeek, Earl R.) minerals--miscellaneous minerals collecting: Collections and displays; Coors Hall of Minerals, Denver Museum of Natural History (Jacobson, Mark I.) -- Rockhounding in the sky (Voynick, Steve) -- Shavano Peak ... a new Mt. Antero? (Truebe, Henry Α.) -- Western gem hunters

atlas (Johnson, H. Cyril)

occurrence: Collecting in colorful Colorado (Rohde, Byron H.) minerals--native elements diamond: Diamond collecting in northern Colorado (Collins, Donley S.) minerals--occurrence authigenic minerals: Authigenic kaolinite and associated pyrite in chalk of the Cretaceous Niobrara Formation, eastern Colorado (Pollastro. Richard M.) pegmatite: Kindreds and districts of rare-mineral pegmatites in Colorado (Heinrich, E. William) -- The Black Cloud Pegmatite, Teller County, Colorado (Simmons, William B.) minerals--organic compounds mercury amidonitrate: Mercury amidonitrate crystals from Colorado (Rouse, Roland C.) minerals--orthosilicates, garnet group collecting: Garnets on Ruby Mountain (Gilliam, Juanita) minerals--oxides chrysoberyl: A U. S. review; Chrysoberyl (Jacobson, Mark I.) goethite: Amethyst quartz with goethite inclusions (Swindle, Lewis J.) hematite: Nature and origin of hematite in the Moenkopi Formation (Triassic), Colorado Plateau; a contribution to the origin of magnetism in red beds (Walker, Theodore R.) minerals--sulfates barite: Water-clear barite from Muddy Creek, Colorado (Truebe, Henry A.) gypsum: Dissolution and transport of gypsum in soils; II, Experimental (Glas, T. K.) minerals--sulfides trace elements: Proterozoic syngenetic massive sulfide deposits in the Gunnison gold belt, Colorado (Drobeck, P. A.) mining geology--applications hydraulics: Hydraulic mining research; a progress report (Palowitch, E. R.)

mining geology--evaluation coal: A critical evaluation of published Western coal-resource estimates (Glass, Gary B.) safety: 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 (Dewey, R. S.) mining geology--methods integrated in situ technique: Mining in the Saline Zone (Weichman, Bernard E.) Miocene see also under stratigraphy miospores see under palynomorphs Mollusca--Bivalvia Cretaceous: Evolutionary mode in Pleuriocardium (Cretaceous Bivalvia) (Geary, Dana Helen) molybdenum--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.) molybdenum ores see also under economic geology; see also under economic geology under Colorado Plateau; Rocky Mountains monzonites see under igneous rocks moraines see under glacial features under glacial geology mud volcanoes see also volcanology museums see also under economic geology; survey organizations museums--economic geology Western Museum of Mining and Industry: C. Clay Crawford (Schrager, Debra) -- Conducting a fire assay for school children (Spicer, Claudia A.) museums--mineralogy Denver Museum of Natural History: Collections and displays; Coors Hall of Minerals, Denver Museum of Natural History (Jacobson, Mark I.) native elements see under minerals

natural gas--production nuclear explosions: Microstructure of laboratory and nuclear explosively deformed gas-bearing sandstones (Dengler, L. A.) Nebraska--economic geology fuel resources: Developments in eastern and northwestern Colorado and western Nebraska in 1967 (Volk, Richard W.) maps: Denver Basin; Colorado, Wyoming, Kansas and Nebraska (Petromotion) natural gas: The Cretaceous Niobrara play (Smagala, Tom) oil and gas fields: Denver Basin; Colorado, Wyoming, Kansas and Nebraska (Petromotion) uranium ores: Aerial radiometric and magnetic survey, Sterling National Topographic Map, Colorado/Kansas/Nebraska; Nebraska-Dakotas project (Geodata International) water resources: The Ogallala; half full or half empty? (McCray, Kevin) Nebraska--environmental geology impact statements: 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) Nebraska--geomorphology fluvial features: Origin, structure, and internal stratification of three hierarchical classes of bedforms in unidirectional flows; examples from

natural gas see also under

Nebraska

economic geology; see also

under economic geology under

laboratory rivers and the channels of the Platte River basin in Colorado and Nebraska (Crowley, Kervin David) Nebraska--geophysical surveys

maps: Aerial radiometric and magnetic survey, Sterling National Topographic Map, Colorado/Kansas/Nebraska;

Nebraska-Dakotas project (Geodata International) Nebraska--hydrogeology hydrology: Changes in surface-water hydrology, Platte River basin in Colorado, Wyoming, and Nebraska upstream from Duncan, Nebraska (Kircher, J. E.) -- Hydrologic and morphologic changes in channels of the Platte River basin; a historical perspective (Eschner, T. R.) Nebraska--sedimentary petrology sedimentary structures: Something about septaria (Kennedy, Marie) sediments: 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.) Nebraska--stratigraphy Mesozoic: Tectonics, sedimentation, and petroleum potential, northern Denver Basin, Colorado, Wyoming, and Nebraska (Sonnenberg, Stephen A.) Paleozoic: Tectonics, sedimentation, and petroleum potential, northern Denver Basin, Colorado, Wyoming, and Nebraska (Sonnenberg, Stephen A.) neodymium--isotopes Nd-144/Nd-143: Nd-isotopes in selected mantle-derived rocks and minerals and their implications for mantle evolution (Basu, A. R.). -- Neodymium isotopes in the Colorado Front Range and crust-mantle evolution in the Proterozoic (DePaolo, D. J.) neotectonics see also under structural geology New York--mineralogy oxides: A U. S. review; Chrysoberyl (Jacobson, Mark I.) Nicaragua--economic geology fuel resources: Petroleum in continental facies (Swain, Frederick M.) noble gases see also radon North America see also Canada;

Great Plains; Rocky

Mountains

- oil and gas fields see also under economic geology;see also under economic geology under Nebraska; Rocky Mountains
- oil shale see also under economic geology
- oil shale--production explosions: Computer simulation of fracture in small scale borehole experiments in oil shale (Murri, W. J.)
- oil shale--properties elastic properties: Oil shales under dynamic stress (Olinger, B.)
- Oligocene see also under geochronology;see also under geochronology under Great Plains
- organic compounds see under minerals
- organic materials--abundance water: Ground-water resources of the Denver basin (Robson, S. G.)
- organic materials--classification solutes: Classification and fractionation of organic solutes in natural waters (Leenheer, Jerry A.)
- organic
- materials--distribution
  - diisopropylmethylphosphonate: Computer simulation of movement of DIMP-contaminated groundwater near the Rocky Mountain Arsenal, Colorado (Robson, S. G.)
- organic
- materials--geochemistry
  oil shale: The chemistry of
  shale cil and its refined
  products (Fenton, Donald
  M.)
- uranium ores: Organic geochemistry of uranium in the Grants mineral belt (Leventhal, J. S.)
- organic
  - materials--hydrocarbons genesis: Petroleum in continental facies (Swain,
  - Frederick M.) identification: Source and migration of light hydrocarbons indicated by carbon isotopic ratios (Reitsema, R. H.)
  - methane: 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 (Choate, Raoul)

- -- Methane in Cretaceous and Paleocene coals of western Colorado (Tremain, C. M.)
- -- Occurrence and origin of natural gas in ground water, southern Weld County, Colorado (Rice, D. D.)
- -- Upper Cretaceous (Campanian) coal resources of Western Colorado (Murray, D. Keith)
- orogeny--evolution Laramide Orogeny: Volcano-tectonic setting of Tertiary ore deposits, southern Rocky Mountains (Lipman, Peter W.) orogenic belts: Plate tectonics of the ancestral Rocky Mountains (Kluth,
- Charles F.) oxides see under minerals
- oxygen--geochemistry surface water: Predicted limnology of a proposed reservoir in Southwest Colorado (Baker, L. A.)
- oxygen--isotopes 0-18/0-16: Geochemistry of a contact metamorphosed zone; implications for radwaste disposal in crystalline rocks (Brookins, Douglas G.)
- Paleocene see also under geochronology
- paleoclimatology--Holocene 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 (Maher, L. J., Jr.)
  - -- 10,000 years of climatic change reconstructed from fossil pollen, La Plata Mountains, southwestern Colorado (Petersen, Kenneth Lee)
- paleoclimatology--Permian Paleoclimatic interpretations of the Permian Cutler Formation in western Colorado from a comparison of size-composition trends of the Cutler Formation and Holocene sands (Gibboney, Melissa J.)
- paleoclimatology--Quaternary Lower timberline in central Colorado during the past 15,000 yr (Markgraf, Vera)

- -- Paleoclimate reconstructed from Paleosols; evidence from the Rocky Mountains and East Africa (Mahaney, W. C.)
- -- Prehistoric man and climate; the view from timberline (Benedict, James B.)
- -- Quaternary deposits of the Paradox Basin (Biggar, Norma E.)
- Rocky Mountains: Paleoclimate reconstructed from Paleosols; evidence from the Rocky Mountains and East Africa (Mahaney, W. C.)
- paleoecology--Holocene
  - 10,000 years of climatic change reconstructed from fossil pollen, La Plata Mountains, southwestern Colorado (Petersen, Kenneth Lee)
- paleoecology--Mammalia Eocene: Variation, sexual dimorphism, and social structure in the early Eocene horse Hyracotherium (Mammalia, Perissodactyla) (Gingerich, Philip D.)
- paleoecology--Pisces Eocene: Eocene freshwater fishes from the Coalmont Formation, Colorado (Wilson, Mark V. H.)
- paleoecology--Quaternary Lower timberline in central Colorado during the past 15,000 yr (Markgraf, Vera)
- -- Prehistoric man and climate; the view from timberline (Benedict, James B.)
- paleogeography--Cretaceous
- Characteristics of deltaic deposits in the Cretaceous Pierre Shale, Trinidad Sandstone, and Vermejo Formation, Raton Basin, Colorado (Flores, Romeo M.)
  - -- Investigation of the Carlile-Niobrara unconformity (Upper Cretaceous) in northeastern New Mexico and southeastern Colorado (Laferriere, Alan Price)
  - -- The bedrock geology of the Ridgway area, Ouray County, Colorado (Weimer, Paul)
  - -- Transgressions and regressions of Cretaceous epeiric sea in Colorado, North Dakota, South Dakota, and Wyoming

(Merewether, E. A.) paleogeography--Eocene Stratigraphic evidence for a deep Eocene Lake Uinta, Piceance Creek basin, Colorado (Johnson, Ronald C.)

- paleogeography--Jurassic Colorado Plateau: Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau (Tyler, Noel)
- paleogeography--Mesozoic Mesozoic stratigraphy of the Paradox Basin; an overview (Molenaar, C. M.) paleogeography--Permian
- Depositional model for the lower Fountain Formation in the Manitou Embayment, Colorado (Fishbaugh, David A.)
- paleomagnetism--methods
   demagnetization: Selective
   destructive
   demagnetization; another
   microanalytic technique in
   rock magnetism (Larson, E.
   E.)

paleomagnetism--Oligocene 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 (Ellwood, Brooks B.)
- Great Plains: Oligocene calibration of the magnetic polarity time scale (Prothero, Donald R.)
- paleomagnetism--Proterozoic
  Preliminary paleomagnetic
  poles and correlation of
  the Proterozoic Uinta
  Mountain Group, Utah and
  Colorado (Bressler,
  Stephen L.)
- paleomagnetism--Triassic Colorado Plateau: Nature and origin of hematite in the Moenkopi Formation (Triassic), Colorado Plateau; a contribution to the origin of magnetism in red beds (Walker, Theodore R.)
  - -- Paleomagnetism of the Moenkopi Formation, Colorado Plateau; basis for long-term model of acquisition of chemical remanent magnetism in red beds (Larson, E. E.)

paleontology

- Invertebrata: Our trip to Indian country; 1981 (Haik, Vernon)
- Mammalia: A new species of triconodont mammal from the Upper Jurassic of Colorado (Rasmussen, T. E.)
- -- An apternodontid (Insectivora) from the Chadronian Oligocene of northeastern Colorado (Galbreath, Edwin C.)
- -- Metadjidaumo (Eomyidae, Rodentia) from Colorado and Wyoming (Korth, William W.)
- -- Multituberculates from the Wasatchian land-mammal age, early Eocene, of western North America (Krause, David)
- -- Preliminary report on late Pleistocene vertebrates from the Selby and Dutton archeological/paleontological sites, Yuma County, Colorado (Graham, Russell W.)
- -- The North American Phenacodontidae (Mammalia, Condylarthra) (West, Robert M.)
- -- Variation, sexual dimorphism, and social structure in the early Eocene horse Hyracotherium (Mammalia, Perissodactyla) (Gingerich, Philip D.)
- Mollusca: Evolutionary mode in Pleuriocardium (Cretaceous Bivalvia) (Geary, Dana Helen)
- Pisces: Eocene freshwater fishes from the Coalmont Formation, Colorado (Wilson, Mark V. H.)
- Reptilia: A new herbivorous sphenodontid (Rhynchocephalia; Reptilia) from the Jurassic of Colorado (Rasmussen, T. E.)
- -- Small bones of the hypsilophodontid dinosaur Dryosaurus altus from the Upper Jurassic of Colorado (Galton, Peter M.)
- -- The dinosaur menagerie (Pearl, Richard M.)
- -- The great quarry (Pearl, Richard M.)
- Paleosols see under soils Paleozoic see also under stratigraphy;see also under stratigraphy under Nebraska

- palynomorphs--biostratigraphy Cretaceous: Palynology of the coal and depositional environments in the Upper Cretaceous, northwestern Colorado, United States (Martinez-Hernandez, Enrique)
- palynomorphs--evolution extinction: 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 (Fassett, James E.)
  - -- Iridium abunance measurements across the Cretaceous-Tertiary boundary in the San Juan and Raton basins of northern New Mexico (Orth, C. J.)
- palynomorphs--miospores Holocene: 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 (Maher, L. J., Jr.) -- 10,000 years of climatic
  - change reconstructed from fossil pollen, La Plata Mountains, southwestern Colorado (Petersen, Kenneth Lee)
- *Quaternary*: Lower timberline in central Colorado during the past 15,000 yr (Markgraf, Vera)
- paragenesis--gold ores
  The geology and geochemistry
  of the northeasterly gold
  veins, Sunnyside Mine, San
  Juan County, Colorado
  (Langston, David J.)
- paragenesis--polymetallic ores
  Fluid-inclusion data on
  samples from Creede,
  Colorado, in relation to
  mineral paragenesis
  (Woods, T. L.)
- paragenesis--uranium ores Stratigraphy and uranium paragenesis, Lake City caldera, Colorado (Hon, K. A.)
- pegmatite see also under granites under igneous rocks Pelecypoda see Bivalvia under Mollusca
- Pennsylvanian see also under stratigraphy
- Permian see also under stratigraphy

petroleum see also under economic geology petroleum--exploration indicators: Source and migration of light hydrocarbons indicated by carbon isotopic ratios (Reitsema, R. H.) well-logging: Natural gamma
 ray spectral logging aids; Granite Wash Reservoir evaluation (Schenewerk, Philip Andrew) petroleum--production synthesis: Chevron plans start of pilot oil shale facilities (Anonymous) petrology

- igneous rocks: Geology, mineralogy, and geochemistry of the McClure Mountain alkalic complex, Fremont County, Colorado (Alexander, Donald Henry)
- -- Igneous rocks of the Elk Mountains and vicinity, Colorado; chemistry and related ore deposits (Mutschler, Felix E.)
- -- Kindreds and districts of rare-mineral pegmatites in Colorado (Heinrich, E. William)
- -- The Black Cloud Pegmatite, Teller County, Colorado (Simmons, William B.)
- -- The complex of alkaline rocks at Iron Hill, Powderhorn District, Gunnison County, Colorado (Armbrustmacher, Theodore J.)
- intrusions: A study of Laramide igneous intrusions, east of Ward, Boulder County, Colorado (Gallagher, James Robert)
- -- Fission track annealing related to vein mineralization and hydrothermal alteration, Ouray County, Colorado (Billings, Patty)
- -- Geology of some intrusions of the Guffey volcanic center (Cortellini, Edmund A.)
- -- Minor-element and Sr-isotope geochemistry of Tertiary stocks, Colorado mineral belt (Simmons, E. C.)
- -- Structure and petrology of Cochetopa Pluton and its metamorphic wallrocks, Saguache County, Colorado (Hutchinson, Robert M.)

-- Unidirectional solidification textures and their significance in determining relative ages of intrusions at the Henderson Mine, Colorado (Shannon, J. R.)

- -- West Elk volcanic field, Gunnison and Delta counties, Colorado (Gaskill, D. L.)
- lava: Late Cenozoic volcanism of the northern New Mexico-southern Colorado portion of the Rio Grande Rift (Dungan, Michael A.)
- metamorphic rocks: Geochemistry of the Dubois greenstone succession; an early Proterozoic bimodal volcanic association in West-central Colorado (Condie, K. C.)
- -- Stratigraphy, petrology, and structure of Precambrian metavolcanic rocks in the Iris District, Gunnison and Saguache counties, Colorado (Afifi, Abdulkader M.)
- metasomatism: Geology and hydrothermal alteration of the Iron Beds area, Hinsdale County, Colorado (Caskey, Deborah Jane)
- -- Geology of the Mount Emmons molybdenum deposit, Crested Butte, Colorado (Dowsett, Frederick R., Jr.)
- volcanism: 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 (Ellwood, Brooks B.)
- Phanerozoic see also under stratigraphy
- phosphorus--geochemistry
  soils: Phosphate adsorbed
  and desorbed from three
  regional soils (Yekini,
  B.)
  - -- Residual available phosphorus in near-neutral and alkaline soils; I, Solubility and capacity relationships (Fixen, P. E.)
  - -- Residual available phosphorus in near-neutral and alkaline soils; II, Persistence and

quantitative estimation (Fixen, P. E.) physical geography see geomorphology Pisces--Osteichthyes Eocene: Eocene freshwater fishes from the Coalmont Formation, Colorado (Wilson, Mark V. H.) placers--diamonds Geological and geophysical investigations of kimberlite in the Laramie Range of southeastern Wyoming (Hausel, W. D.) Plantae see also ichnofossils; palynomorphs plate tectonics see also under tectonophysics; see also under tectonophysics under Rocky Mountains Pleistocene see also under stratigraphy Pleistocene--stratigraphy archaeology: The Ginsberg experiment; modern and prehistoric evidence of a bone-flaking technology (Stanford, Dennis) plutons see under intrusions pollution see also under environmental geology; see also under environmental geology under automatic data processing; Rocky Mountains pollution--water water quality: Classification and fractionation of organic solutes in natural waters (Leenheer, Jerry A.) polymetallic ores see also under economic geology Precambrian see also under stratigraphy Proterozoic see also under stratigraphy pyroclastics see under igneous rocks Quaternary see also under stratigraphy quicksilver see mercury radioactive dating see absolute age radiocarbon dating see absolute age radon--abundance drilling muds: Drilling-mud emanometry; a new technique for uranium exploration (Bell, M. W.) rare earths see also neodymium; scandium rare earths -- geochemistry greenstone: Geochemistry of the Dubois greenstone succession; an early Proterozoic bimodal volcanic association in

West-central Colorado

(Condie, K. C.) magmas: Three distinct magma groups in the Wet Mountains area, Colorado (Armbrustmacher, T. J.) reclamation see also under environmental geology remote sensing see under mineral exploration; see also under geophysical surveys; see also under geophysical surveys under Great Plains remote sensing--interpretation applications: Remote sensing laboratory manual (Sabins, Floyd F., Jr.) reptiles see also Reptilia Reptilia--dinosaurs Cretaceous: Lower Cretaceous rocks, southwestern Colorado and southeastern Utah (Craig, Lawrence C.) occurrence: The dinosaur menagerie (Pearl, Richard M.) -- The great quarry (Pearl, Richard M.) Reptilia--evolution extinction: 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 (Fassett, James E.) Reptilia--Ornithischia Jurassic: Small bones of the hypsilophodontid dinosaur Dryosaurus altus from the Upper Jurassic of Colorado (Galton, Peter M.) Reptilia--Rhynchocephalia Jurassic: A new herbivorous sphenodontid (Rhynchocephalia; Reptilia) from the Jurassic of Colorado (Rasmussen, T. E.) reservoir rocks see under clastic rocks under sedimentary rocks;see under materials, properties under rock mechanics; see under petroleum engineering under engineering geology reservoirs see also under engineering geology resistivity see under electrical logging under well-logging

- rhyolites see under igneous rocks
- rivers see under fluvial features under geomorphology

road log see under areal geology rock mechanics see also soil mechanics rock mechanics--case studies roof support: Comparison of rock mass classification systems; Mt. Axtell Tunnel, Gunnison County, Colorado (Stewart, Daniel Russell) uniaxial tests: Uniaxial creep of oil shale under elevated temperatures (Chu, Ma-Suh) rock mechanics--deformation stress: Stress orientations from borehole wall fractures with examples from Colorado, East Texas, and northern Canada (Gough, D. I.) rock mechanics--materials, properties elastic properties: Multiaxial testing to determine material behavior for design of energy related structures (Sture, S.) oil shale: Hugoniots of Colorado oil shale (Carter, W. J.) -- Oil shales under dynamic stress (Olinger, B.) -- Tensile strengths of Colorado and Utah oil shales (Chong, Ken P.) piezomagnetism: Is piezomagnetism influenced by microcracks during cyclic loading? (Martin, Randolph J., III) reservoir properties: Reservoir properties of Niobrara Formation, Denver basin (Pollastro, R. M.) reservoir rocks: Microstructure of laboratory and nuclear explosively deformed gas-bearing sandstones (Dengler, L. A.) sandstone: Field mechanical properties of a jointed sandstone (Swolfs, H. S.) Mechanical behavior of Mesaverde shale and sandstone at high pressure (Lin, Wunan) -- Postshot in situ material property tests at the Mixed Company site. Colorado (Palmerton, J. В.) statistical analysis: Statistical analysis and modeling of the physical, mechanical, and strength

properties of oil shale

(Bondurant, E. J.) stress: Stress relaxation in oil shale (Olsson, W. A.) -- Subterranean stress engineering experiments (Campbell, J. R.) Rocky Mountains--economic geology fuel resources: Oil and gas prospecting beneath the Precambrian of foreland thrust plates in the Rocky Mountains (Gries, Robbie) -- Rocky Mountain region; oil and gas production (Petromotion) Southern Rockies; eastern and northwestern Colorado (Dolson, John) maps: Rocky Mountain region; oil and gas production (Petromotion) -- West central Rocky Mountain region (Petromotion) metal ores: Volcano-tectonic setting of Tertiary ore deposits, southern Rocky Mountains (Lipman, Peter W.) molybdenum ores: Tectonic setting and generation of Rocky Mountain porphyry molybdenum deposits (Bookstrom, Arthur A.) oil and gas fields: Eastern Green River basin; a developing giant gas supply from deep, overpressured Upper Cretaceous sandstones (McPeek, L. A.) -- West central Rocky Mountain region (Petromotion) uranium ores: Proterozoic origins of uranium mineralization in the Colorado Front Range (Nelson, Carl E.) Rocky Mountains--engineering geology slope stability: Debris flows in small mountain stream channels of Colorado and their hydrologic implications (Costa, John E.) Rocky Mountains--environmental geology pollution: Computer simulation of movement of DIMP-contaminated groundwater near the Rocky Mountain Arsenal, Colorado (Robson, S. G.)

Rocky Mountains--geochemistry isotopes: Neodymium isotopes in the Colorado Front Range and crust-mantle evolution in the Proterozoic (DePaolo, D. J.) Rocky Mountains--geomorphology glacial geology: Allometry and cirque evolution (Olyphant, Greg A.) -- Morphology and the role of landsliding in formation of some rock glaciers in the Mosquito Range, Colorado (Vick, Steven G.) Rocky Mountains--petrology igneous rocks: Kindreds and districts of rare-mineral pegmatites in Colorado (Heinrich, E. William) The Black Cloud Pegmatite, Teller County, Colorado (Simmons, William в.) Rocky Mountains--sedimentary petrology sediments: Possible origins of till-like deposits near the summit of the Front Range in north-central Colorado (Madole, R. F.) Rocky Mountains--soils surveys: Alpine soil distribution and development, Indian Peaks, Colorado Front Range (Burns, Scott Frimoth) Rocky Mountains--stratigraphy Holocene: 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 (Maher, L. J., Jr.) Rocky Mountains--structural geology tectonics: Ages of igneous rocks in the South Park-Breckenridge region, Colorado, and their relation to the tectonic history of the Front-Range uplift (Bryant, Bruce) Laramide crustal

- shortening in the northern Wyoming Province (Kanter, Lisa R.) -- Precambrian
- mineralization and tectonic framework of Fremont County, Colorado (Ririe, George Todd)
- Rocky Mountains--tectonophysics crust: Laramide crustal shortening in the northern

Wyoming Province (Kanter, Lisa R.)

- plate tectonics: Plate tectonics of the ancestral Rocky Mountains (Kluth, Charles F.)
- salt tectonics see also under
   structural geology
- sandstone see also under clastic rocks under sedimentary rocks
- scandium--geochemistry aureoles: Geochemistry of a contact metamorphosed zone; implications for radwaste disposal in crystalline rocks (Brookins, Douglas G.)
- sedimentary petrology
   clay mineralogy: Burial and
   contact metamorphism in
   the Mancos Shale (Nadeau,
   Paul H.)
  - -- Probable burial diagenetic and provenance effects on Dakota Group clay mineralogy, Denver Basin (Rettke, Robert C.)
  - diagenesis: Authigenic kaolinite and associated pyrite in chalk of the Cretaceous Niobrara Formation, eastern Colorado (Pollastro, Richard M.)
  - -- Reservoir properties of Niobrara Formation, Denver basin (Pollastro, R. M.) sedimentary rocks:
  - Comparative petrology of Tertiary sandstones of southern Piceance Creek basin, Colorado (Ochs, Allan M.)
  - -- Metamorphic terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain (McCarley, Ann Boggs)
  - -- Mineralogy, diagenesis, and provenance of Upper Cretaceous sandstones from the Ralston Production Company Federal No. 31 well, Piceance Creek basin, north-western Colorado (Hansley, P. L.)
  - -- Paleoclimatic interpretations of the Permian Cutler Formation in western Colorado from a comparison of size-composition trends of the Cutler Formation and Holocene sands (Gibboney, Melissa J.)
  - -- Petrography of Upper Cambrian Lodore Formation, Northeast Utah and

Northwest Colorado (Herr, Randy G.)

- -- Sedimentology of the Leadville Limestone (Mississippian), northeastern Gunnison County, Colorado (Wittstrom, Martin D., Jr.)
- sedimentary structures: Codell Member of the Carlile Shale at Liberty Point and in the vicinity of Pueblo, Colorado (Stop 1) (Basan, Paul B.)
- -- Cores for interpreting trace fossils and environments of deposition (Chamberlain, C. Kent)
- -- Introduction (Scott, Robert W.)
- -- Ordovician Harding Formation at Indian Springs Ranch (Fischer, William A.)
- -- Road log (Basan, Paul B.)
- -- Something about septaria (Kennedy, Marie)
- -- The trace fossils of the Cretaceous Dakota hogback along Alameda Avenue, west of Denver, Colorado (Stop 4) (Chamberlain, C. Kent)
- -- Trace fossils and depositional environments of the Purgatoire and Dakota formations at Canon City (Stop 3) (Scott, Robert W.)
- -- Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado (Basan, Paul B.)
- sedimentation: Characteristics of deltaic deposits in the Cretaceous Pierre Shale, Trinidad Sandstone, and Vermejo Formation, Raton Basin, Colorado (Flores, Romeo M )
- -- Depositional model for the lower Fountain Formaticn in the Manitou Embayment, Colorado (Fishbaugh, David A.)
- (Fishbaugh, David A.) -- Gilbert; bedding rhythms and geochronology (Fischer, A. G.)
- -- Metamorphic terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain (McCarley, Ann Boggs)
- -- Sedimentology of conglomerates of debris

flow and water flow origin in the Permo-Pennsylvanian Cutler and Fountain formations of Colorado (Shultz, Albert W.)

- -- Transgressions and regressions of Cretaceous epeiric sea in Colorado, North Dakota, South Dakota, and Wyoming (Merewether, E. A.)
- sediments: Possible origins of till-like deposits near the summit of the Front Range in north-central Colorado (Madole, R. F.)
- -- 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.)
- sedimentary
- petrology--concepts history: Gilbert; bedding rhythms and geochronology (Fischer, A. G.)
- sedimentary rocks see also sedimentary structures; sedimentation; sediments
- sedimentary rocks--carbonate
   rocks
   chalk: Authigenic kaolinite
  - and associated pyrite in chalk of the Cretaceous Niobrara Formation, eastern Colorado (Pollastro, Richard M.)
  - dolostone: Geology of dolomite-hosted uranium deposits at the Pitch Mine, Saguache County, Colorado (Nash, J. Thomas)
  - lithofacies: Sedimentology
    of the Leadville Limestone
    (Mississippian),
    northeastern Gunnison
    County, Colorado
    (Wittstrom, Martin D.,
    Jr.)
- sedimentary rocks--clastic rocks
  - arkose: Natural gamma ray spectral logging aids; Granite Wash Reservoir evaluation (Schenewerk, Philip Andrew)
  - conglomerate: Sedimentology of conglomerates of debris flow and water flow origin in the Permo-Pennsylvanian Cutler and Fountain formations of Colorado (Shultz, Albert W.)
  - lithostratigraphy: Lower Cretaceous rocks, southwestern Colorado and

southeastern Utah (Craig, Lawrence C.) reservoir rocks: Microstructure of laboratory and nuclear explosively deformed gas-bearing sandstones (Dengler, L. A.) sandstone: Comparative petrology of Tertiary sandstones of southern Piceance Creek basin, Colorado (Ochs, Allan M.) -- Metamorphic terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain (McCarley, Ann Boggs) Mineralogy and diagenesis of core samples of Upper Cretaceous sandstones, Twin Arrow Inc. 4-14x C and K well, Piceance Creek basin. northwestern Colorado (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 (Hansley, P. L.) - -Paleoclimatic interpretations of the Permian Cutler Formation in western Colorado from a comparison of size-composition trends of the Cutler Formation and Holocene sands (Gibbonev. Melissa J.) -- Stratigraphy and

- petroleum geology of the J Sandstone in portions of Boulder, Larimer, and Weld counties, Colorado (Suryanto, Untung)
- shale: Chemical and mineralogical composition and behavior of the Mancos Shale as a diffuse source of salts in the upper Colorado River basin (Evangelou, Vasilios Petros)
- sedimentary rocks--diagenesis
   clay mineralogy: Probable
   burial diagenetic and
   provenance effects on
   Dakota Group clay
   mineralogy, Denver Basin
   (Rettke, Robert C.)
  sedimentary
- rocks--environmental analysis
  - coastal environment: Upper Cretaceous coastal

deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale (McLane, Michael)

- fluvial environment: Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau (Tyler, Noel)
- -- The bedrock geology of the Ridgway area, Ouray County, Colorado (Weimer, Paul)
- lacustrine environment: Geology of the nahcolite deposits and associated oil shales of the Green River Formation in the Piceance Creek basin, Colorado (Dyni, John Richard)
- -- Stratigraphic evidence for a deep Eocene Lake Uinta, Piceance Creek basin, Colorado (Johnson, Ronald C.)
- sedimentary
  - rocks--geochemistry iridium: Iridium abunance measurements across the Cretaceous-Tertiary boundary in the San Juan and Raton basins of northern New Mexico (Orth, C. J.)
  - isotopes: Sulfur-isotope
    variations in
    marginal-lacustrine rocks
    of the Green River
    Formation, Colorado and
    Utah (Cole, Rex D.)
- sedimentary rocks--lithofacies
  regression: Characteristics
  of deltaic deposits in the
  Cretaceous Pierre Shale,
  Trinidad Sandstone, and
  Vermejo Formation, Raton
  Basin, Colorado (Flores,
  Romeo M.)
- sedimentary
  - rocks--lithostratigraphy Cretaceous: Stratigraphy of the Cedar Mountain and Dakota formations (Cretaceous), Garfield County, Colorado (Haworth, Randol A.)
  - -- 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 (Noon, Patrick L.)
  - *Jurassic*: Stratigraphic sections of some Jurassic rocks from near Moab,

- Utah, to Slick Rick, Colorado (O'Sullivan, R. B.) Miocene: Measured sections of the Browns Park Formation (Miocene) in Moffat County, Colorado (Luft, S. J.) sedimentary rocks--organic residues coal: Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado (Hildebrand, R. т.) -- Palynology of the coal and depositional environments in the Upper Cretaceous, northwestern Colorado, United States (Martinez-Hernandez. Enrique) oil shale: Lacustrine turbidites in the Green River Formation. northwestern Colorado (Dyni, John R.) sedimentary rocks--petrography heavy minerals: Petrography of Upper Cambrian Lodore Formation, Northeast Utah and Northwest Colorado (Herr, Randy G.) sedimentary rocks--properties reservoir properties: Reservoir properties of Niobrara Formation, Denver basin (Pollastro, R. M.) sedimentary structures see also sedimentary rocks; sediments sedimentary structures--biogenic structures lebensspuren: Codell Member of the Carlile Shale at Liberty Point and in the vicinity of Pueblo, Colorado (Stop 1) (Basan, Paul B.) -- Cores for interpreting trace fossils and environments of deposition (Chamberlain, C. Kent) Introduction (Scott. Robert W.) -- Ordovician Harding Formation at Indian Springs Ranch (Fischer, William A.) -- Road log (Basan, Paul B.) The trace fossils of the - -Cretaceous Dakota hogback along Alameda Avenue, west of Denver, Colorado (Stop
  - 4) (Chamberlain, C. Kent)

- -- Trace fossils and depositional environments of the Purgatoire and Dakota formations at Canon City (Stop 3) (Scott, Robert W.)
- -- Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado (Basan, Paul B.)
- -- Upper Cretaceous coastal deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale (McLane, Michael) sedimentary
- structures--genesis turbidity currents: Lacustrine turbidites in the Green River Formation, northwestern Colorado (Dyni, John R.)
- (Dyni, John R.) sedimentary structures--planar bedding structures channels: Stratigraphy of the South Platte Formation (Lower Cretaceous), Eldorado Springs to Golden, Colorado, and channel sandstone distribution of the J Member (Lindstrom, Linda Jane) sedimentary
- structures--secondary structures concretions: Something
- about septaria (Kennedy, Marie) sedimentation--controls
- tectonic controls: Subtle stratigraphic traps in Paleozoic rocks of Paradox Basin (Baars, D. L.)
- sedimentation--cyclic
  processes
  controls: Stratigraphic
  correlations, facies
  concepts and cyclicity in
  Pennsylvanian rocks of the
  Paradox Basin (Hite, R.
  J.)
  deltaic sedimentation:
  Stratigraphy and petroleum
  - geology of the J Sandstone in portions of Boulder, Larimer, and Weld counties, Colorado (Suryanto, Untung) nearshore sedimentation:
  - nearshore sedimentation: Upper Cretaceous coastal deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale (McLane, Michael)
  - sedimentation rates: Gilbert; bedding rhythms and geochronology
- (Fischer, A. G.) transgression: Transgressions and regressions of Cretaceous epeiric sea in Colorado, North Dakota, South Dakota, and Wyoming (Merewether, E. A.) sedimentation--deposition models: Depositional model for the lower Fountain Formation in the Manitou Embayment, Colorado (Fishbaugh, David A.) reservoirs: Conjunctive use of deterministic and stochastic models for predicting sediment storage in large reservoirs; 3, Application of the two models in conjunction (Soares, E. F.) sedimentation--environment deltaic environment: Characteristics of deltaic deposits in the Cretaceous Pierre Shale, Trinidad Sandstone, and Vermejo Formation, Raton Basin, Colorado (Flores, Romeo M.) -- Cores for interpreting trace fossils and environments of deposition (Chamberlain, C. Kent) -- Promising Morrow sandstone discoveries in southeastern Colorado (Avis, Loren E.) - -Trace fossils and depositional environments of the Purgatoire and Dakota formations at Canon City (Stop 3) (Scott. Robert W.) deposition: Depositional environments of the Early Cretaceous seaway, northwestern United States (Vuke, Susan) estuarine environment: Ordovician Harding Formation at Indian Springs Ranch (Fischer, William A.) interpretation: Palynology of the coal and depositional environments in the Upper Cretaceous. northwestern Colorado, United States (Martinez-Hernandez, Enrique) lacustrine environment: Stratigraphic evidence for a deep Eocene Lake Uinta, Piceance Creek basin, Colorado (Johnson, Ronald C.)

trace elements: A

geochemical baseline

-- Sulfur-isotope variations in marginal-lacustrine rocks of the Green River Formation, Colorado and Utah (Cole, Rex D.) nearshore environment: Codell Member of the Carlile Shale at Liberty Point and in the vicinity of Pueblo, Colorado (Stop 1) (Basan, Paul B.) Introduction (Scott, Robert W.) - -The trace fossils of the Cretaceous Dakota hogback along Alameda Avenue, west of Denver, Colorado (Stop 4) (Chamberlain, C. Kent) Trace fossils of nearshore depositional environments of Cretaceous and Ordovician rocks, Front Range, Colorado (Basan, Paul B.) sedimentation-processes deltaic sedimentation: Stratigraphy of the South Platte Formation (Lower Cretaceous), Eldorado Springs to Golden, Colorado, and channel sandstone distribution of the J Member (Lindstrom, Linda Jane) detrital sedimentation: Sedimentology of conglomerates of debris flow and water flow origin in the Permo-Pennsylvanian Cutler and Fountain formations of Colorado (Shultz, Albert W.) fluvial sedimentation: Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau (Tyler, Noe1) lacustrine sedimentation: Geology of the nahcolite deposits and associated oil shales of the Green River Formation in the Piceance Creek basin, Colorado (Dyni, John Richard) Lacustrine turbidites in the Green River Formation, northwestern Colorado (Dyni, John R.) marine sedimentation:

Sedimentology of the Leadville Limestone (Mississippian), northeastern Gunnison County, Colorado (Wittstrom, Martin D., Jr.)

# sedimentation--provenance

paleocurrents: Probable burial diagenetic and provenance effects on Dakota Group clay mineralogy, Denver Basin (Rettke, Robert C.) sandstone: Metamorphic

terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain (McCarley, Ann Boggs)

sedimentation--sedimentation rates

erosion: Rockwall erosion in the northern Sangre de Cristo Mountains, Colorado; contributing factors, sequence, and rate (Grout, Marilyn Ann)

- sedimentation--transport
  stream transport: 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 (Crowley,
  Kervin David)
  - -- 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.)
  - wind transport: Sedimentology of Great Sand Dunes, Colorado (Andrews, Sarah)
- sediments see also sedimentary
   rocks; sedimentary
   structures; sedimentation
- sediments-clastic sediments diamicton: Possible origins of till-like deposits near the summit of the Front Range in north-central Colorado (Madole, R. F.)
- grain size: Rockwall erosion in the northern Sangre de Cristo Mountains, Colorado; contributing factors, sequence, and rate (Grout, Marilyn Ann)
- sediments--geochemistry
  hydrocarbons: Petroleum in
  continental facies (Swain,
  Frederick M.)
  metals: Analysis of
  - metallic cations in the Lake Powell ecosystem and tributaries (Kidd, D. E.)

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.) sediments--textures grain size: 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.) seismic surveys see under geophysical surveys seismology see also engineering geology seismology earthquakes: A reservoir analysis of the Denver earthquakes; a case of induced seismicity (Hsieh, Paul A.) -- A reservoir analysis of the Denver earthquakes; a case of induced seismicity (Hsieh, Paul Anthony) -- Low level historical and contemporary seismicity in the Paradox Basin, Utah and its tectonic implications (Wong, Ivan G.) -- The Colorado earthquake of November 7. 1882; size, epicentral location, intensities, and possible causative fault (McGuire,

Robin K.) -- The Denver earthquakes of 1967-1968 (Herrmann, Robert B.)

seismic sources: Seismic moment, stress drop, strain energy, dislocation radius, and location of seismic acoustical emissions associated with a high alpine snowpack at Berthoud Pass, Colorado (Rose, Charles Cleland)

seismology--earthquakes induced earthquakes: A reservoir analysis of the Denver earthquakes; a case of induced seismicity (Hsieh, Paul Anthony) mechanism: A reservoir analysis of the Denver earthquakes; a case of induced seismicity (Hsieh, Paul A.)

-- The Denver earthquakes of 1967-1968 (Herrmann, Robert B.) precursors: Preliminary analysis of meteorological and seasonal influences on crustal gas emission relevant to earthquake prediction (Klusman, Ronald W.) seismic intensity: The Colorado earthquake of November 7, 1882; size, epicentral location, intensities, and possible causative fault (McGuire, Robin K.) seismicity: Low level historical and contemporary seismicity in the Paradox Basin, Utah and its tectonic implications (Wong, Ivan G.) seismology--explosions
 S-waves: Postshot in situ material property tests at the Mixed Company site, Coloradc (Palmerton, J. B.) seismology--seismic sources P-waves: Seismic moment, stress drop, strain energy, dislocation radius, and location of seismic acoustical emissions associated with a high alpine snowpack at Berthoud Pass, Colorado (Rose, Charles Cleland) shale see under clastic rocks under sedimentary rocks shear zones see under effects under faults slope stability see also engineering geology; geomorphology; see also under engineering geology under Rocky Mountains sodium carbonate see also under economic geology soil mechanics see also rock mechanics soil mechanics--materials, properties clay: Origins of clays controlling permeability in tight gas sands (Wilson, Michael D.) expansive materials: Field test sections on expansive soil (Johnson, L. D.) -- Home landscaping and maintenance on swelling soil (Jochim, Candace L.) -- Public awareness of homes built on shrink-swell soils (Holtz, Wesley G.)

-- Strain controlled testing of expansive soils (Porter, Andrew A.) soils fertilizers: Residual available phosphorus in near-neutral and alkaline soils; I, Solubility and capacity relationships (Fixen, P. E.) -- Residual available phosphorus in near-neutral and alkaline soils; II. Persistence and quantitative estimation (Fixen, P. E.) genesis: Dissolution and transport of gypsum in soils; II, Experimental (Glas, T. K.) geochemistry: Boron analysis in soil extracts. and plant tissue by plasma emission spectroscopy (Gestring, W. D.) -- Phosphate adsorbed and desorbed from three regional soils (Yekini, В.) -- Thermodynamic stability and solubility of molybdenum minerals in soils (Vlek, P. L. G.) -- Use of inductively-coupled plasma spectrometry for the simultaneous determination of macro- and micronutrients in NH/4 HCO/3 -DTPA extracts of soils (Soltanpour, P. N.) maps: Soil survey of El Paso County area, Colorado (Larsen, Lynn S.) -- Soil survey of Kiowa County, Colorado (Anderson, David L.) -- Soil survey of Paonia area, Colorado; parts of Delta, Gunnison, and Montrose counties (Hunter, William R.) -- Soil survey of Piedra area, Colorado; parts of Archuleta, Hinsdale, La Plata, Mineral, and Rio Grande counties (Bauer, Ronald F.) -- Soil survey of Yuma County, Colorado (Larsen, Roy J.) morphology: Characterization of a Paleosol; its biological properties and effect on overlying soil horizons (Gould, W. D.) nutrients: Evaluation of NH/4\_HCO/3\_-DTPA soil test for iron and zinc (Havlin, J. L.)

- Paleosols: Paleoclimate reconstructed from Paleosols; evidence from the Rocky Mountains and East Africa (Mahaney, W. C.)
- salinity: Salt effects on the hydraulic properties of a swelling soil (Dane, J. H.)
- soil erosion: Soil loss
  variation within a
  Colorado alpine area
  (Bovis, M. J.)
  surveys: Alpine soil
- surveys: Alpine soil distribution and development, Indian Peaks, Colorado Front Range (Burns, Scott Frimoth)
- -- An analysis of the hillslope-floodplain boundary (Rudd, Lawrence P.)
- -- Soil as an environmental factor in aging (Beeson, Kenneth C.)
- -- Soils of the Western United States (exclusive of Hawaii and Alaska) (Western States Land-Grant Universities and Colleges)
- soils--composition mineral composition: Micaceous vermiculite, glauconite, and mixed-layered kaolinite-montmorillonite examination by ultramicrotomy and high resolution electron
- microscopy (Lee, S. Y.)
  soils--surveys
- 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.)
  - -- Alpine soil distribution and development, Indian Peaks, Colorado Front Range (Burns, Scott Frimoth)
  - -- An analysis of the hillslope-floodplain boundary (Rudd, Lawrence P.)
  - -- Boron analysis in soil extracts and plant tissue by plasma emission spectroscopy (Gestring, W. D.)
  - -- Characterization of a Paleosol; its biological

properties and effect on overlying soil horizons (Gould, W. D.)

- -- Dissolution and transport of gypsum in soils: II, Experimental (Glas, T. K.)
- Evaluation of NH/4\_HCD/3\_-DTPA soil test for iron and zinc (Havlin, J. L.)
- Paleoclimate
   reconstructed from
   Paleosols; evidence from
   the Rocky Mountains and
   East Africa (Mahaney, W.
   C.)
- -- Phosphate adsorbed and desorbed from three regional soils (Yekini, B.)
- -- Quaternary deposits of the Paradox Basin (Biggar, Norma E.)
- -- Residual available phosphorus in near-neutral and alkaline soils; I, Solubility and capacity relationships (Fixen, P. E.)
- -- Residual available phosphorus in near-neutral and alkaline soils; II, Persistence and quantitative estimation (Fixen, P. E.)
- -- Salt effects on the hydraulic properties of a swelling soil (Dane, J. H.)
- -- Soil as an environmental factor in aging (Beeson, Kenneth C.)
- -- Soil loss variation within a Colorado alpine area (Bovis, M. J.)
- -- Soil property relationships on selected landscape segments under cultivated vs. rangeland conditions (Muhaimeed, Ahmad Saleh)
- -- Soil survey of El Paso County area, Colorado (Larsen, Lynn S.)
- -- Soil survey of Kiowa County, Colorado (Anderson, David L.)
- -- Soil survey of Paonia area, Colorado; parts of Delta, Gunnison, and Montrose counties (Hunter, William R.)
- -- Soil survey of Piedra area, Colorado; parts of Archuleta, Hinsdale, La Plata, Mineral, and Rio Grande counties (Bauer, Ronald F.)

- -- Soil survey of Yuma County, Colorado (Larsen, Roy J.)
- -- Soils of the Western United States (exclusive of Hawaii and Alaska) (Western States Land-Grant Universities and Colleges)
- -- Thermodynamic stability and solubility of molybdenum minerals in soils (Vlek, P. L. G.)
- -- Use of inductively-coupled plasma spectrometry for the simultaneous determination of macro- and micronutrients in NH/4\_HCD/3\_-DTPA extracts of soils (Soltanpour, P. N.)
- Great Plains: Economics of declining water supplies in the Ogallala Aquifer (Warren, John)
- Rocky Mountains: Paleoclimate reconstructed from Paleosols; evidence from the Rocky Mountains and East Africa (Mahaney,
- W. C.)
  soils--water regimes
  irrigation: Design and
  merit of a river-aquifer
  model for optimal use of
  agricultural water
  (Morel-Seytoux, H. J.)
  solution features see under
- geomorphology
- spectrometry see spectroscopy
  spectroscopy see also chemical
  analysis
- spectroscopy--methods
- plasma emission spectroscopy: Boron analysis in soil extracts and plant tissue by plasma emission spectroscopy (Gestring, W. D.)
- springs see also ground water; hydrogeology
- stratigraphy
  - archaeology: Prehistoric man and climate; the view from timberline (Benedict, James B.)
  - -- Report on obsidian artifacts from the Rio Grande National Forest, Colorado (Burns, G. R.)
  - -- 10,000 years of climatic change reconstructed from fossil pollen, La Plata Mountains, southwestern Colorado (Petersen, Kenneth Lee)
  - Cretaceous: Bedrock geology of the Ridgeway area, northwestern flank, San Juan Mountains, Colorado

(Weimer, Paul)

- -- Cretaceous and Tertiary history and resources of the Piceance Creek basin, western Colorado (Johnson, Ronald C.)
- -- Depositional environments of the Dakota Sandstone in southeastern Colorado (Taylor, Andrew M.)
- -- Depositional environments of the Early Cretaceous seaway, northwestern United States (Vuke, Susan)
- -- Determining subsurface stratigraphic position by fluid-entry analysis during air drilling (Mathias, J. Paul)
- -- 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 (Fassett, James E.)
- -- Investigation of the Carlile-Niobrara unconformity (Upper Cretaceous) in northeastern New Mexico and southeastern Colorado (Laferriere, Alan Price)
- -- Lower Cretaceous rocks, southwestern Colorado and southeastern Utah (Craig, Lawrence C.)
- -- Palynology of the coal and depositional environments in the Upper Cretaceous, northwestern Colorado, United States (Martinez-Hernandez, Enrique)
- -- Part I (Boyles, J. Michael)
- -- Part II (Kiteley, Louise W.)
- -- Stratigraphy and petroleum geology of the J Sandstone in portions of Boulder, Larimer, and Weld counties, Colorado (Suryanto, Untung)
- -- Stratigraphy of the Cedar Mountain and Dakota formations (Cretaceous), Garfield County, Colorado (Haworth, Randol A.)
- -- Stratigraphy of the South Platte Formation (Lower Cretaceous), Eldorado Springs to Golden, Colorado, and channel sandstone distribution of the J

Member (Lindstrom, Linda Jane)

- -- 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 (Noon, Patrick L.)
- -- The bedrock geology of the Ridgway area, Duray County, Colorado (Weimer, Paul)
- -- Upper Cretaceous (Campanian) coal resources of Western Colorado (Murray, D. Keith)
- -- Upper Cretaceous coastal deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale (McLane, Michael)
- Devonian: Conodont biostratigraphy and depositional complexes of Upper Devonian cratonic-platform and continental-shelf rocks in the Western United States (Sandberg, Charles A.)
- -- Lower and Middle Devonian continental-shelf rocks of the western United States (Johnson, John G.)
- Eocene: Stratigraphic evidence for a deep Eocene Lake Uinta, Piceance Creek basin, Colorado (Johnson, Ronald 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.)
- Holocene: Pollen evidence suggests that climatic changes in the Colorado Rockies during the last 5000 years were cut of phase with those in the northeastern United States (Maher, L. J., Jr.)
- -- 10,000 years of climatic change reconstructed from fossil pollen, La Plata Mountains, southwestern Colorado (Petersen, Kenneth Lee)
- Jurassic: Stratigraphic sections of some Jurassic rocks from near Moab, Utah, to Slick Rick, Colorado (O'Sullivan, R. B.)

maps: 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.) Mesozoic: Mesozoic stratigraphy of the Paradox Basin; an overview (Molenaar, C. M.) -- Tectonics, sedimentation. and petroleum potential, northern Denver Basin, Colorado, Wyoming, and Nebraska (Sonnenberg, Stephen A.) Miocene: Measured sections of the Browns Park Formation (Miocene) in Moffat County, Colorado (Luft, S. J.) Paleozoic: Summary of Paleozoic stratigraphy and history of western Colorado and eastern Utah (Campbell, John A.) -- Tectonics, sedimentation, and petroleum potential, northern Denver Basin, Colorado, Wyoming, and Nebraska (Sonnenberg, Stephen A.) Pennsylvanian: Stratigraphic correlations, facies concepts and cyclicity in Pennsylvanian rocks of the Paradox Basin (Hite, R. J.) Permian: Paleoclimatic interpretations of the Permian Cutler Formation in western Colorado from a comparison of size-composition trends of the Cutler Formation and Holocene sands (Gibboney, Melissa J.) Phanerozoic: Stratigraphic correlation chart for western Colorado and northwestern New Mexico

- (MacLachlan, M. E.) *Pleistocene*: Pleistocene surficial deposits of the Grand Mesa area, Colorado (Cole, Rex D.)
- Precambrian: Precambrian geology along parts of the Gunnison Uplift of southwestern Colorado (Hedlund, D. C.)
- -- Precambrian rocks, northern Sangre de Cristo Range, Colorado (Reed, J. C., Jr.)

- -- Stratigraphy and mineralogy of a zinc-rich sillimanite gneiss near Maysville, Chaffee County, Colorado (Knight, David Cooper)
- -- Stratigraphy, petrology, and structure of Precambrian metavolcanic rocks in the Iris District, Gunnison and Saguache counties, Colorado (Afifi, Abdulkader M.)
- Proterozoic: Preliminary paleomagnetic poles and correlation of the Proterozoic Uinta Mountain Group, Utah and Colorado (Bressler, Stephen L.)
- Quaternary: Lower timberline in central Colorado during the past 15,000 yr (Markgraf, Vera)
- -- Paleoclimate reconstructed from Paleosols; evidence from the Rocky Mountains and East Africa (Mahaney, W. C.)
- -- Prehistoric man and climate; the view from timberline (Benedict, James B.)
- Quaternary deposits of the Paradox Basin (Biggar, Norma E.)
- -- Rockwall erosion in the northern Sangre de Cristo Mountains, Colorado; contributing factors, sequence, and rate (Grout, Marilyn Ann)
- Tertiary: Comparative petrology of Tertiary sandstones of southern Piceance Creek basin, Colorado (Dchs, Allan M.)
- Cretaceous and Tertiary history and resources of the Piceance Creek basin, western Colorado (Johnson, Ronald C.)
- -- 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 (Fassett, James E.)
- -- Generalized fence diagram showing stratigraphy and potentiometric surface of the Tertiary formations in southeastern Wyoming and an adjacent part of Colorado (Cooley, M. E.)

1

Triassic: Nature and origin of hematite in the Moenkopi Formation (Triassic), Colorado Plateau; a contribution to the origin of magnetism in red beds (Walker, Theodore R.) -- Paleomagnetism of the Moenkopi Formation, Colorado Plateau; basis for long-term model of acquisition of chemical remanent magnetism in red beds (Larson, E. E.) strontium--isotopes Sr-87: Geochemistry of a contact metamorphosed zone; implications for radwaste disposal in crystalline rocks (Brookins, Douglas G.) Sr-87/Sr-86: Minor-element and Sr-isotope geochemistry of Tertiary stocks, Colorado mineral belt (Simmons, E. C.) -- Rb/Sr isotopic ratios in selected lower crust-upper mantle nodules from Colorado-Wyoming kimberlites (Smith, C. B.) structural analysis--foliation preferred orientation: The structural geology of the lower North Inlet area, Rocky Mountain National Park, Colorado; an evaluation of the Precambrian F/4 deformation (Gephart, John Weslev) structural analysis--fractures orientation: Stress orientations from borehole wall fractures with examples from Colorado, East Texas, and northern Canada (Gough, D. I.) structural analysis--interpretation interference patterns: Polyphase deformation and contact relationships of the Precambrian Uncompangre Formation, Needle Mountains, southwestern Colorado (Tewksbury, Barbara Jarvis) petrofabrics: Correlation between deformation lamellae, microfractures. macrofractures, and in situ stress measurements. White River Uplift, Colorado (Dula, William

structural geology deformation: Correlation between deformation lamellae, microfractures, macrofractures, and in situ stress measurements, White River Uplift, Colorado (Dula, William

- F., Jr.) -- Stress analysis of a deeply eroded analog of the San Andreas Fault, California (Kohlstedt, D. L.)
- -- Stress analysis of deeply eroded analogs of the San Andreas Fault (a renewal) (Kohlstedt, D. L.)
- -- Stress orientations from borehole wall fractures with examples from Colorado, East Texas, and northern Canada (Gough, D. I.)
- faults: Stress analysis of a deeply eroded analog of the San Andreas Fault, California (Kohlstedt, D. L.)
- neotectonics: Low level historical and contemporary seismicity in the Paradox Basin, Utah and its tectonic implications (Wong, Ivan G.) salt tectonics:
- Characteristics of surface faults in the Paradox Basin (Kitcho, Catherine A.)
- structural analysis: Polyphase deformation and contact relationships of the Precambrian Uncompangre Formation, Needle Mountains, southwestern Colorado
- (Tewksbury, Barbara Jarvis)
- of the lower North Inlet area, Rocky Mountain National Park, Colorado; an evaluation of the Precambrian F/4\_ deformation (Gephart, John Wesley)
- tectonics: Collapse structures in the Paradox Basin (Sugiura, Ray) -- Plate tectonics of the ancestral Rocky Mountains
- (Kluth, Charles F.)
   -- Recurrent movement on basement faults, a tectonic style for Colorado and Wyoming (Weimer, Robert J.)

-- Tectonic evolution of lower Proterozoic rocks, Uinta Mountains, Utah and Colorado (Sears, J. W.) -- Tectonic evolution of the Paradox Basin, Utah and Colorado (Baars, Don L.) - -Tectonic evolution of western Colorado and eastern Utah (Baars, D. L.) structural petrology see structural analysis sulfates see under minerals sulfides see under minerals sulfur--geochemistry carbonate rocks: Geology of dolomite-hosted uranium deposits at the Pitch Mine, Saguache County, Colorado (Nash, J. Thomas) sulfur--isotopes S-34/S-32: Sulfur-isotope variations in marginal-lacustrine rocks of the Green River Formation, Colorado and Utah (Cole, Rex D.) sulphur see sulfur survey organizations--current research U. S. Geological Survey: U.S. Geological Survey projects in western coal geology (Mapel, W. J.) Water-resources investigations of the U. S. Geological Survey in Colorado; fiscal year 1981 (Price, W. E., Jr.) symposia--areal geology Western Slope, Colorado; western Colorado and eastern Utah (Epis, Rudy C.) technetium--isotopes Tc-97: Solar neutrino production of technetium-97 and technetium-98 (Cowan, G. Α.) techniques see under engineering geology tectonics see also faults; orogeny; structural analysis; structural geology; see also under structural geology under Colorado Plateau; Rocky Mountains tectonophysics crust: Stress orientations from borehole wall fractures with examples from Colorado, East Texas, and northern Canada (Gough, D. I.)

heat flow: A summary of the geology of the San Luis

F., Jr.)

Basin, Colorado-New Mexico, with emphasis on the geothermal potential for the Monte Vista Graben (Burroughs, Richard L.) plate tectonics: Tectonic setting and generation of Rocky Mountain porphyry molybdenum deposits (Bookstrom, Arthur A.) Volcanism and the tectonic development of the Rio Grande Rift and environs, New Mexico-Colorado, from analysis of petrochemical data (Gornitz, Vivien M.) tektites see also meteorites telluric surveys see Earth-current surveys under geophysical surveys terraces see under fluvial features under geomorphology Tertiary see also under stratigraphy thermal analysis see also chemical analysis; spectroscopy thermal waters see also under hydrogeology thorium--abundance volcanic rocks: Oligocene volcanic rocks; possible source of uranium in epigenetic deposits in parts of Chaffee, Park, and Fremont counties, Colorado (Dickinson, K. A.) thorium ores see also under economic geology time scales see under geochronology trace elements see under geochemistry; see under geochemical methods under mineral exploration; see under geochemistry under lava; sediments; see under sulfides under minerals tracks and trails see ichnofossils Triassic see also under stratigraphy; see also under stratigraphy under Colorado Plateau tungsten ores see also under economic geology tunnels see also under engineering geology turbidity currents see under genesis under sedimentary structures underground installations see also under engineering geology underground water see ground water United States see also

Connecticut; Nebraska; New

York uranium--abundance volcanic rocks: Oligocene volcanic rocks; possible source of uranium in epigenetic deposits in parts of Chaffee, Park, and Fremont counties, Colorado (Dickinson, K. A.) uranium--geochemistry glasses: Uranium mobility during glass diagenesis (Zielinski, R. A.) uranium ores see also under economic geology; see also under economic geology under automatic data processing; Colorado Plateau; Nebraska; Rocky Mountains uranium ores--exploration stream sediments: 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 (Howarth, R. J.) valleys see under fluvial features under geomorphology; see under landform evolution under geomorphology vanadium ores see also under economic geology; see also under economic geology under Colorado Plateau Vertebrata see also ichnofossils; Mammalia; Pisces; Reptilia volcanic rocks see under igneous rocks volcanism see under volcanology volcanology--volcanism causes: Volcanism and the tectonic development of the Rio Grande Rift and environs, New Mexico-Colorado, from analysis of petrochemical data (Gornitz, Vivien M.) evolution: Volcano-tectonic setting of Tertiary ore deposits, southern Rocky Mountains (Lipman, Peter W.) pyroclastic flows: 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 (Ellwood, Brooks в.) rift zones: Late Cenozoic volcanism of the northern New Mexico-southern Colorado portion of the Rio Grande Rift (Dungan, Michael A.) waste disposal see also under engineering geology water see also ground water; hydrogeology; hydrology water quality see under water under pollution water resources see also under economic geology; see also under economic geology under automatic data processing; Great Plains; Nebraska waterways see also under engineering geology; see also under engineering geology under automatic data processing waterways--irrigation management: Design and merit of a river-aquifer model for optimal use of agricultural water (Morel-Seytoux, H. J.) weathering see also under geochemistry weathering--rates erosion: Rockwall erosion in the northern Sangre de Cristo Mountains. Colorado; contributing factors, sequence, and rate (Grout, Marilyn Ann) weathering--sedimentary rocks land use: Weathering effects on some chemical and physical properties of retorted oil shale (Richardson, Steven G.) well-logging--electrical logging resistivity: Nonlinear complex resistivity logging (Olhoeft, Gary R.) well-logging--interpretation oil shale: Results of core drilling in 1978 for oil shale in the Eocene Green River Formation, Piceance Creek area of western Colorado (Smith, M. C.) stress: Stress orientations from borehole wall

from Colorado, East Texas, and northern Canada (Gough, D. I.) well-logging--radioactivity gamma-gamma methods: Density determinations from borehole gravity data from a shallow lignite zone within the Denver Formation near Watkins.

fractures with examples

```
Colorado (Robbins, Stephen
   L.)
 gamma-ray methods: Natural
    gamma ray spectral logging
    aids; Granite Wash
    Reservoir evaluation
    (Schenewerk, Philip
    Andrew)
  mineral exploration: A
    geologic report on the
    Sand Wash Drilling
    Project, Moffat and Routt
counties, Colorado
(Carter, Thomas E.)
Western Interior--paleontology
  Mammalia: Multituberculates
    from the Wasatchian
    land-mammal age, early
    Eccene, of western North
    America (Krause, David)
X-ray analysis see also
  chemical analysis;
  spectroscopy
xenoliths see under inclusions
zinc--analysis
  chemical analysis:
    Evaluation of
    NH/4_HCO/3_-DTPA soil test
    for iron and zinc (Havlin,
    J. L.)
zinc ores see also under
economic geology
```

# BIBLIOGRAPHY AND INDEX OF COLORADO GEOLOGY

#### COUNTY INDEX

use and land cover, 1975-76,

Adams County Bryant, Bruce. Geologic map of the Denver 1 degrees by 2 degrees quadrangle, North-central Colorado; Sheet 1, Geology; Sheet 2, Structure Campbell, Donald L. Installation restoration at Rocky Mountain Arsenal; Part II, Expanded north boundary containment operations Colton, R. B. Preliminary map of landslide deposits, Denver 1 degrees by 2 degrees Quadrangle, Colorado Gibbs, J. W. Hydrologic data for urban storm runoff from nine sites in the Denver metropolitan area, Colorado Hall, D. C. Characterization of urban runoff from Grange Hall Creek at Northglenn, Adams County, Colorado Herrmann, Robert B. The Denver earthquakes of 1967-1968 Hsieh, Paul A. A reservoir analysis of the Denver

earthquakes; a case of induced seismicity Kolmer, Joseph R. Installation restoration of Rocky

Mountain Arsenal; Part I, Pilot containment operations Robson, S. G. Computer

simulation of movement of DIMP-contaminated groundwater near the Rocky Mountain Arsenal, Colorado

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 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

U. S. Geological Survey. Land

Denver, Colorado Union Carbide Corporation, Oak Ridge Gaseous Diffusion Plant. Hydrogeochemical and stream sediment reconnaissance basic data for Limon Quadrangle. Colorado Weimer, R. J. Wattenberg Field. paleostructure-stratigraphic trap, Denver Basin, Colorado Alamosa County Andrews, Sarah. Sedimentology of Great Sand Dunes, Colorado Olyphant, Greg A. Allometry and cirque evolution Arapahoe County 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. Cores for interpreting trace fossils and environments of deposition Colton, R. B. Preliminary map of landslide deposits, Denver 1 degrees by 2 degrees Quadrangle, Colorado Gibbs, J. W. Hydrologic data for urban storm runoff from nine sites in the Denver metropolitan area, Colorado Herrmann, Robert B. The Denver earthquakes of 1967-1968 Hsieh, Paul A. A reservoir

analysis of the Denver earthquakes; a case of induced seismicity McCaslin, John C. Denver Basin activity continues fast pace Robson, S. G. Geologic structure, hydrology, and water quality of the Arapahoe Aquifer in the

Arapanoe Aquiter in the Denver Basin, Colorado Robson, S. G. 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 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
- U. S. Geological Survey. Land use and land cover, 1975-76, Denver, Colorado
- Union Carbide Corporation, Oak Ridge Gaseous Diffusion Plant. Hydrogeochemical and stream sediment reconnaissance basic data for Limon Quadrangle, Colorado

#### Archuleta 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
- Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study

McCaslin, John C. Drilling in Colorado continues fast pace

McCaslin, John C. San Juan Basin gas area yields oil find

# Baca County

McCaslin, John C. New wildcatting developing in southeastern, eastern Colorado

# Bent County

Avis, Loren E. Promising Morrow sandstone discoveries in southeastern Colorado Little, J. R. Characterization of floodflows along the Arkansas River without regulation by Pueblo Reservoir, Portland to John Martin Reservoir, southeastern Colorado

- McCaslin, John C. New wildcatting developing in southeastern, eastern Colorado
- Soares, E. F. Conjunctive use of deterministic and stochastic models for predicting sediment storage in large reservoirs; 3, Application of the two models in conjunction
- Taylor, Andrew M. Depositional environments of the Dakota Sandstone in southeastern Colorado

Boulder County

- Gallagher, James Robert. A study of Laramide igneous intrusions, east of Ward, Boulder County, Colorado House, Cadwell Burl. Tungsten
- mining in Boulder County, Colorado, during World War I
- Asieh, 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
- Madole, R. F. Possible origins of till-like deposits near the summit of the Front Range in north-central Colorado
- 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

Chaffee County 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
- Dickinson, K. A. Dligocene volcanic rocks; possible source of uranium in epigenetic deposits in parts of Chaffee, Park, and Fremont counties, Colorado
- Goodknight, Craig S. Montrose Quadrangle, Colorado Knight, David Cooper.
- Knight, David Cooper. Stratigraphy and mineralogy of a zinc-rich sillimanite gneiss near Maysville, Chaffee County Colorado
- Chaffee 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
- Truebe, Henry A. Shavano Peak
- Tweto, Ogden. Preliminary geologic map of the Montrose 1 degrees by 2 degrees quadrangle, southwestern Colorado

Cheyenne County 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. Mississippian play advancing in Colorado area
- McCaslin, John C. New wildcatting developing in southeastern, eastern Colorado
- Rountree, Russ. Drilling to increase in NE Colorado Smagala, Tom. The Cretaceous Niobrara play

Clear Creek County 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
- Cowan, G. A. Solar neutrino production of technetium-97 and technetium-98
- Ekiert, Franciszek. Zloza molibdenu Climax i Henderson w St. Zjednoczonych
- 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
- Shannon, J. R. Unidirectional solidification textures and their significance in determining relative ages of intrusions at the Henderson Mine, Colorado

Conejos County Chua, Siong-Huat. Optimal estimators of mean areal precipitation in regions of orographic influence

Costilla County Dlyphant, Greg A. Allometry and cirque evolution

Crowley County

- Little, J. R. Characterization of floodflows along the Arkansas River without regulation by Pueblo Reservoir, Portland to John Martin Reservoir, southeastern Colorado
- Custer County Boler, F. M. Principal facts for gravity stations in the Pueblo 1 degrees by 2 degrees quadrangle, South-central Colorado
- Delta County Bolivar, Stephen L. Multisource data set integration and characterization of uranium mineralization for the Montrose Quadrangle, Colorado
- Gaskill, D. L. West Elk volcanic field, Gunnison and Delta counties, Colorado Goodknight, Craig S. Montrose

Quadrangle, Colorado

- 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
- Hildebrand, R. T. Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado
- Hunter, William R. Soil survey of Paonia area, Colorado; parts of Delta, Gunnison, and Montrose counties
- 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
- Tweto, Ogden. Preliminary geologic map of the Montrose 1 degrees by 2 degrees quadrangle, southwestern Colorado

Denver County Bryant, Bruce. Geologic map of the Denver 1 degrees by 2 degrees quadrargle, North-central Colorado; Sheet 1, Geology; Sheet 2, Structure

- Gibbs, J. W. Hydrologic data for urban storm runoff from nine sites in the Denver metropolitan area, Colorado Herrmann, Robert B. The Denver
- earthquakes of 1967-1968 Hsieh, Paul A. A reservoir
- analysis of the Denver earthquakes; a case of induced seismicity
- Robson, S. G. Geologic structure, hydrology, and water quality of the Denver Aquifer in the Denver Basin, Colorado
- U. S. Geological Survey. Land use and land cover, 1975-76, Denver, Colorado

Dolores County 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
- Rountree, Russ. Bug field discovery spurs new interest in Paradox Basin
- Douglas County 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 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
- 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
- Spence, William. Review of the Denver Water Department induced seismicity program at Strontia Springs, Colorado
- Eagle County Costa, John E. Debris flows in small mountain stream . channels of Colorado and their hydrologic implications
- El Paso County Boler, F. M. Principal facts for gravity stations in the Pueblo 1 degrees by 2 degrees quadrangle, South-central Colorado
- 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
- Robson, S. G. Geologic structure, hydrology, and water quality of the Laramie-Fox Hills Aquifer in. the Denver Basin, Colorado
- Shultz, Albert W. Sedimentology of conglomerates of debris flow and water flow origin in the Permo-Pennsylvanian Cutler and Fountain formations of Colorado
- Tinsley, John C., III. Jet from Colorado

Elbert County 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
- 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
- Robson, S. G. 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 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
- Bell, M. W. Drilling-mud emanometry; a new technique for uranium exploration
- 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
- Dickinson, K. A. Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado
- Dickinson, K. A. Dligocene volcanic rocks; possible source of uranium in epigenetic deposits in parts of Chaffee, Park, and Fremont counties, Colorado
- Dickinson, Kendell A. Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado
- Fischer, William A. Drdovician Harding Formation at Indian Springs Ranch
- Heinrich, E. William. Kindreds and districts of rare-mineral pegmatites in Colorado '
- 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
- Pearl, Richard M. The dinosaur menagerie
- Ririe, George Todd. Precambrian mineralization and tectonic framework of Fremont County, Colorado
- Scott, Robert W. Introduction
  Scott, Robert W. Trace fossils
  and depositional
  environments of the
- Purgatoire and Dakota formations at Canon City (Stop 3)

- Shultz, Albert W. Sedimentology of conglomerates of debris flow and water flow origin in the Permo-Pennsylvanian Cutler and Fountain formations of
  - Colorado Garfield County
- 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. 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
- Nuccio, V. F. Map showing drill stem test and perforation recoveries of the Upper Cretaceous

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
- Tweto, Ogden. Geologic map of the Craig 1 degrees by 2 degrees quadrangle, northwestern Colorado
- Whitney, J. W. Surficial geologic map of the Grand Junction 1 degrees by 2 degrees quadrangle, Colorado and Utah

Gilpin County

- 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

Goshen County U. S. Geological Survey. Land use and land cover and associated maps for Cheyenne, Wyoming, Nebraska, Colorado

Grand County Baars, Don L. Third day; road log from Moab, Utah to Durango, Colorado via Dead Horse Point, Utah

- Bryant, Bruce. Geologic map of the Denver 1 degrees by 2 degrees quadrangle, North-central Colorado; Sheet 1, Geology; Sheet 2,
- Structure 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
- Kolenbrander, Lawrence Gene. A method of evaluating landform classification systems for renewable resource assessment and planning

Krivanek, Connie M. New fields and exploration drilling, Paradox Basin, Utah and 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
- Madole, R. F. Possible origins of till-like deposits near the summit of the Front Range in north-central Colorado
- Molenaar, C. M. Second day; road log from Telluride, Colorado to Moab, Utah, via Paradox Valley and Lisbon Valley
- O'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
- O'Sullivan, R. B. Stratigraphic sections of some Jurassic rocks from near Moab, Utah, to Slick Rick, Colorado
- Petromotion. North Park Basin; Jackson and Grand counties, Colorado
- 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
- 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
- Whitney, J. W. Surficial

geologic map of the Grand Junction 1 degrees by 2 degrees quadrangle, Colorado and Utah

Gunnison County Afifi, Abdulkader M. Stratigraphy, petrology, and structure of Precambrian metavolcanic rocks in the Iris District, Gunnison and Saguache counties, Colorado Armbrustmacher, Theodore J. The complex of alkaline rocks at Iron Hill, Powderhorn District, Gunnison County, Colorado Bolivar, Stephen L. Multisource data set integration and characterization of uranium

- Characterization of uranium mineralization for the Montrose Quadrangle, Colorado Costa, John E. Debris flows in
- small mountain stream channels of Colorado and their hydrologic implications
- Gaskill, D. L. West Elk volcanic field, Gunnison and Delta counties, Colorado
- Goodknight, Craig S. Montrose Quadrangle, Colorado Goodknight, Craig S. Uranium
- in the Gunnison Country, Colorado
- Heinrich, E. William. Kindreds and districts of rare-mineral pegmatites in Colorado
- Hunter, William R. Soil survey of Paonia area, Colorado; parts of Delta, Gunnison, and Montrose counties
- 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
- Markgraf, Vera. Lower timberline in central Colorado during the past 15,000 yr
- Radbruch-Hall, D. H. Gravitational spreading of steep-sided ridges ("sackung") in western United States
- Robinson, Charles H. Quaternary glacial and slope-failure deposits of the Crested Butte area, Gunnison County, Colorado Schultz, Paul R. Colorado

lapis lazuli from the Blue Wrinkle Mine in Gunnison County

- Stewart, Daniel Russell. Comparison of rock mass classification systems; Mt. Axtell Tunnel, Gunnison County, Colorado
- Thomas, John A. Exploration and geology of the Mt. Emmons molybdenite deposits, Gunnison County, Colorado
- Tweto, Ogden. Preliminary geologic map of the Montrose 1 degrees by 2 degrees quadrangle, southwestern Colorado
- Williams, Roy E. Statistical identification of hydraulic connections between the surface of a mountain and internal mineralized sources
- Wittstrom, Martin D., Jr. Sedimentology of the Leadville Limestone (Mississippian), northeastern Gunnison County, Colorado

#### Hinsdale County

- Armstrong, B. R. A quantitative analysis of avalanche hazard on U. S. Highway 550, southwestern Colorado
- Bauer, Ronald F. Soil survey of Piedra area, Colorado; parts of Archuleta, Hinsdale, La Plata, Mineral, and Rio Grande counties
- Bolivar, Stephen L. Multisource data set integration and characterization of uranium mineralization for the Montrose Quadrangle, Colorado
- Caskey, Deborah Jane. Geology and hydrothermal alteration of the Jron Beds area, Hinsdale County, Colorado
- Chua, Siong-Huat. Optimal estimators of mean areal precipitation in regions of orographic influence
- Dighem. Analog records from an airborne electromagnetic survey (using the Dighem II system) of parts of the Lake City Caldera, Hinsdale County, Colorado
- Goodknight, Craig S. Montrose Quadrangle, Colorado
- 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

- 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
- Tweto, Ogden. Preliminary geologic map of the Montrose 1 degrees by 2 degrees quadrangle, southwestern 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

Huerfano County Gingerich, Philip D. Variation, sexual dimorphism, and social structure in the early Eocene horse Hyracotherium (Mammalia, Perissodactyla)

- McCarley, Ann Boggs. Metamorphic terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain
- McCaslin, John C. Possible gas find could heat up activity in Raton Basin
- McLane, Michael. Upper Cretaceous coastal deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale Dlyphant, Greg A. Allometry
- and cirque evolution

Jackson County Kuhn, Gerhard. Statistical summaries of water-quality data for two coal areas of Jackson County, Colorado McCaslin, John C. 'Sky-high

- basin' getting another look O'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 Petromotion. North Park Basin;
- Petromotion. North Park Basin; Jackson and Grand counties, Colorado

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

- 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<sup>\*</sup> 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
- 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
- Weir, G. W. Incomplete manuscript on stratigraphy and structural geology and uranium-vanadium and copper deposits of the Lisbon Valley area, Utah-Colorado

San Miguel County Armstrong, B. R. A quantitative analysis of avalanche hazard on U. S. Highway 550, southwestern Colorado

- Armstrong, B. R. Map of snow avalanche areas and known accident sites in the Telluride region, San Miguel County, Colorado
- Campbell, John A. Uranium mineralization and depositional facies in the Permian rocks of the northern Paradox Basin, Utah and Colorado
- Costa, John E. Debris flows in small mountain stream

channels of Colorado and their hydrologic implications

Krivanek, Connie M. New fields and exploration drilling, Paradox Basin, Utah and Colorado

- Molenaar, C. M. Second day; road log from Telluride, Colorado to Moab, Utah, via Paradox Valley and Lisbon Valley
- 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 Tyler, Noel. Jurassic

- depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau
- Ullrich, Dick. First day; road log from Durango, Colorado, to Telluride, Colorado, via Silverton and Duray, Colorado
- Weir, G. W. Incomplete manuscript on stratigraphy and structural geology and uranium-vanadium and copper deposits of the Lisbon Valley area, Utah-Colorado

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

- 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

#### Summit County

- Bryant, Bruce. Ages of igneous rocks in the South Park-Breckenridge region, Colorado, and their relation to the tectonic history of the Front-Range uplift
- U. S. Bureau of Reclamation, Water and Power Resources Service, Lower Missouri Region. Colorado-Big Thompson-Windy Gap projects,

### Colorado

Teller County

- Boler, F. M. Principal facts for gravity stations in the Pueblo 1 degrees by 2 degrees quadrangle, South-central Colorado Ludington, Steve. The Redskin Granite; evidence for thermogravitational diffusion in a Precambrian granite batholith Reif, Logan E. \$10 million in gold
- Simmons, William B. The Black Cloud Pegmatite, Teller County, Colorado
- Thomas, Lowell. My days at Cripple Creek

#### Washington County

- Borman, R. G. Water-level records for the northern High Plains of Colorado, 1977-81
- Glas, T. K. Dissolution and transport of gypsum in soils; II, Experimental
- Hanley, Edward J. Niobrara Development Program, Washington County, Colorado
- Muhaimeed, Ahmad Saleh. Soil property relationships on selected landscape segments under cultivated vs. rangeland conditions
- 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
- Union Carbide Corporation, Oak Ridge Gaseous Diffusion Plant. Hydrogeochemical and stream sediment reconnaissance basic data for Limon Quadrangle, Colorado

#### Weld County

- Borman, R. G. Effects of a cattle feedlot on ground-water quality in the South Platte River valley near Greeley, Colorado
- Chamberlain, C. Kent. Cores for interpreting trace fossils and environments of deposition
- Lazaro, Rogelio Cruz. Adaptive real-time streamflow forecasting model for hydrosystem operational

planning

- McCaslin, John C. Denver Basin activity continues fast pace McCaslin, John C. Drilling in
- Colorado continues fast pace
- Morel-Seytoux, H. J. Design and merit of a river-aquifer model for optimal use of agricultural water
- Reitsema, R. H. Source and migration of light hydrocarbons indicated by carbon isotopic ratios
- Rice, D. D. Occurrence and origin of natural gas in ground water, southern Weld County, Colorado
- Rountree, Russ. Deeper zones may have big oil reserves
- Scott, G. R. Paleovalley and geologic map of northeastern Colorado
- 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

#### Yuma County

- Borman, R. G. Water-level records for the northern High Plains of Colorado, 1977-81
- Crafton, James W. A practical model for evaluating a well producing from a tight gas formation
- Graham, Russell W. Preliminary report on late Pleistocene vertebrates from the Selby and Dutton archeological/paleontological sites, Yuma County, Colorado
- Larsen, Roy J. Soil survey of Yuma County, Colorado
- McCaslin, John C. Colorado's Niobrara still holds interest
- McCaslin, John C. New wildcatting developing in southeastern, eastern Colorado
- Pollastro, Richard M. Authigenic kaolinite and associated pyrite in chalk of the Cretaceous Niobrara Formation, eastern Colorado
- Rountree, Russ. Drilling to increase in NE Colorado

Scott, G. R. Paleovalley and geologic map of northeastern Colorado Smagala, Tom. The Cretaceous Niobrara play Union Carbide Corporation, Dak Ridge Gaseous Diffusion Plant. Hydrogeochemical and stream sediment reconnaissance basic data for Limon Quadrangle, Colorado

#### ROCK-UNIT INDEX

Alamosa Formation 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 Johnson, V. C. Trinidad Quadrangle, Colorado

Almond Formation McPeek, L. A. Eastern Green River basin; a developing giant gas supply from deep, overpressured Upper Cretaceous sandstones

Aneth Formation Gustafson, V. D. Petroleum geology of the Devonian and Mississippian rocks of the Four Corners region

Animas Formation Kirkham, Robert M. Geotechnical aspects of the search for a permanent repository for the Durango uranium tailings pile

Arapahoe Formation Robson, S. G. Geologic structure, hydrology, and water quality of the Arapahoe Aquifer in the Denver Basin, Colorado Robson, S. G. Ground-water resources of the Denver basin

Arikaree Group Cooley, M. E. Generalized fence diagram showing stratigraphy and potentiometric surface of the Tertiary formations in southeastern Wyoming and an adjacent part of Colorado

Scott, G. R. Paleovalley and geologic map of northeastern Colorado Battle Spring Formation Bell, M. W. Drilling-mud emanometry; a new technique for uranium exploration Morris, Armand V. Rock Springs Quadrangle, Wyoming and Colorado

Bearpaw Shale Porter, Andrew A. Strain controlled testing of expansive soils

Black Canyon Schist Hedlund, D. C. Precambrian geology along parts of the Gunnison Uplift of southwestern Colorado

Black Cloud Pegmatite Simmons, William B. The Black Cloud Pegmatite, Teller County, Colorado

Blanco Basin Formation MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Blue Mesa Tuff Gaskill, D. L. West Elk Volcanic field, Gunnison and Delta counties, Colorado

Browns Park Formation Bell, M. W. Drilling-mud emanometry; a new technique for uranium exploration Carter, Thomas E. A geologic report on the Sand Wash Drilling Project, Moffat and Routt counties, Colorado

Luft, S. J. Measured sections of the Browns Park Formation (Miocene) in Moffat County, Colorado

Morris, Armand V. Rock Springs Quadrangle, Wyoming and Colorado

Reheis, M. C. Geologic map and coal resources of the Easton Gulch Ouzdrangle, Moffat County, 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

Brushy Basin Member Galton, Peter M. Small bones of the hypsilophodontid dinosaur Dryosaurus altus from the Upper Jurassic of Colorado

Haworth, Randol A. Stratigraphy of the Cedar Mountain and Dakota formations (Cretaceous), Garfield County, Colorado

Thamm, John K. Geology and recognition criteria for sandstone uranium deposits of the salt wash type, Colorado Plateau Province; final report

Burro Canyon Formation Craig, L. C. Uranium potential of the Burro Canyon Formation in western Colorado

Craig, Lawrence C. Lower Cretaceous rocks, southwestern Colorado and southeastern Utah

MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Carlile Shale Basan, Paul B. Codell Member of the Carlile Shale at Liberty Point and in the vicinity of Pueblo, Colorado (Stop 1) Laferriere, Alan Price. Investigation of the Carlile-Niobrara unconformity (Upper Cretaceous) in northeastern New Mexico and southeastern Colorado

McLane, Michael. Upper Cretaceous coastal deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale

Scott, Robert W. Introduction Sonnenberg, Stephen A. The Lanyard Field, a structural-stratigraphic trap, Denver Basin, Colorado Weimer, R. J. Wattenberg Field, paleostructure-stratigraphic trap, Denver Basin, Colorado

Weimer, Robert J. Recurrent movement on basement faults, a tectonic style for Colorado and Wyoming

Carpenter Ridge Tuff Gaskill, D. L. West Elk volcanic field, Gunnison and Delta counties, Colorado

Carrizo Sand McCarley, Ann Boggs Metamorphic terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain

Castlegate Sandstone Swolfs, H. S. Field mechanical properties of a jointed sandstone

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

Cedar Creek Member Korth, William W. Metadjidaumo (Eomyidae, Rodentia) from Colorado and Wyoming

Cedar Mountain Formation Craig, Lawrence C. Lower Cretaceous rocks, southwestern Colorado and southeastern Utah

Haworth, Randol A. Stratigraphy of the Cedar Mountain and Dakota formations (Cretaceous). Garfield County, Colorado MacLachlan, M. E.

Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Chinle Formation MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico Molenaar, C. M. Mesozoic stratigraphy of the Paradox Basin; an overview Weir, G. W. Incomplete manuscript on stratigraphy and structural geology and uranium-vanadium and copper deposits of the Lisbon Valley area. Utah-Colorado

Chuska Sandstone MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Claiborne Group McCarley, Ann Boggs. Metamorphic terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain

Cliff House Sandstone Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study

Coalmont Formation Wilson, Mark V. H. Eocene freshwater fishes from the <sup>2</sup> Coalmont Formation, Colorado

Codell Sandstone Member Basan, Paul B. Codell Member of the Carlile Shale at Liberty Point and in the vicinity of Pueblo, Colorado (Stop 1)

McLane, Michael. Upper Cretaceous coastal deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale

Cow Springs Sandstone MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Cuchara Formation McCarley, Ann Boggs. Metamorphic terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain

Cutler Formation Campbell, John A. Uranium mineralization and depositional facies in the Permian rocks of the northern Paradox Basin, Utah and Colorado

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

Larson, E. E. Selective destructive demagnetization: another microanalytic technique in rock magnetism MacLachlan, M. E.

Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Molenaar, C. M. Second day: road log from Telluride, Colorado to Moab, Utah, via Paradox Valley and Lisbon Valley

Scott, G. L. Seismic surveying, salt anticline region, Paradox Basin

Shultz, Albert W. Sedimentology of conglomerates of debris flow and water flow origin in the Permo-Pennsylvanian Cutler and Fountain formations of Colorado

Weir, G. W. Incomplete manuscript on stratigraphy and structural geology and uranium-vanadium and copper deposits of the Lisbon Valley area, Utah-Colorado

Wiegand, Del L. Geology of the Paradox Basin

D Sandstone Sonnenberg, Stephen A. The Lanyard Field, a structural-stratigraphic trap, Denver Basin, Colorado

Dakota Formation Agnew, Allen F. G. K. Gilbert and ground water, or "I have drawn this map with much reluctance"

Basan, Paul B. Road log Chamberlain, C. Kent. The trace fossils of the Cretaceous Dakota hogback along Alameda Avenue, west of Denver, Colorado (Stop 4)

Craig, Lawrence C. Lower Cretaceous rocks, southwestern Colorado and southeastern Utah

Haworth, Randol A. Stratigraphy of the Cedar Mountain and Dakota formations (Cretaceous), Garfield County, Colorado

Helgesen, J. D. Regional study of the Dakota Aquifer (Darton's Dakota revisited)

Johnson, Ronald C. Cretaceous and Tertiary history and resources of the Piceance Creek basin, western Colorado

- Laowig, L. R. Coking coals of western Colorado
- Lindstrom, Linda Jane. Stratigraphy of the South Platte Formation (Lower Cretaceous), Eldorado Springs to Golden, Colorado, and channel sandstone distribution of the J Member
- MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico McCaslin, John C. Possible gas
- find could heat up activity in Raton Basin
- McCaslin, John C. 'Sky-high basin' getting another look Molenaar, C. M. Mesozoic stratigraphy of the Paradox
- Basin; an overview 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
- Rettke, Robert C. Probable burial diagenetic and provenance effects on Dakota -Group clay mineralogy. Denver Basin

Scott, Robert W. Introduction Scott, Robert W. Trace fossils

- and depositional environments of the Purgatoire and Dakota formations at Canon City (Stop 3)
- Suryanto, Untung. Stratigraphy and petroleum geology of the J Sandstone in portions of Boulder, Larimer, and Weld counties, Colorado
- Taylor, Andrew M. Depositional environments of the Dakota Sandstone in southeastern Colorado
- Tremain, C. M. Methane in Cretaceous and Paleocene coals of western Colorado
- Weimer, Paul. The bedrock geology of the Ridgway area, Duray County, Colorado

Dawson Aquifer Robson, S. G. Geologic structure, hydrology, and water quality of the Dawson Aquifer in the Denver Basin, Colorado

Robson, S. G. Ground-water resources of the Denver basin

- Denver Formation Robbins, Stephen L. Density determinations from borehole gravity data from a shallow lignite zone within the Denver Formation near Watkins, Colorado
- Robson, S. G. Geologic structure, hydrology, and water quality of the Denver Aquifer in the Denver Basin, Colorado
- Robson, S. G. Ground-water resources of the Denver basin
- Williamson, J. V. Seismic analysis of Spinney Mountain Dam

Desert Creek Dolomite Rountree, Russ. Bug Field discovery spurs new interest in Paradox Basin

Dillon Mesa Tuff Gaskill, D. L. West Elk volcanic field, Gunnison and Delta counties, Colorado

Dubois Greenstone Hedlund, D. C. Precambrian geology along parts of the Gunnison Uplift of southwestern Colorado Sheridan, Douglas M. Precambrian sulfide deposits in the Gunnison region, Colorado

Eagle Sandstone Crafton, James W. A practical model for evaluating a well producing from a tight gas formation

Echo Park Alluvium Dickinson, Kendell A. Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado

Elbert Formation Gustafson, V. D. Petroleum geology of the Devonian and Mississippian rocks of the Four Corners region Krivanek, Connie M. New fields and exploration drilling, Paradox Basin, Utah and Colorado

Entrada Sandstone Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study Goodknight, Craig S. Montrose Ouadrangle, Colorado MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Ericson Formation McPeek, L. A. Eastern Green River basin; a developing giant gas supply from deep, overpressured Upper Cretaceous sandstones Morris, Armand V. Rock Springs Ouadrangle, Wyoming and Colorado

Farisita Formation McCarley, Ann Boggs. Metamorphic terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain

Fish Canyon Tuff Gaskill, D. L. West Elk volcanic field, Gunnison and Delta counties, Colorado

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

Fort Union Formation Boardman, Charles R. Evaluation of low-permeability gas-bearing formations in Rio Blanco County, Colorado

Hail, W. J., Jr. Low-grade uranium in the Fort Union Formation, Crooked Wash area, northwestern Colorado

Fountain Formation Fishbaugh, David A. Depositional model for the lower Fountain Formation in the Manitou Embayment, Colorado Shultz, Albert W. Sedimentology of

conglomerates of debris flow and water flow origin in the Permo-Pennsylvanian Cutler and Fountain formations of Colorado

Fox Hills Formation Rice, D. D. Dccurrence and origin of natural gas in ground water, southern Weld County, Colorado Robson, S. G. Geologic structure, hydrology, and water quality of the Laramie-Fox Hills Aquifer in the Denver Basin, Colorado Robson, S. G. Ground-water resources of the Denver basin

Fruitland Formation 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

Tremain, C. M. Methane in Cretaceous and Paleocene coals of western Colorado

Gallup Sandstone McCaslin, John C. San Juan Basin gas area yields oil find

Garden Gulch Member Dyni, John R. Lacustrine turbidites in the Green River Formation, northwestern Colorado

Glen Canyon Group Molenaar, C. M. Mesozoic stratigraphy of the Paradox Basin; an overview

Glen Eyrie Member Fishbaugh, David A. Depositional model for the lower Fountain Formation in the Manitou Embayment, Colorado

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

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

Graneros Shale Smagala, Tom. The Cretaceous Niobrara play Sonnenberg, Stephen A. The Lanyard Field, a structural-stratigraphic

trap, Denver Basin, Colorado Weimer, R. J. Wattenberg Field.

paleostructure-stratigraphic trap, Denver Basin, Colorado

Green River Formation Bell, M. W. Drilling-mud emanometry; a new technique for uranium exploration Boardman, Charles R. Evaluation of low-permeability gas-bearing formations in Rio Blanco County, Colorado Cole, Rex D. Sulfur-isotope variations in marginal-lacustrine rocks of the Green River Formation. Colorado and Utah Cook, Glenn L. Oil shale; an impending energy source Dean, W. E. Geochemical surveys of oil shale in the Piceance Creek basin. Colorado Dyni, John R. Lacustrine turbidites in the Green River Formation. northwestern Colorado Dyni, John Richard. Geology of the nahcolite deposits and associated oil shales of the Green River Formation in the Piceance Creek basin. Colorado Fenton, Donald M. The chemistry of shale oil and its refined products Giauque, R. D. Characterization of two core holes from the Naval Oil Shale Reserve Number 1 Hail, W. J. Geology and oil-shale resources in the central Roan Plateau, Colorado Hopkins, J. M. Shale oil; a synthetic fuel of the future Hopkins, John M. Union Dil Company's Oil Shale Project 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 MacLachlan, M. E.

MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Mehran, M. Hydrogeologic consequences of the modified in situ retorting process, Piceance Creek Basin, Colorado

Morris, Armand V. Rock Springs Quadrangle, Wyoming and Colorado

Ochs, Allan M. Comparative petrology of Tertiary sandstones of southern Piceance Creek basin, Colorado

- Petty, Patricia Curtis. Dil shale: tomorrow's answer
- Pitman, J. K. Isopach, structure contour, and resource maps of the R-6 oil-shale zone, Green River Formation, Piceance Creek basin, Colorado
- 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.
- Saether, Dla M. Geochemistry of fluorine in oil shale leachates
- Smith, John Ward. Oil shale resources of the United States
- Smith, John Ward, Alumina from oil shale
- 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
- Swain, Frederick M. Petroleum in continental facies

Ziemba, E. A. Rio Blanco Oil Shale Company Tract C-a, Rio Blanco County, Colorado; summary of geology and current development

Greenhorn Limestone

- Fischer, A. G. Gilbert; bedding rhythms and geochronology
- Sonnenberg, Stephen A. The Lanyard Field, a structural-stratigraphic trap, Denver Basin, Colorado
- Weimer, R. J. Wattenberg Field, paleostructure-stratigraphic trap, Denver Basin, Colorado

Harding Sandstone Basan, Paul B. Road log Fischer, William A. Ordovician Harding Formation at Indian Springs Ranch

- Goodknight, Craig S. Montrose Quadrangle, Colorado
- Scott, Robert W. Introduction

Hermosa Group Baars, Don L. Tectonic evolution of the Paradox Basin, Utah and Colorado Hite, R. J. Stratigraphic correlations, facies concepts and cyclicity in Pennsylvanian rocks of the Paradox Basin

Wiegand, Del L. Geology of the Paradox Basin

High Plains Aquifer Weeks, J. B. 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

Hinsdale Formation MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Honaker Trail Formation Scott, G. L. Seismic surveying, salt anticline region, Paradox Basin

Horsetail Creek Member Galbreath, Edwin C. An apternodontic (Insectivora) from the Chadronian Dligocene of northeastern Colorado

Huerfano Formation Gingerich, Philip D. Variation, sexual dimorphism, and social structure in the early Eocene horse Hyracotherium (Mammalia, Perissodactyla) McCarley, Ann Boggs. Metamorphic terrane favored

over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain

Huntsman Shale Sonnenberg, Stephen A. The Lanyard Field, a structural-stratigraphic trap, Denver Basin, Colorado

Idaho Springs Formation Brookins, Douglas G. New K-Ar ages from the Eldora-Bryan Stock and Idaho Springs Formation, Front Range, Colorado

Brookins, Douglas G. Geochemistry of a contact metamorphosed zone; implications for radwaste disposal in crystalline rocks

#### Iron Beds Caskey, Deborah Jane. Geology and hydrothermal alteration of the Iron Beds area, Hinsdale County, Colorado

J Sandstone Lindstrom, Linda Jane. Stratigraphy of the South Platte Formation (Lower Cretaceous), Elocrado Springs to Golden, Colorado, and channel sandstone distribution of the J Member Suryanto, Untung. Stratigraphy and petroleum geology of the J Sandstone in portions of Boulder, Larimer, and Weld counties, Colorado

Juana Lopez Member McLane, Michael. Upper Cretaceous coastal deposits in South-central Colorado; Codell and Juana Lopez members of Carlile Shale

Junction Creek Sandstone Tyler, Noel. Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau

Kayenta Formation Palmerton, J. B. Postshot in situ material property tests at the Mixed Company site, Colorado

Laramie Formation Rice, D. D. Occurrence and origin of natural gas in ground water, southern Weld County, Colorado

Robson, S. G. Geologic structure, hydrology, and water quality of the Laramie-Fox Hills Aquifer in the Denver Basin, Colorado Robson, S. G. Ground-water resources of the Denver basin

Laramie-Fox Hills Aquifer Rice, D. D. Dccurrence and origin of natural gas in ground water, southern Weld County, Colorado

Leadville Formation Krivanek, Connie M. New fields and exploration drilling, Paradox Basin, Utah and Colorado

Molenaar, C. M. Second day; road log from Telluride, Colorado to Moab, Utah, via Paradox Valley and Lisbon Valley Pisarowicz, James A. Empirical confirmation of Curl's (1974) flow velocity calculations

Scott, G. L. Seismic surveying, salt anticline region, Paradox Basin

Wittstrom, Martin D., Jr. Sedimentology of the Leadville Limestone (Mississippian), northezstern Gunnison County, Colorado

Lewis Shale Kirkham, Robert M. Geotechnical aspects of the search for a permanent repository for the Durango uranium tailings pile

McPeek, L. A. Eastern Green River basin; a developing giant gas supply from deep, overpressured Upper Cretaceous sandstones

Porter, Andrew A. Strain controlled testing of expansive soils

Lodore Formation Herr, Randy G. Petrography of Upper Cambrian Lodore Formation, Northeast Utah and Northwest Colorado

Los Pinos Formation 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

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

Mahogany Bed 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

Mancos Shale Boyles, J. Michael. Depositional systems, Upper Cretaceous Mancos Shale and Mesaverde Group, northwestern Colorado

- Boyles, J. Michael. Part 1 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
- Gaskill, D. L. West Elk volcanic field, Gunnison and Delta counties, Colorado
- Kiteley, Louise W. Mileage log Kiteley, Louise W. Part II
- Laronne, J. B. The effect of erosion on solute pickup from Mancos Shale hillslopes, Colorado, U.S.A.
- Mathias, J. Paul. Determining subsurface stratigraphic position by fluid-entry analysis during air drilling
- McCaslin, John C. San Juan Basin gas area yields oil find
- Molenaar, C. M. Mesozoic stratigraphy of the Paradox Basin; an overview
- Porter, Andrew A. Strain controlled testing of expansive soils Radbruch-Hall, D. H.
- Gravitational spreading of steep-sided ridges ("sackung") in western United States Weimer, Paul, The bedrock
- geology of the Ridgway area, Duray County, Colorado

Medina Formation Crafton, James W. A practical model for evaluating a well producing from a tight gas formation

Menefee Formation 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

Mesaverde Group Boardman, Charles R. Evaluation of low-permeability gas-bearing formations in Rio Blanco County, Colorado

- Boyles, J. Michael. Depositional systems, Upper Cretaceous Mancos Shale and Mesaverde Group, northwestern Colorado
- Boyles, J. Michael. Part I Dengler, L. A. Microstructure
- of laboratory and nuclear explosively deformed gas-bearing sandstones

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

- Hildebrand, R. T. Geology and chemical analyses of coal, Mesaverde Group (Cretaceous), lower White River coal field, Moffat and Rio Blanco counties, Colorado
- Kiteley, Louise W. Mileage log
- Kiteley, Louise W. Part II Ladwig, L. R. Coking coals of
- western Colorado Lin, Wunan. Mechanical behavior of Mesaverde shale and sandstone at high pressure
- McPeek, L. A. Eastern Green River basin; a developing giant gas supply from deep, overpressured Upper Cretaceous sandstones
- Molenaar, C. M. Mesozoic stratigraphy of the Paradox Basin; an overview
- 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 Tremain, C. M. Methane in
- Tremain, C. M. Methane in Cretaceous and Paleocene coals of western Colorado

Midway Group Johnson, L. D. Field test sections on expansive soil

- Moenkopi Formation Larson, E. E. Selective destructive demagnetization; another microanalytic technique in rock magnetism
- Larson, E. E. Paleomagnetism of the Moenkopi Formation, Colorado Plateau; basis for long-term model of acquisition of chemical remanent magnetism in red beds
- Molenaar, C. M. Mesozoic stratigraphy of the Paradox Basin; an overview
- 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 Wiegand, Del L. Geology of the

Paradox Basin

Morrison Formation

- Chenoweth, William L. The uranium-vanadium deposits of the Uravan mineral belt and adjacent areas, Colorado and Utah
- Craig, Lawrence C. Lower Cretaceous rocks, southwestern Colorado and , southeastern Utah
- Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study
- Galton, Peter M. Small bones of the hypsilophodontid dinosaur Dryosaurus altus from the Upper Jurassic of Colorado
- Haworth, Randol A. Stratigraphy of the Cedar Mountain and Dakota formations (Cretaceous), Garfield County, Colorado
- MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico
- McCaslin, John C. Possible gas find could heat up activity in Raton Basin
- McCaslin, John C. 'Sky-high basin' getting another look Molenaar, C. M. Mesozoic
- stratigraphy of the Paradox Basin; an overview
- Porter, Andrew A. Strain controlled testing of expansive soils
- 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
- Taylor, Andrew M. Depositional environments of the Dakota Sandstone in southeastern Colorado
- Thamm, John K. Geology and recognition criteria for sandstone uranium deposits of the salt wash type, Colorado Plateau Province; final report
- Tyler, Noel. Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau
- Weir, G. W. Incomplete manuscript on stratigraphy and structural geology and

10

uranium-vanadium and copper deposits of the Lisbon Valley area, Utah-Colorado

Morrow Formation Avis, Loren E. Promising Morrow sandstone discoveries in southeastern Colorado McCaslin, John C. New wildcatting developing in southeastern, eastern Colorado

McCaslin, John C. Mississippian play advancing in Colorado area

Mowry Shale Vuke, Susan. Depositional environments of the Early Cretaceous seaway, northwestern United States Weimer, R. J. Wattenberg Field, paleostructure-stratigraphic trap, Denver Basin, Colorado

Muddy "J" Formation Roberts, C. N. Fracture optimization in a tight gas play: Muddy "J" Formation, Wattenberg Field, Colorado

Muddy Sandstone Vuke, Susan. Depositional environments of the Early Cretaceous seaway, northwestern United States

Niobrara Formation Crafton, James W. A practical model for evaluating a well producing from a tight gas formation

Fischer, A. G. Gilbert; bedding rhythms and geochronology

Hanley, Edward J. Niobrara Development Program, Washington County, Colorado Laferriere, Alan Price.

Investigation of the Carlile-Niobrara unconformity (Upper Cretaceous) in northeastern New Mexico and southeastern Colorado

McCaslin, John C. Colorado's Niobrara still holds interest

McCaslin, John C. Denver Basin activity continues fast pace McCaslin, John C. New wildcatting developing in southeastern, eastern Colorado

McCaslin, John C. 'Sky-high basin' getting another look Pollastro, R. M. Reservoir properties of Niobrara

Formation, Denver basin

Pollastro, Richard M. Authigenic kaolinite and associated pyrite in chalk of the Cretaceous Niobrara Formation, eastern Colorado

Rice, D. D. Indigenous biogenic gas in Niobrara Formation, eastern Denver basin

Rountree, Russ. New Niobrara completions attract interest Smagala, Tom. The Cretaceous

- Niobrara play Sonnenberg, Stephen A. The Lanyard Field, a structural-stratigraphic trap, Denver Basin, Colorado
- Tinsley, John C., III. Jet from Colorado Weimer, R. J. Wattenberg Field.
- paleostructure-stratigraphic trap, Denver Basin, Colorado
- Weimer, Robert J. Recurrent movement on basement faults, a tectonic style for Colorado and Wyoming

North Park Formation Shannon, Spencer S., Jr. Detailed uranium geochemical stream sediment survey data release for selected portions of the Craig NTMS Ouadrangle, Colorado, and Rawlins NTMS Quadrangle, Wyoming, including concentrations of forty-five additional elements

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

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

Cooley, M. E. Generalized fence diagram showing stratigraphy and potentiometric surface of the Tertiary formations in southeastern Wyoming and an adjacent part of Colorado Eisel, Leo M. The national ground water picture

Scott, G. R. Paleovalley and geologic map of northeastern Colorado Warren, John. Economics of declining water supplies in the Ogallala Aquifer

Ohio Creek Formation Goodknight, Craig S. Montrose Quadrangle, Colorado

Ojo Alamo Sandstone Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study

Orth, C. J. Iridium abunance measurements across the Cretaceous-Tertiary boundary in the San Juan and Raton basins of northern New Mexico

Ouray Formation Gustafson, V. D. Petroleum geology of the Devonian and Mississippian rocks of the Four Corners region

Page Sandstone MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Parachute Creek Member Cole, Rex D. Sulfur-isotope variations in marginal-lacustrine rocks of the Green River Formation. Colorado and Utah

Dyni, John R. Lacustrine turbidites in the Green River Formation, northwestern Colorado

- 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.
- Ziemba, E. A. Rio Blanco Dil Shale Company Tract C-a, Rio Blanco County, Colorado; summary of geology and current development

Paradox Formation Baars, Don L. Tectonic evolution of the Paradox Basin, Utah and Colorado

Hite, R. J. Stratigraphic correlations, facies concepts and cyclicity in Pennsylvanian rocks of the Paradox Basin

Krivanek, Connie M. New fields and exploration drilling. -Paradox Basin, Utah and Colorado

Molenaar, C. M. Second day;

road log from Telluride, Colorado to Moab, Utah, via Paradox Valley and Lisbon Valley

Reid, Fred S. Facies recognition and hydrocarbon potential of the Pennsylvanian Paradox Formation

Rountree, Russ, Bug Field discovery spurs new interest in Paradox Basin

Scott, G. L. Seismic surveying, salt anticline region, Paradox Basin Wiegand, Del L. Geology of the

Paradox Basin

Phosphoria Formation Smith, John Ward. Dil shale resources of the United States

Pictured Cliffs Sandstone Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study

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

Johnson, L. D. Field test sections on expansive soil McCaslin, John C. Denver Basin

activity continues fast pace Porter, Andrew A. Strain

controlled testing of expansive soils Rudd, Lawrence P. An analysis

of the hillslope-floodplain boundary Smagala, Tom. The Cretaceous

Niobrara play

Pikes Peak Batholith Koch, George S., Jr. Uranium resource assessment through statistical analysis of exploration geochemical and other data; final report

Point Lookout Sandstone Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study

Purgatoire Formation Basan, Paul B. Road log Scott, Robert W. Introduction Scott, Robert W. Trace fossils and depositional environments of the Purgatoire and Dakota formations at Canon City (Stop 3) Taylor, Andrew M. Depositional environments of the Dakota Sandstone in southeastern Colorado

Red Creek Quartzite Goff, Sue. Uranium hydrogeochemical and stream sediment reconnaissance data released for the Red Creek Ouartzite special study area, Vernal NTMS Ouadrangle, Utah/Colorado, including concentrations of forty-six additional elements

Sears, J. W. Tectonic evolution of lower Proterozoic rocks, Uinta Mountains, Utah and Colorado

Redskin Granite Ludington, Steve. The Redskin Granite: evidence for thermogravitational diffusion in a Precambrian granite batholith

Redwall Limestone Gustafson, V. D. Petroleum geology of the Devonian and Mississippian rocks of the Four Corners region

Reklaw Formation McCarley, Ann Boggs. Metamorphic terrane favored over Rocky Mountains as source of Claiborne Group, Eocene, Texas coastal plain

Rico Formation Campbell, John A. Uranium mineralization and depositional facies in the Permian rocks of the northern Paradox Basin, Utah and Colorado

Rio Blanco Unit Boardman, Charles R. Evaluation of low-permeability gas-bearing formations in Rio Blanco County, Colorado

Salt Wash Member Thamm, John K. Geology and recognition criteria for sandstone uranium deposits of the salt wash type, Colorado Plateau Province; final report

Tyler, Noel. Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau San Andres Formation Frenzel, P. F. Preliminary data report for the San Juan Basin-Crownpoint surveillance study

San Jose Formation MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico

San Juan Formation Caskey, Deborah Jane. Geology and hydrothermal alteration of the Iron Beds area, Hinsdale County, Colorado

San Rafael Group Molenaar, C. M. Mesozoic stratigraphy of the Paradox Basin; an overview D'Sullivan, R. B. Stratigraphic sections of some Jurassic rocks from near Moab, Utah, to Slick Rick, Colorado Tyler, Noel. Jurassic

depositional history and vanadium-uranium deposits, Slick Rock District, -Colorado Plateau

Sangre de Cristo Formation Johnson, V. C. Trinidad Quadrangle, Colorado

Santa Fe Group 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

Sapinero Mesa Tuff Gaskill, D. L. West Elk volcanic field, Gunnison and Delta counties, Colorado

Silver Plume Granite 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

Smoky Hill Chalk Member Pollastro, Richard M. Authigenic kaolinite and associated pyrite in chalk of the Cretaceous Niobrara Formation, eastern Colorado Smagala, Tom. The Cretaceous Niobrara play Tinsley, John C., III. Jet from Colorado South Platte Formation Lindstrom, Linda Jane. Stratigraphy of the South Platte Formation (Lower Cretaceous), Eldorado Springs to Golden, Colorado, and channel sandstone distribution of the J Member

Stillwater Complex Radbruch-Hall, D. H. Gravitational spreading of steep-sided ridges ("sackung") in western United States

Stoney Mountain Rhyolite Billings, Patty. Fission track annealing related to vein mineralization and hydrothermal alteration, Duray County, Colorado

Summerville Formation Tyler, Noel. Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau

Sunshine Peak Tuff Hon, K. A. Stratigraphy and uranium paragenesis, Lake City caldera, Colorado

Tallahassee Creek Conglomerate Dickinson, Kendell A. Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado

Telluride Formation MacLachlan, M. E. Stratigraphic correlation chart for western Colorado and northwestern New Mexico

Thermopolis Shale Vuke, Susan. Depositional environments of the Early Cretaceous seaway, northwestern United States

Thirtynine Mile Andesite Dickinson, Kendell A. Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado

Tidwell Member Tyler, Noel. Jurassic depositional history and vanadium-uranium deposits, Slick Rock District, Colorado Plateau

Troublesome Formation Zielinski, R. A. Uranium mobility during glass diagenesis

Uinta Formation

- Hail, W. J. Geology and oil-shale resources in the central Roan Plateau, Colorado
- Johnson, Ronald C. Stratigraphic evidence for a deep Eocene Lake Uinta, Piceance Creek basin, Colorado

Ziemba, E. A. Rio Blanco Dil Shale Company Tract C-a, Rio Blanco County, Colorado; summary of geology and current development

Uinta Mountain Group Bressler, Stephen L. Preliminary paleomagnetic poles and correlation of the Proterozoic Uinta Mountain Group, Utah and Colorado

Uncompany Formation Tewksbury, Barbara Jarvis. Polyphase deformation and contact relationships of the Precambrian Uncompany Formation, Needle Mountains, southwestern Colorado

Vallejo Formation 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

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

Vieja Group Prothero, Donald R. Dligocene calibration of the magnetic polarity time scale

Wall Mountain Tuff Dickinson, Kendell A. Geologic controls of mineralization in the Tallahassee Creek uranium district, Fremont County, Colorado

Wasatch Formation Bell, M. W. Drilling-mud emanometry; a new technique for uranium exploration Boardman, Charles R. Evaluation of low-permeability gas-bearing formations in Rio Blanco County, Colorado Goodknight, Craig S. Montrose Quadrangle, Colorado Morris, Armand V. Rock Springs Quadrangle, Wyoming and Colorado Ochs, Allan M. Comparative petrology of Tertiary

petrology of Tertiary sandstones of southern Piceance Creek basin, Colorado Washakie Formation

Morris, Armand V. Rock Springs Quadrangle, Wyoming and Colorado

White River Group Cooley, M. E. Generalized fence diagram showing stratigraphy and potentiometric surface of the Tertiary formations in southeastern Wyoming and an adjacent part of Colorado

Galbreath, Edwin C. An apternodontid (Insectivora) from the Chadronian Dligocene of northeastern Colorado

Korth, William W. Metadjidaumo (Eomyidae, Rodentia) from Colorado and Wyoming

Prothero, Donald R. Oligocene calibration of the magnetic polarity time scale

Wilkins Peak Member Morris, Armand V. Rock Springs Ouadrangle, Wyoming and Colorado

Williams Fork Formation Hildebrand, R. T. Geology and chemical analyses of coal and coal-associated rock samples, Williams Fork Formation (Upper Cretaceous), northwestern Colorado

- Reheis, M. C. Geologic map and coal resources of the Easton Gulch Quadrangle, Moffat County, Colorado Wingate Sandstone
- Palmerton, J. B. Postshot in situ material property tests at the Mixed Company site, Colorado
- Wiegand, Del L. Geology of the Paradox Basin

Yazoo Clay Johnson, L. D. Field test sections on expansive soil COLORADO GEOLOGICAL SURVEY PUBLICATIONS OF GENERAL INTEREST

- BULLETIN 32 -- Prairie, Peak and Plateau--A Guide to the Geology of Colorado, John Chronic and Halka Chronic, 1972, 126 p., \$5.00.
- BULLETIN 37 -- <u>Bibliography and Index of Colorado Geology</u>, <u>1875</u> to <u>1975</u>, American Geological Institute, <u>1976</u>, <u>488</u> p. Softbound--\$7.50; Hardbound--\$10.00.
- BULLETIN 45 -- <u>Bibliography and Index of Colorado Geology</u>, 1975-1980, American Geological Institute, 1983, 294 p., \$10.00.
- SPECIAL PUBLICATION 6 -- <u>Guidelines and Criteria for Identification and Land-Use</u> <u>Controls of Geologic Hazard and Mineral Resource Areas</u>, W.P. Rogers and others, 1974, 146 p., \$8.00.
- SPECIAL PUBLICATION 12 -- Nature's Building Codes--Geology and Construction in Colorado, D.C. Shelton and Dick Prouty, 1979, 72 p., \$4.00.
- SPECIAL PUBLICATION 13 -- 1979 Summary of Coal Resources in Colorado, D.K. Murray, 1980, 24 p., \$5.00.
- SPECIAL PUBLICATION 19 -- Colorado Tectonics, Seismicity and Earthquake Hazards, W.R. Junge, ed., 1981, 52 p., \$6.00.
- MAP SERIES 13 -- <u>State Lands Status Map, Lands and Minerals Administered</u> <u>by Agencies of the Colorado Dept. of Natural Resources</u>, S.J. Soukup, 1979, scale 1:500,000, \$8.00.
- MAP SERIES 22 -- <u>Oil and Gas Fields of Colorado</u>, A.H. Scanlon, 1983, scale 1:500,000. Over-the-counter or mailed folded \$10.00; mailed rolled \$10.50.
- MISCELLANEOUS 13 -- Energy Resources Map of Colorado, U.S. Geological Survey and Colorado Geological Survey, 1977, scale 1:500,000, \$3.00.
- MISCELLANEOUS 14 -- Colorado Stratigraphic Correlation Chart, R.H. Pearl, 1978, 1 sheet (11" x 14"), 0.25.
- MISCELLANEOUS 16 -- <u>Geologic Map of Colorado</u>, Ogden Tweto, 1979, scale 1:500,000. Over-the-counter or mailed folded \$6.00; mailed rolled \$6.50.
- MISCELLANEOUS 17 -- <u>Roadside Geology of Colorado</u>, Halka Chronic, 1980, 322 p., \$9.95.

MAKE CHECKS PAYABLE TO: Colorado Geological Survey

MAIL TO: Publications Department Colorado Geological Survey Room 715, 1313 Sherman Street Denver, CO 80203 Telephone (303) 866-2611

To order publications, specify series, name and number, title, quantity desired, publication cost, and mailing charges. Order miscellaneous publications by title. Prepayment is required. MAILING CHARGES ON ALL ORDERS\*

up to \$3.00....\$.75 \$3.01 to \$5.00....\$1.50 \$5.01 to \$10.00....\$2.00 \$10.01 to \$20.00....\$3.00 \$20.01 to \$30.00...\$3.50 \$30.01 to \$40.00...\$4.50 \$40.01 to \$50.00...\$6.50 \$50.01 to \$100.00...\$8.00 over \$100.00...8%

\*No mailing charge for orders of Microfiche only.