

U.S. Department of the Interior
U.S. Geological Survey

New Publications of the U.S. Geological Survey

Lists 1107–1109—Publications issued October–December 2000

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Prices of available publications, except informal reports released to the open files and through the National Technical Information Service (NTIS), are given in current issues of the quarterly catalog "New Publications of the U.S. Geological Survey." Limited quantities of Circulars and publications of general interest are free.

"New Publications of the U.S. Geological Survey" is also available electronically through the USGS at <http://pubs.usgs.gov/publications/>.

The U.S. Geological Survey Publications Data Base includes comprehensive bibliographic information on USGS reports and maps published from 1880 to the present and references for non-USGS publications with USGS authors published from 1983 to date—a total of approximately 110,000 publications. Free public access to the data base is provided as a public service by the U.S. Geological Survey at <http://usgs-georef.cos.com> and through the USGS home page at <http://www.usgs.gov>.

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NEW PUBLICATIONS OF SPECIAL INTEREST

Fact Sheet 0108-00

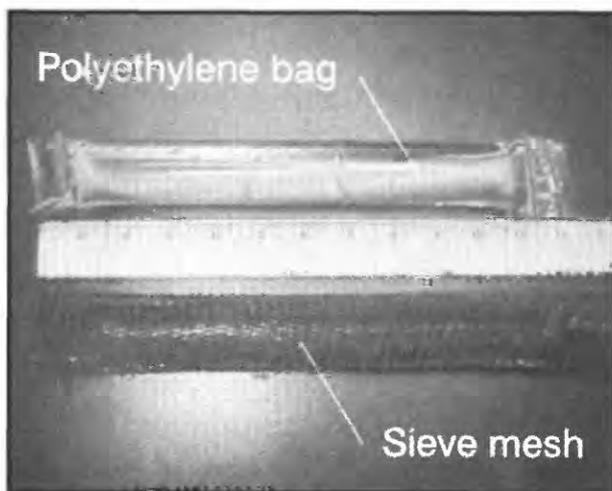
National land cover dataset. 2000. 1 p.

The USGS, in cooperation with the U.S. Environmental Protection Agency, has produced a land cover dataset for the conterminous United States on the basis of 1992 Landsat thematic mapper imagery and supplemental data. The seamless National Land Cover Dataset (NLCD) contains 21 categories of land cover information suitable for a variety of State and regional applications, including landscape analysis, land management, and modeling nutrient and pesticide runoff. The NLCD is distributed by State as 30-meter resolution raster images in an Albers Equal-Area projection.



Fact Sheet 0088-00

Use of passive diffusion samplers for monitoring volatile organic compounds in ground water, by P. T. Harte, M. J. Brayton, and Wayne Ives. Prepared in cooperation with the New Hampshire Department of Environmental Services. 2000. 4 p.



Passive diffusion samplers have been tested at a number of sites where volatile organic compounds (VOC's) are the principal contaminants in ground water. Test results generally show good agreement between concentrations of VOC's in samples collected with diffusion samplers and concentrations in samples collected by purging the water from a well. Diffusion samplers offer several advantages over conventional and low-flow ground-water sampling procedures.

Fact Sheet 0085-00

Atlantic coastal zone, by P. M. Barlow and M. A. Kidd. 2000. 4 p. Also available on the web at <http://water.usgs.gov/ogw/pubs/fs00085/index.html>

In many areas of the Nation, the future sustainability of ground-water resources is at risk from overuse and contamination. Because ground-water systems typically respond slowly to human actions, a long-term perspective is needed to manage this valuable resource. This is one in a series of fact sheets that describe ground-water resource issues across the United States and some of the activities of the USGS that provide information to help others develop, manage, and protect ground-water resources in a sustainable manner.





DIGITAL DATA SERIES

The Digital Data Series encompasses a broad range of digital data, including computer programs, interpreted results of investigations, comprehensive reviewed data bases, spatial data sets, digital images and animation, and multimedia presentations that are not intended for printed release. Scientific reports in this series cover a wide variety of subjects on all facets of U.S. Geological Survey investigations and research that are of lasting scientific interest and value. Releases in the Digital Data Series offer access to scientific information that is available in digital form; the information is primarily for viewing, processing, and (or) analyzing by computer.

DDS-0064. USGS mineral deposit models, edited by D. B. Stoesser and W. D. Heran. 2000. One CD-ROM. \$32.

This CD-ROM was produced in accordance with the ISO 9660 standard and is intended for use under Microsoft Windows 95, 98, NT or 2000. Acrobat Reader version 3 or greater is required to view the report files.

This CD-ROM publication is a compilation of 29 previously published mineral deposit model and related reports of the USGS. It in part reflects a history of mineral deposit model development within the USGS. Model types presented include descriptive, grade-tonnage, geoenvironmental, and geophysical. These models generally compile the geologic, geochemical, and geophysical characteristics of various types of metallic and nonmetallic mineral deposits. The models list attributes intended as guides for resource and geoenvironmental studies and for mineral exploration. They are presented using the lithologic-tectonic environmental mineral deposit classification scheme originally developed by Cox and Singer (1986).

DDS-0066. COLORADO. Assessment of the alluvial sediments in the Big Thompson River valley, Colorado, by Adrienne Barnett and K. J. Ellefsen. 2000. \$32. Also available on the web at <http://greenwood.cr.usgs.gov/pub/dds/dds-066/>

System requirements for Acrobat Reader 4.0 (1) i486 or Pentium processor-based personal computer, (2) Microsoft Windows 95, Windows 98, or Windows NT 4.0 with Service Pack 3 or later, (3) 8 MB of RAM on Windows 95 and Windows 98 (16 MB recommended), (4) 16 MB of RAM on Windows NT (24 MB recommended), and (5) 10 MB of available hard disk space.

To obtain subsurface geologic information about the alluvium in the Big Thompson River valley, S-wave refraction data were collected along three roads that cross the valley. The refraction data were used to estimate velocities and thickness for a layered-earth model; from these models, three cross sections of the river valley were constructed. These cross sections show the thickness and the gross stratigraphy of the alluvium.



BOOKS

PROFESSIONAL PAPERS

Professional Papers are mainly comprehensive scientific reports of wide and lasting interest and importance to professional scientists and engineers. Included are reports on the results of resource studies, and of topographic, hydrologic, and geologic investigations. They also include collections of related papers addressing different aspects of a single scientific topic.

P 1500-K-R. UTAH. Assessment of regional earthquake hazards and risk along the Wasatch Front, Utah, edited by P. L. Gori and W. W. Hays, U.S. Geological Survey. 2000. (Chapters K-R are issued as a single volume and are not available separately.) \$32.

This report—the second of two volumes—represents an ongoing effort by the U.S. Geological Survey to transfer accurate Earth science information about earthquake hazards along Utah's Wasatch Front to researchers, public officials, design professionals, land-use planners, and emergency managers in an effort to mitigate the effects of these hazards. This volume contains eight chapters on ground-shaking hazards and aspects of loss estimation.

Introduction, by P. L. Gori and W. W. Hays, U.S. Geological Survey. p. 1-7.

K. Site amplification in the Salt Lake City-Ogden-Provo urban corridor and the implications for earthquake-resistant design, by W. W. Hays, U.S. Geological Survey. p. K1-K22.

L. UTAH. Predicting strong ground motion in Utah, by K. W. Campbell, U.S. Geological Survey. p. L1-L31.

M. UTAH. Probabilistic analysis of earthquake ground-shaking hazards along the Wasatch Front, Utah, by R. R. Youngs, F. H. Swan, and M. S. Power, GeoMatrix Consultants; D. P. Schwartz, U.S. Geological Survey; and R. K. Green, Woodward-Clyde Consultants. p. M1-M74.

N. UTAH. Relative ground response in Salt Lake City and areas of Springville-Spanish Fork, Utah, by K. W. King, R. A. Williams, and D. L. Carver, U.S. Geological Survey. p. N1-N24.

O. UTAH. In situ Poisson's ratio measurements near Provo, Utah, by R. D. Miller and D. W. Steeples, Kansas Geological Survey; K. W. King, U.S. Geological Survey; and R. W. Knapp, Kansas Geological Survey. p. O1-O10.

P. UTAH. Earthquake losses in central Utah, by S. T. Algermissen and E. P. Arnold, U.S. Geological Survey; K. V. Steinbrugge, El Carrito, CA; and M. G. Hopper and P. S. Powers, U.S. Geological Survey. p. P1-P29.

Q. UTAH. Iseismsals of some historical earthquakes affecting the Wasatch Front area, Utah, by M. G. Hopper, U.S. Geological Survey. p. Q1-Q25.

R. Seismic-risk methods and estimates for utility systems and state-owned buildings along the Wasatch Front, by C. E. Taylor, Dames and Moore; and D. B. Ward, Structural Facilities. p. R1-R28.



P 1624. MAINE. Migration of the Acadian Orogen and foreland basin across the Northern Appalachians of Maine and adjacent areas, by D. C. Bradley, R. D. Tucker, D. R. Lux, A. G. Harris and D. C. McGregor. 2000. 55 p. Available only on the web at <http://geopubs.wr.usgs.gov/prof-paper/pp1624/>

The timing of Acadian orogenesis in Maine is reassessed, on the basis of a new Silurian-Devonian time scale, new U/Pb and $^{40}\text{Ar}/^{39}\text{Ar}$ ages of Acadian plutons, new conodont and palynomorph ages of strata that constrain the age of deformation, and published information. This analysis shows that the Acadian deformation front migrated some 240 km (present distance) from southeast to northwest during a span of about 40 million years from Late Silurian to Middle Devonian time.

P 1632. CALIFORNIA. Multiproxy record of the last interglacial (MIS 5e) off Central and Northern California, U.S.A., from Ocean Drilling Program sites 1018 and 1020, by R. Z. Poore, H. J. Dowsett, J. A. Barron, U.S. Geological Survey; L. Heusser, Lamont-Doherty Earth Observatory; A. C. Ravelo, University of California at Santa Cruz; and A. Mix, Oregon State University. 2000. 19 p. \$3.75.

Environmental and climatic conditions during the last interglacial (about 125,000 years ago) along the Central and Northern California coastal region are interpreted from study of marine cores recovered by the Ocean Drilling Program at sites 1018 and 1020. Marine microfossil and pollen assemblages, oxygen isotopes in benthic foraminifers, physical properties, and calcium carbonate contents of cored sediments are proxies indicating strong links between the marine and terrestrial environments during marine isotope stage 5 (MIS 5). At the beginning of the last interglacial (MIS 5e), reduction in global ice volume, increase in surface temperature, and warming of air temperature along the Central and Northern California coast were synchronous within the resolution of our sampling record.

BULLETINS

Bulletins contain significant data and interpretations that are of lasting scientific interest but are generally more limited in scope or geographic coverage than Professional Papers. They include the results of resource studies and of geologic and topographic investigations, as well as collections of short papers related to a specific topic.

B 2180. WASHINGTON. Finite-element analysis of the Woodway Landslide, Washington, by W. Z. Savage, R. L. Baum, U.S. Geological Survey; M. M. Morrissey, Colorado School of Mines; and B. P. Arndt, Colorado Geological Survey. 2000. 9 p. Available only on the web at <http://greenwood.cr.usgs.gov/pub/bulletins/b2180/>

This report outlines the geology and hydrology of the Woodway Landslide site, presents geotechnical data for finite-element modeling of initiation of the slide, describes the computational algorithms being used and presents the finite-element modeling results. There is a concluding discussion comparing this analysis of the Woodway Landslide with that of Arndt (1999). These modeling results suggest that this landslide occurred because of elevated pore pressures in silt and sand layers in the stratigraphic section at Woodway.

B 2202-A. Total petroleum systems of the Illizi Province, Algeria and Libya; Tanezzuft-Illizi, by T. R. Klett. 2000. 79 p. Available

only on the web at <http://greenwood.cr.usgs.gov/pub/bulletins/b2202-a/>

Undiscovered conventional oil and gas resources were assessed within a total petroleum system of the Illizi Province (2056) as part of the U.S. Geological Survey (USGS) World Petroleum Assessment 2000. This study documents the geology, undiscovered oil and gas volumes, exploration activity, and discovery history of the Illizi Province.

B 2202-B. Total petroleum systems of the Grand Erg/Ahnet Province, Algeria and Morocco; the Tanezzuft-Timimoun, Tanezzuft-Ahnet, Tanezzuft-Sbaa, Tanezzuft-Mouydir, Tanezzuft-Benoud, and Tanezzuft-Béchar/Abadla, by T. R. Klett. 2000. 144 p. Available only on the web at <http://greenwood.cr.usgs.gov/pub/bulletins/b2202-b/>

This report was prepared as part of the U.S. Geological Survey World Petroleum Assessment 2000. The primary objective of World Petroleum Assessment 2000 is to assess the quantities of conventional oil, gas, and natural gas liquids outside the United States that have the potential to be added to reserves in the next 30 years. Parts of these assessed volumes reside in undiscovered fields whose sizes exceed the stated minimum-field-size cutoff value for the assessment unit, which is variable but must be at least 1 million barrels of oil equivalent. Another part of these assessed volumes occurs as reserve growth of fields already discovered. However, the contribution from reserve growth of discovered fields to resources is not covered for the area treated in this report.

CIRCULAR

Circulars present technical or nontechnical information of wide popular interest in a format designed for distribution at no cost to the public. They are published to disseminate administrative information or important scientific information of an ephemeral nature.

C 1207. FLORIDA. Water quality in southern Florida; Florida, 1996-98, by B. F. McPherson, R. L. Miller, K. H. Haag and Anne Bradner. 2000. 32 p.

Major influences and findings for water quality and biology in southern Florida, including the Everglades, are described and illustrated. Samples were collected to determine total phosphorus, dissolved organic carbon, pesticides, mercury, nitrate, volatile organic carbon compounds, and radon-222. Water-management, agricultural, and land-use practices are discussed. Sixty-three species of fish in 26 families were collected; 43 native species, 10 exotic or nonnative species, and 10 species of marine fish that periodically inhabit canals and rivers were identified.

GENERAL INTEREST PUBLICATION

Fossils, rocks, and time, by L. E. Edwards and John Pojeta, Jr. 1999. 24 p. (Reprint.) Also available on the web at <http://pubs.usgs.gov/gip/fossils>

MISCELLANEOUS AND SPECIAL BOOKS

Geographic Names Information System (GNIS)

GNIS, developed by the Geographic Names Office, Mapping Applications Center, National Mapping Division, is the basis for the Digital Gazetteer of the United States (CD-ROM) and includes all names in the data base as of



July 1999, as well as the necessary software for searching, analyzing, and exporting the data. The software must be installed onto an IBM-compatible hard disk before the data can be used. The CD-ROM, which can be purchased for \$57 plus \$5.00 shipping, contains the National Geographic Names Data Base (NGNDB), Antarctica Geographic Names Data Base (AGNDB), Topographic Map Names Data Base (TMNDB), and Reference Data Base (RDB). Each record in the NGNDB, AGNDB, and TMNDB can contain a variety of location and description fields. All can be displayed, and most can be searched. Not all fields, however, contain data. The RDB contains one field—bibliography. The CD-ROM is no longer accompanied by a users manual. The installation procedures, readme file, and trouble shooting guide are provided in WordPerfect, HTML, and PDF formats. All necessary information regarding startup procedures are listed in the "Getting_Started" directory on the CD.

The GNIS CD-ROM may be ordered from: Information Services, U.S. Geological Survey, DFC, Building 810, MS 306, Denver, CO 80225, or by telephoning 1-888-ASK-USGS. Prepayment is required. Please make check or money order payable to: U.S. Department of the Interior—USGS. VISA, MasterCard, American Express, and Discover Card are accepted. Prices are subject to change.

Information and Technical Specifications may be requested from: U.S. Geological Survey, Manager GNIS, 523 National Center, Reston, VA 20192. 703-648-4544.



INFORMATION PERIODICALS

Many Information Periodicals products are available through the systems or formats listed below:

Mines FaxBack: Return fax service.

1. Use the touch-tone handset attached to your fax machine's telephone jack. (ISDN [digital] telephones cannot be used with fax machines.)
2. Dial 703-648-4999.
3. Listen to the menu options and punch in the number of your selection, using the touch-tone telephone.
4. After completing your selection, press the start button on your fax machine.

CD-ROM: The U.S. Geological Survey's Minerals and Materials Information CD-ROM is updated three times a year (February, June, and October) and is sold by the U.S. Government Printing Office's Superintendent of Documents. The CD-ROM includes Minerals Yearbook chapters, Mineral Commodity Summaries, Statistical Compendium, Metal Prices in the United States, and other publications. For information on CD-ROM products in this series, please contact Roger Loebenstein at 703-648-4752.

Internet/World Wide Web: Text and graphics. Access via PC-based browsing software such as Netscape or Mosaic. The URL is <http://minerals.usgs.gov/minerals/>

Internet System Administrator: jgambogi@usgs.gov

METAL INDUSTRY INDICATORS

The Metal Industry Indicators (MII) is a monthly newsletter (free) that analyzes and forecasts the economic health of five metal industries with composite leading and coincident indexes: primary metals, steel, copper, primary and secondary aluminum, and aluminum mill products. The MII was developed by the former U.S. Bureau of Mines in cooperation with the Center for International Business Cycle Research at Columbia University. In late 1996, the USGS assumed sole responsibility for producing the indexes and publishing the MII. Each month, these indexes are analyzed along with any economywide occurrences that would affect the metal industries. Order single copy from Publication Distribution, Pittsburgh Research Center, P.O. Box 18070, Pittsburgh, PA 15236 (send self-addressed label). Also available

by Mines FaxBack (703-648-4999) and on the Internet (<http://minerals.usgs.gov/minerals/pubs/>). *Mailing list additions or changes:* USGS, Publication Services Section, 984 National Center, Reston, VA 20192.

MINERAL INDUSTRY SURVEYS

The Mineral Industry Surveys (MIS's) are periodic statistical and economic reports (free) designed to provide timely statistical data on production, distribution, stocks, and consumption of significant mineral commodities. The surveys are issued monthly, quarterly, annually, or at other regular intervals, depending on the need for current data. The MIS's are published by commodities as well as by States. Order single copy from Publication Distribution, Pittsburgh Research Center, P.O. Box 18070, Pittsburgh, PA 15236 (send self-addressed label). Also available by Mines FaxBack (703-648-4999) and on the Internet (<http://minerals.usgs.gov/minerals/pubs/>). *Mailing list additions or changes:* USGS, Publication Services Section, 984 National Center, Reston, VA 20192. A series of international MIS's is also available, by Mines FaxBack only.

MINERAL COMMODITY SUMMARIES

Published on an annual basis, the Mineral Commodity Summaries is the earliest Government publication to furnish estimates covering nonfuel mineral industry data. Data sheets contain information on the domestic industry structure, Government programs, tariffs, and 5-year salient statistics for over 90 individual minerals and materials. The 1999 edition is available from the Government Printing Office, stock number 024-004-02461-5, \$17.00 domestic; \$21.25 foreign. Data sheets are also available by Mines FaxBack (703-648-4999) and on the Internet (<http://minerals.usgs.gov/minerals/pubs/>).

MINERALS YEARBOOK

The Minerals Yearbook discusses the performance of the worldwide minerals and materials industry during a calendar year, and it provides background information to assist in interpreting that performance. Content of the individual Minerals Yearbook volumes follows:

Volume I, Metals and Minerals, contains chapters about virtually all metallic and industrial mineral commodities important to the U.S. economy. Chapters on survey methods, summary statistics for domestic nonfuel minerals, and trends in mining and quarrying in the metals and industrial minerals industries in the United States are also included.

Volume II, Area Reports: Domestic, contains a chapter on the minerals industry of each of the 50 States and Puerto Rico and the Administered Islands. This volume also has chapters on survey methods and summary statistics for domestic nonfuel minerals.

Volume III, Area Reports: International, is published as four separate reports. These reports collectively contain the latest available mineral data on more than 190 foreign countries and discuss the importance of minerals to the economies of these nations and the United States. Each report begins with an overview of the region's mineral industries during the year. It continues with individual country chapters that examine the mining, refining, processing, and utilization of minerals in each country of the region and how they relate to U.S. industry. Most chapters include production and industry structure tables, information about Government policies and programs affecting the country's minerals industry, and an outlook section.

For information on the latest products, please contact Linda Borden 703-648-4753. Information is also available on the Internet (<http://minerals.usgs.gov/minerals/pubs/>).





FACT SHEETS

Fact Sheets are used to disseminate timely information on scientific and technical programs of the U.S. Geological Survey and are available, at no cost, from USGS Information Services, Box 25286, Denver, CO 80225.

- FS 0163-95. Magnetic surveys for locating abandoned wells. 1995. Available only on the web at <http://greenwood.cr.usgs.gov/pub/fact-sheets/fs-0163-95/>
- FS 0171-95. FLORIDA. South Florida ecosystems; changes through time. 1999. Available only on the web at <http://sofia.usgs.gov/publications/fs/171-95/>
- FS 0238-95. Potential-field computer programs, databases, and maps. 1997. 2 p. Available only on the web at <http://greenwood.cr.usgs.gov/pub/fact-sheets/fs-0238-95/>
- FS 0079-96. MISSISSIPPI. Water in Mississippi, by C. G. O'Hara and H. S. Dennis. 1998. Available only on the web at http://ms.water.usgs.gov/water_fs/wateruse.html
- FS 0135-96. Fresh water discharge to Florida Bay. 1999. Available only on the web at <http://sofia.usgs.gov/publications/fs/135-96/>
- FS 0139-96. FLORIDA. Canal and wetland flow transport interaction; coupling models for canal and wetland interactions in the South Florida ecosystem, by R. W. Schaffranek. 1999. Available only on the web at <http://sofia.usgs.gov/publications/fs/139-96/>
- FS 0144-96. Ecosystem history; Florida Bay and the southwest coast. 2000. Available only on the web at <http://sofia.usgs.gov/publications/fs/144-96/>
- FS 0145-96. Ecosystem history of Biscayne Bay and the southeast coast, by S. E. Ishman. 2000. Available only on the web at <http://sofia.usgs.gov/publications/fs/145-96/>
- FS 0146-96. FLORIDA. Ecosystem history; terrestrial and fresh-water ecosystems of southern Florida. 1999. Available only on the web at <http://sofia.usgs.gov/publications/fs/146-96/>
- FS 0156-96. Sedimentation, sea-level rise and circulation in Florida Bay. 1999. Available only on the web at <http://sofia.usgs.gov/publications/fs/156-96/>
- FS 0158-96. FLORIDA. Hydrogeology of the surficial aquifer system in Southwest Florida. 1999. Available only on the web at <http://sofia.usgs.gov/publications/fs/158-96/>
- FS 0162-96. High accuracy elevation data collection. 1999. Available only on the web at <http://sofia.usgs.gov/publications/fs/162-96/>
- FS 0163-96. FLORIDA. Color infrared digital orthophoto quadrangles for the South Florida ecosystem. 1999. Available only on the web at <http://sofia.usgs.gov/publications/fs/163-96/>
- FS 0166-96. FLORIDA. Mercury studies in the Florida Everglades. 2000. Available only on the web at <http://sofia.usgs.gov/publications/fs/166-96/>
- FS 0169-96. FLORIDA. Vertical exchange of ground water and surface water in the Florida Everglades. 1999. Available only on the web at <http://sofia.usgs.gov/publications/fs/169-96/>
- FS 0175-96. Internal surface water flows, by M. H. Murray. 1999. Available only on the web at <http://sofia.usgs.gov/publications/fs/175-96/>
- FS 0179-96. FLORIDA. Water flows and nutrient loads to the southwest coast of Florida, by V. A. Levesque. 1996. Available only on the web at <http://sofia.usgs.gov/publications/fs/179-96/>
- FS 0095-97. Modeling hurricane effects on mangrove ecosystems. 1997. Available only on the web at <http://sofia.usgs.gov/sfrsf/rooms/coastal/hurrfs.html>
- FS 0103-97. Taking the Earth's pulse, by R. L. Woodward, H. M. Benz, K. M. Shedlock and W. M. Brown, III. 2000. 2 p. (Revised and reprinted.) Also available on the web at <http://geohazards.cr.usgs.gov/factsheets/pulse/worldhaz.html>
- FS 0110-97. FLORIDA. Organochlorine pesticides and PCBs in southern Florida fishes; then and now, by K. H. Haag and B. F. McPherson. National Water-Quality Assessment Program. 1997. 4 p. Available only on the web at http://fl.water.usgs.gov/Abstracts/fs110_97_haag.html
- FS 0154-97. ALASKA. Studies of suction dredge gold-placer mining operations along the Fortymile River, eastern Alaska. 1997. 2 p. Available only on the web at <http://greenwood.cr.usgs.gov/pub/fact-sheets/fs-0154-97/>
- FS 0032-98. FLORIDA. Water-quality assessment of southern Florida; wastewater discharges and runoff, by R. L. Marella. National Water-Quality Assessment Program. 1998. 6 p. Available only on the web at http://fl.water.usgs.gov/Abstracts/fs032-98_marella.html
- FS 0061-98. FLORIDA. National Water-Quality Assessment Program; study design for data collection in the southern Florida study unit, by K. H. Haag, B. A. Bernard, L. A. Bradner, D. S. McCulloch, B. F. McPherson and R. L. Miller. 1998. 4 p. Available only on the web at http://fl.water.usgs.gov/Abstracts/fs061_98_haag.html
- FS 0061-99. FLORIDA. USGS science for restoration of South Florida; the South Florida Ecosystem Program. 2000. Available only on the web at <http://sofia.usgs.gov/publications/fs/61-99/>
- FS 0022-00. CALIFORNIA. Volcano hazards of the Lassen Volcanic National Park area, California, by M. A. Clyne, R. L. Christiansen, C. D. Miller, P. H. Stauffer and J. W. Hendley, II. 2000. 4 p.
- FS 0032-00. MISSOURI. Ground- and surface-water relations in the Eleven Point and Current River basins, south-central Missouri, by M. J. Kleeschulte. Prepared in cooperation with the U.S. Forest Service, U.S. Department of the Interior, Bureau of Land Management, and Missouri Department of Conservation. 2000. 6 p.



- FS 0049-00. High Plains Regional Ground-Water Study web site, by S. L. Qi. National Water-Quality Assessment Program. 2000. 2 p.
- FS 0060-00. OREGON. Mount Hood; history and hazards of Oregon's most recently active volcano, by C. A. Gardner, W. E. Scott, J. J. Major and T. C. Pierson. 2000. 4 p. Also available on the web at <http://geopubs.wr.usgs.gov/fact-sheet/fs060-00/>
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- High-performance liquid chromatography/electrospray ionization-mass spectrometry analysis of agricultural and human health pharmaceuticals in surface and ground water, by J. D. Cahill, E. T. Furlong, S. L. Werner, M. R. Burkhardt and P. M. Gates. p. 65.
- Odors, nuisance, and the right to farm, by T. J. Centner. p. 66.
- NEW MEXICO. Ground-water quality at 94 dairies in New Mexico, by Clay Chesney. p. 67.
- FLORIDA. Distribution and fate of nitrate in shallow ground water of citrus farming areas, Indian River, Martin, and St. Lucie counties, Florida, by C. A. Crandall. p. 68.
- Impacts of animal feeding operations on wildlife health, by L. H. Creekmore, M. J. Wolcott and M. D. Samuel. p. 69.
- Ground-water protection and manure management, by Matthew Culp. p. 70.
- MISSOURI. Microbiological quality of public-water supplies in the Ozark Plateaus aquifer system, Missouri, by J. V. Davis. p. 71.

A risk-based approach to phosphorus management on manured and non-manured soils, by J. G. Davis and R. M. Waskom. p. 72.

COLORADO. Nitrogen, sulfate, chloride, and manganese in ground water in the alluvial deposits of the South Platte River valley near Greeley, Weld County, Colorado, by N. G. Gaggiani. p. 73.

MICHIGAN. Abundance, dissemination, and diversity of *Escherichia coli* in a watershed in northern Michigan, by S. K. Haack, J. S. Wilson, S. M. Woodhams, D. T. Long, B. C. Pijanowski, D. F. Boutt and D. W. Hyndman. p. 74.

Use of a hydrogeologic framework to examine the effects of agricultural fertilizers and manure applications on nutrients in shallow ground water of the Mid-Atlantic Coastal Plain, by T. C. Hancock, S. W. Ator, S. K. Kelley and J. M. Denver. p. 75.

Potential exposure of the nation's waters to animal manure, by K. J. Hitt, B. C. Ruddy and J. D. Stoner. p. 76.

NORTH CAROLINA. Regulating intensive livestock operations in North Carolina, by Sue Homewood. p. 77.

Ecological effects of antibiotics in runoff from an Eastern Shore tributary of the Chesapeake Bay, by Jenefir Isbister, T. B. Huff, N. S. Simon and Trinh Tu. p. 78.

National Association of State Departments of Agriculture (NASDA) CAFO survey results, by C. W. Ingram and J. G. Anliker. p. 79.

Development of comprehensive nutrient management plans for animal feeding operations, by T. A. Iivari. p. 80.

IOWA. Hepatitis E virus antibody prevalence among selected populations in Iowa, by Y. V. Karetnyi, M. J. Gilchrist and S. J. Naides. p. 81.

FLORIDA. A multi-tracer approach for determining sources of nitrate contamination of ground water and springs, Lafayette County, Florida, by B. G. Katz, J. F. Bohlke and H. D. Hornsby. p. 82.

NEVADA. Integrated approach for a comprehensive nutrient management plan at Pahrump Dairy, Nevada, by Jay Lazarus, C. D. Ratcliff and Eric Goedhart. p. 83.

Methods of assessing microbial contamination of surface and ground waters by animal feeding operations, by D. N. Myers. p. 84.

Dairy impacts to water quality and Orange County water district's comprehensive waste management strategy, by K. A. O'Connor. p. 85.

MINNESOTA. Quantity and quality of seepage from two earthen basins used to store livestock waste in southern Minnesota, 1997-98; preliminary results of long-term study, by J. F. Ruhl. p. 86.

OKLAHOMA. The shaping of law through ten years of hog production in Oklahoma, by K. M. Rysted. p. 87.

MINNESOTA. Minnesota's generic environmental impact statement on animal agriculture, by S. K. Schmidt. p. 88.

Contaminants and related effects in fish from the Mississippi, Columbia, and Rio Grande basins, by C. J. Schmitt, T. M.

Bartish, V. S. Blazer, D. E. Tillitt, T. S. Gross, Gail Dethloff, N. D. Denslow, W. L. Bryant and L. R. DeWeese. p. 89.

Phosphate sorption by base metal hydroxides generated in the neutralization of acid mine drainage, by P. L. Sibrell and P. R. Adler. p. 90.

DELAWARE. Delaware's animal agriculture; its role in nonpoint source pollution and options for the future, by J. T. Sims. p. 91.

Identification of sources of nitrate in ground water; a feasibility evaluation, by T. B. Spruill. p. 92.

Molecular tracers of organic-matter sources to drinking-water supplies, by L. J. Standley, L. A. Kaplan and Darryl Smith. p. 93.

Cycling of sulfur in the Anoka sand plain aquifer and its relation to denitrification, by Michele Tuttle, J. K. Bohlke, Richard Wanty, Geoff Delin and Matthew Landon. p. 94.

Roxarsone in natural water systems, by R. L. Wershaw, J. R. Garbarino and M. R. Burkhardt. p. 95.

Nitrous oxide emission from a spray field fertilized with liquid lagoonal swine effluent in the Southeastern United States, by S. C. Whalen, R. L. Phillips and E. N. Fischer. p. 96.

TEXAS. Evaluating the cumulative impacts from animal feeding operations within impaired watersheds in Texas; a regulatory approach, by C. F. Wise. p. 97.

OF 00-0211. Benthic foraminiferal census data and radiocarbon dates from the Gulf of Mexico (Matagorda 1A Core), by L. E. Osterman, R. Z. Poore and E. D. Castenson. 10 p. (NC, Da, M.) Microfiche \$5; paper copy \$5.

OF 00-0215. Publications of the Western Earth Surface Processes Team 1999, compiled by Paul Stone and C. L. Powell, II. 19 p. (NC, Da, M.) Microfiche \$5; paper copy \$5. Also available on the web at <http://geopubs.wr.usgs.gov/open-file/of00-215/>

OF 00-0219. CALIFORNIA. Preliminary potential-field constraints on the geometry of the San Fernando Basin, Southern California, by V. E. Langenheim, A. Griscom, R. C. Jachens and T. G. Hildenbrand. 36 p. (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 185 Berry St., Suite 210, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.) Microfiche \$5; paper copy \$12.50. Also available on the web at <http://geopubs.wr.usgs.gov/open-file/of00-219/>

OF 00-0221. Bibliography of literature pertaining to Long Valley Caldera and associated volcanic fields, by J. W. Ewert and C. J. Harpel. 156 p. (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 185 Berry St., Suite 210, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.) Available only on the web at <http://geopubs.wr.usgs.gov/open-file/of00-221/>

OF 00-0231. NEW MEXICO. Water-level data for the Albuquerque Basin and adjacent areas, central New Mexico, period of record through 1999, by D. R. Rankin. Prepared in cooperation with the



City of Albuquerque. 62 p. (NC, Da, M, Wb.) Microfiche \$5; paper copy \$16.50.

OF 00-0239. IDAHO. Analytical data for reconnaissance geochemical samples from mine dumps, stream sediments, and waters at the Thompson Creek tungsten mine, Custer County, Idaho, by B. S. Van Gosen, R. G. Eppinger, J. M. Hammarstrom, P. H. Briggs, J. G. Crock, C. Gent, A. L. Meier, S. J. Sutley and P. M. Theodorakos. 28 p. (NC, M, Da, S; Idaho Geol. Surv., University of Idaho Campus, Morrill Hall, Room 332, Moscow, ID 83843.) Available only on the web at <http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-00-0239/>

OF 00-0276. RHODE ISLAND. Distribution of selected volatile organic compounds determined with water-to-vapor diffusion samplers at the interface between ground water and surface water, Centredale Manor site, North Providence, Rhode Island, September 1999, by P. E. Church, F. P. Lyford and Scott Clifford. Prepared in cooperation with the U.S. Environmental Protection Agency. 9 p., 1 over-size sheet. (NC, Da, M, Wb.) \$8.50.

OF 00-0298. COLORADO. Databases and spatial data model for mineralized areas, mines, and prospects in the Grand Mesa, Uncompahgre, and Gunnison (GMUG) national forests, Colorado, by A. B. Wilson, G. T. Spanski, M. J. Crane and M. D. Woodard. One CD-ROM. (NC, M, Da; Vicki J. Cowart, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203-2277; Chief, Geotechnical Services Branch, Office of the State Engineer, 1313 Sherman St., Room 818, Denver, CO 80203-2277.) \$32. Also available on the web at <http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-00-0298/>

Minimum system requirements; Windows 95, Pentium processor, 8 MB memory (32 MB recommended).



THEMATIC MAPS AND CHARTS

GEOLOGIC INVESTIGATIONS SERIES

In August 1996, the I-map series name was changed from Miscellaneous Investigations Series Maps to Geologic Investigations Series. All geologic maps approved for publication after August 1996 will be published in the Geologic Investigations Series. The series definition remains the same.

I-2542. CALIFORNIA. Geologic map of the Red Bluff 30' × 60' quadrangle, California, by M. C. Blake, Jr., D. S. Harwood, E. J. Helley, W. P. Irwin, A. S. Jayko and D. L. Jones. 2000. Lat 40° to 40°30', long 122° to 123°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 36 by 50 inches (in color). (Accompanied by 15 page text.) \$7. Also available on the web at <http://geopubs.wr.usgs.gov/i-map/i2542>

The Red Bluff 30' × 60' quadrangle includes rocks of four major geologic provinces; the Klamath Mountains, the Coast Ranges, the Great Valley, and the Cascade Range. These rocks and their geologic histories differ greatly from one another. The stratigraphic and structural relations shown on the map provide a key to understanding how the rocks of these various provinces were formed and were subsequently assembled.

I-2672. COLORADO. Map and description of the active part of the Slumgullion Landslide, Hinsdale County, Colorado, by R. W. Fleming and Rex L. Baum, U.S. Geological Survey; and Marco Giardino, Consiglio Nazionale delle Ricerche, Italy. 1999. Three sheets. Lat 38°, long 107°15'. Scale 1:1,000 (1 inch = about 83 feet). Sheets 1 and 2, 57 1/2 by 33 inches; sheet 3, 45 by 33 inches (all in color). (Accompanied by 34 page text.) \$14. Also available on the web at <http://greenwood.cr.usgs.gov/pub/i-maps/i-2672>

Detailed map shows surface features and structures (fractures, folds, and faults) related to movement of the Slumgullion Landslide combined with field measured and photogrammetrically measured movement data. Pamphlet describes the landslide features, including extrusions and pull-apart basins, and interprets the kinematics of the landslide.

I-2690. MONTANA, WYOMING. Geologic map of the Ennis 30' × 60' quadrangle, Madison and Gallatin counties, Montana, and Park County, Wyoming, by K. S. Kellogg and V. S. Williams. 2000. Lat 45° to 45°30', long 111° to 112°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 42 by 35 inches (in color). (Accompanied by 16 page text.) (Supersedes Open-File Report 97-851.) \$7.

I-2701. MASSACHUSETTS. Sun-illuminated sea floor topography of Quadrangle 1 in the Stellwagen Bank National Marine Sanctuary off Boston, Massachusetts, by P. C. Valentine, J. L. Baker and T. S. Unger. Prepared in cooperation with the National Oceanic and Atmospheric Administration. 2000. Lat 42°05' to 42°12', long 70°25' to 70°36'. Scale 1:25,000 (one centimeter on the map represents 250 meters on the sea floor). Sheet 27 by 35 inches (in color). \$7.

I-2704. MASSACHUSETTS. Sun-illuminated sea floor topography of Quadrangle 4 in the Stellwagen Bank National Marine Sanctuary off Boston, Massachusetts, by P. C. Valentine, T. S. Unger and J. L. Baker. Prepared in cooperation with the National Oceanic and Atmospheric Administration. 2000. Lat 42°13' to 42°19', long 70°25' to 70°36'. Scale 1:25,000 (one centimeter on the map represents 250 meters on the sea floor). Sheet 27 by 35 inches (in color). \$7.

I-2709. MASSACHUSETTS. Sun-illuminated sea floor topography of Quadrangle 9 in the Stellwagen Bank National Marine Sanctuary off Boston, Massachusetts, by P. C. Valentine, J. L. Baker and T. S. Unger. Prepared in cooperation with the National Oceanic and Atmospheric Administration. 2000. Lat 42°20' to 42°26', long 70°03' to 70°13'. Scale 1:25,000 (one centimeter on the map represents 250 meters on the sea floor). Sheet 27 by 35 inches (in color). \$7.

I-2710. MASSACHUSETTS. Sun-illuminated sea floor topography of Quadrangle 10 in the Stellwagen Bank National Marine Sanctuary off Boston, Massachusetts, by P. C. Valentine, T. S. Unger and J. L. Baker. Prepared in cooperation with the National Oceanic and Atmospheric Administration. 2000. Lat 42°27' to 42°33', long 70°25' to 70°36'. Scale 1:25,000 (one centimeter on the map represents 250 meters on the sea floor). Sheet 27 by 35 inches (in color). \$7.

I-2711. MASSACHUSETTS. Sun-illuminated sea floor topography of Quadrangle 11 in the Stellwagen Bank National Marine Sanctuary of Boston, Massachusetts, by P. C. Valentine, J. L. Baker and T. S. Unger. Prepared in cooperation with the National Oceanic



- and Atmospheric Administration. 2000. Lat 42°27' to 42°33', long 70°14' to 70°24'. Scale 1:25,000 (one centimeter on the map represents 250 meters on the sea floor). Sheet 27 by 35 inches (in color). \$7.
- I-2712. MASSACHUSETTS. Sun-illuminated sea floor topography of Quadrangle 12 in the Stellwagen Bank National Marine Sanctuary off Boston, Massachusetts, by P. C. Valentine, T. S. Unger and J. L. Baker. Prepared in cooperation with the National Oceanic and Atmospheric Administration. 2000. Lat 42°27' to 42°33', long 70°02' to 70°13'. Scale 1:25,000 (one centimeter on the map represents 250 meters on the sea floor). Sheet 27 by 35 inches (in color). \$7.
- I-2722. MISSOURI. Geologic map of the Powder Mill Ferry Quadrangle, Shannon and Reynolds counties, Missouri, by R. C. McDowell and R. W. Harrison. 2000. Lat 37°07'30" to 37°15', long 91°07'30" to 91°15'. Scale 1:24,000 (1 inch = 2000 feet). Sheet 54 by 33 inches (in color). \$7. Also available on the web at <http://pubs.usgs.gov/i-maps/i-2722/>
- I-2726. OHIO, PENNSYLVANIA, NEW YORK. Stratigraphic framework and depositional sequences in the Lower Silurian regional oil and gas accumulation, Appalachian Basin; from Jackson County, Ohio, through northwestern Pennsylvania, to Orleans County, New York, by R. T. Ryder. 2000. Two sheets. Lat 38° to 42°, long 78° to 82°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 1, 54 by 25 inches; sheet 2, 48 by 32 inches (both in color). (Accompanied by 8 page text.) \$14.
- I-2750-A. COLORADO. 3-D image of urban areas and mountains of the northern Front Range, Colorado, by N. S. Fishman, J. M. Evans, R. J. Olmstead and W. H. Langer. 2000. Sheet 34 by 22 inches (in color). (Accompanied by 4 page text.) Available only on the web at <http://greenwood.cr.usgs.gov/pub/i-maps/i-2750-a/>
- Tremendous growth in the Front Range of Colorado over the past 30 years has challenged businesses as well as city, county, State and Federal planners to meet the increasing demand for natural resources necessary for growth. This report presents a stylized 3-D image of urban areas and adjacent mountains of the Front Range and a description of how it was created. The image is intended to serve as a base for subsequent publications in this series (USGS Geologic Investigations Series I-2750), which will address topics such as the distribution and quality of water, aggregate, and energy resources in the region. The image is also intended for use by others to suit their individual needs, and is available in digital form on the web.
- MF-2343. ARIZONA. Geologic map of the upper Parashant Canyon and vicinity, Mojave County, northwestern Arizona, by G. R. Billingsly, M. L. Harr and J. L. Wellmeyer. 2000. Lat 36°15' to 36°30', long 113°15' to 113°30'. Scale 1:31,680 (1 inch = 2,640 feet). Sheet 39 by 44 inches (in color). (Accompanied by 27 page text.) Available only on the web at <http://geopubs.wr.usgs.gov/map-mf/mf2343/>
- MF-2345. CALIFORNIA. Seafloor rocks and sediments of the continental shelf from Monterey Bay to Point Sur, California, by S. L. Eittreim, R. J. Anima, A. J. Stevenson and F. L. Wong. 2000. Five sheets. 36°15'N to 37°, long 121°45' to 122°15'. Scale 1:100,000 (1 inch = about 1.6 miles). Sheets 36 by 48 inches (in color). \$7. Also available on the web at <http://geopubs.wr.usgs.gov/map-mf/mf2345/>
- MF-2346. WASHINGTON. Map showing recent and historic landslide activity on coastal bluffs of Puget Sound between Shilshole Bay and Everett, Washington, by R. L. Baum, E. L. Harp, U.S. Geological Survey; and W. A. Hultman, Shannon & Wilson. 2000. Lat 47°57'30" to 47°42'30", long 122°22'30" to 122°15'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 44 by 62 inches (in color). Available only on the web at <http://greenwood.cr.usgs.gov/pub/mf-maps/mf-2346>
- MF-2348. NEW MEXICO. Log and data from a trench across the Hubbell Spring fault zone, Bernalillo County, New Mexico, by S. F. Personius, U.S. Geological Survey; M. C. Eppes, University of New Mexico; S. A. Mahan, U.S. Geological Survey; D. W. Love, New Mexico Bureau of Mines and Mineral Resources; D. K. Mitchell, and Anne Murphy, University of New Mexico. 2000. Lat 34°45' to 35°30', long 106°15' to 107°. Sheet 95 by 36 inches (in color). Available only on the web at <http://greenwood.cr.usgs.gov/pub/mf-maps/mf-2348/>
- This report contains field and laboratory data resulting from a trench study of the Hubbell Spring fault zone near Albuquerque, New Mexico. This trench was excavated in September 1997, as part of earthquake hazards investigations of Quaternary faults in the Albuquerque metropolitan area. Included on the plate are location maps, a detailed trench log, unit descriptions, a scarp profile, soils and magnetic-susceptibility data, luminescence and uranium-series ages, and several photographs.
- MF-2350. Geologic map of the Jermanis coal field, central Armenia, by M. E. Brownfield, Artur Martirosyan, B. S. Pierce and E. A. Johnson. 2000. Lat 45°05' to 45°02', long 39°57' to 39°59'. Scale 1:10,000 (1 inch = about 833 feet). Sheet 44 by 34 inches (in color). (Accompanied by 17 page text.) Available only on the web at <http://greenwood.cr.usgs.gov/pub/mf-maps/mf-2350/>
- MF-2351. UTAH. Correlation of Middle Jurassic San Rafael Group and related rocks from Bluff to Monticello in southeastern Utah, by R. B. O'Sullivan. 2000. Sheet 40 by 34 inches. Available only on the web at <http://greenwood.cr.usgs.gov/pub/mf-maps/mf-2351/>

MISCELLANEOUS FIELD STUDIES MAPS

Multicolor or black and white maps on topographic or planimetric bases; quadrangle or irregular areas; various scales. Pre-1971 maps show bedrock geology in relation to specific mining or mineral-deposit problems; the majority of post-1971 maps are preliminary black and white maps on various subjects such as environmental studies or Wilderness mineral investigations.

MF-2343. ARIZONA. Geologic map of the upper Parashant Canyon and vicinity, Mojave County, northwestern Arizona, by G. R. Billingsly, M. L. Harr and J. L. Wellmeyer. 2000. Lat 36°15' to 36°30', long 113°15' to 113°30'. Scale 1:31,680 (1 inch = 2,640 feet). Sheet 39 by 44 inches (in color). (Accompanied by 27 page

HYDROLOGIC INVESTIGATIONS ATLAS

Multicolored or black and white maps on topographic or planimetric bases presenting a wide range of geohydrologic data; both regular and irregular areas.

HA-0746-D. COLORADO. Geohydrology of the shallow aquifers in the Boulder-Longmont area, Colorado, by S. G. Robson, J. S. Heiny and L. R. Arnold. Prepared in cooperation with the Colorado Department of Natural Resources, Division of Water Resources; Colorado Water Conservation Board. 2000. Five sheets. Lat 39°54'50" to 40°20'56", long 104°56'24" to 105°17'42".



Scale 1:50,000 (1 inch = about 4,200 feet). All sheets 36 by 45 inches (in color). \$14.

Shallow aquifers are present in unconsolidated sediments overlying bedrock in the Boulder-Longmont area, Colorado. Geologic and hydrologic map has produced a series of five maps showing (1) extent and thickness of the unconsolidated sediments, (2) altitude of the bedrock surface, (3) altitude of the water table, (4) saturated thickness, and (5) depth to water.



OUTSIDE PUBLICATIONS

ARTICLES AND REPORTS

Articles by USGS personnel in non-USGS publications recently cited in the GeoRef data base of the American Geological Institute are listed below. Non-USGS personnel who share authorship in articles with USGS personnel are indicated by an asterisk (*) immediately following the name. **These publications are not available from the U.S. Geological Survey.**

D. B. Adams (editor). Proceedings; specialty conference on potential consequences of climate variability and change to water resources of the United States. American Water Resources Association Technical Publication Series TPS. 99-1, 1999. 418 p.

Javier Almendros*, W. S. Barclay*, S. D. Wilcock and G. M. Purdy*. Seismic anisotropy of the shallow crust at the Juan de Fuca Ridge. *Geophysical Research Letters*. v. 27, no. 19, October 1, 2000. p. 3109-3112.

S. C. Amstrup. Polar bear, *in* The natural history of an Arctic oil field; development and the biota. (J. C. Truett, editor and others). San Diego, CA: Academia Press, 2000. p. 133-157.

B. J. Andraski and E. A. Jacobson*. Testing a full-range soil-water retention function in modeling water potential and temperature. *Water Resources Research*. v. 36, no. 10, October 2000. p. 3081-3089.

A. F. Arbogast* and D. M. Muhs. KANSAS. Geochemical and mineralogical evidence from eolian sediments for northwesterly mid-Holocene paleowinds, central Kansas, USA. *Quaternary International*, *in* Holocene environmental change on the Great Plains of North America. (S. A. Wolfe, editor and others). 67, 2000. p. 107-118.

A. Arciniega-Ceballos*, C. Valdes-Gonzalez* and P. Dawson. Temporal and spectral characteristics of seismicity observed at Popocatepetl Volcano, central Mexico. *Journal of Volcanology and Geothermal Research*. v. 102, no. 3-4, November 2000. p. 207-216.

F. C. Armstrong. Memorial to Fred Oscar Jones, 1912-1983. *Bulletin of the Association of Engineering Geologists*. v. 21, no. 2, May 1984. p. 249-251.

T. R. Armstrong, L. J. Drew, M. R. Karlinger and R. B. Moore. NEW HAMPSHIRE. Relations between igneous and metamorphic rock fracture patterns and groundwater yield from the variography of water-well yields; Pinardville Quadrangle, New Hampshire. *Natural Resources Research (International Association for Mathematical Geology)*. v. 8, no. 2, June 1999. p. 137-152.

T. R. Armstrong and R. J. Tracy*. VERMONT. One-dimensional thermal modelling of Acadian metamorphism in southern Vermont, USA. *Journal of Metamorphic Geology*. v. 18, no. 6, November 2000. p. 625-638.

Sidney Ash* and R. J. Litwin. Two new species of the pinnate microsporophyll *Pramelreuthia* from the Upper Triassic of the Southwestern United States. *American Journal of Botany*. v. 83, no. 8, August 1996. p. 1091-1099.

Gail Atkinson, Bill Bakun, Paul Bodin, David Boore, Chris Cramer, Art Frankel, Paulo Gasperini, Joan Gomberg, Tom Hanks, Bob Herrmann, Susan Hough, Arch Johnston, Shelley Kenner, Chuck Langston, Mark Linker, Paul Mayne, Mark Petersen, Christine Powell, Will Prescott, Eugene Schweig, Paul Segall, Seth Stein, Bill Stuart, Martitia Tuttle and R. B. VanArsdale. Reassessing the New Madrid seismic zone. *Eos, Transactions, American Geophysical Union*. v. 81, no. 35, August 29, 2000. p. 397, 402-403.

L. S. Balistrieri, S. E. Box, A. A. Bookstrom and Mohammed Ikramuddin*. Assessing the influence of reacting pyrite and carbonate minerals on the geochemistry of drainage in the Coeur d'Alene mining district. *Environmental Science & Technology, ES & T*. v. 33, no. 19, October 1, 1999. p. 3347-3353.

J. R. Bargar*, Rebecca Reitmeyer and J. A. Davis. Spectroscopic confirmation of uranium(VI)-carbonate adsorption complexes on hematite. *Environmental Science & Technology, ES & T*. v. 33, no. 14, July 15, 1999. p. 2481-2484.

N. G. Barlow*, J. M. Boyce*, F. M. Costard*, R. A. Craddock*, J. B. Garvin*, S. E. Sakimoto*, R. O. Kuzmin*, D. J. Roddy* and L. A. Soderblom. Standardizing the nomenclature of Martian impact crater ejecta morphologies. *Journal of Geophysical Research, E, Planets*. v. 105, no. 11, November 25, 2000. p. 26,733-26,738.

W. A. Barnhardt and R. E. Kayen. ALASKA. Radar structure of earthquake-induced, coastal landslides in Anchorage, Alaska. *Environmental Geosciences*. v. 7, no. 1, 2000. p. 38-45.

J. A. Barron. Mid-Pliocene diatom assemblages at sites 1016, 1021, and 1022. Proceedings of the Ocean Drilling Program, Scientific Results, *in* Proceedings of the Ocean Drilling Program, scientific results, California margin; covering Leg 167 of the cruises of the drilling vessel JOIDES Resolution, Acapulco, Mexico, to San Francisco, California, sites 1010-1022, 20 April-16 June 1996. (Mitchell Lyle and others). 167, July 2000. p. 111-113.

A. E. Becher. Water resources; groundwater. Special Publication - Geological Survey of Pennsylvania, *in* The geology of Pennsylvania. (C. H. Shultz, editor). Report no. 1, 1999. p. 666-677.

M. A. Becker*, J. A. Chamberlain, Jr.* and P. W. Stoffer. Pathologic tooth deformities in modern and fossil chondrichthians; a consequence of feeding-related injury. *Lethaia*. v. 33, no. 2, June 2000. p. 103-118.

N. M. Beeler, R. W. Simpson, S. H. Hickman and D. A. Lockner. Pore fluid pressure, apparent friction, and Coulomb failure. *Journal of Geophysical Research, B, Solid Earth and Planets*. v. 105, no. 11, January 10, 2000. p. 25,533-25,542.

G. I. Belchansky* and D. C. Douglas. Classification methods for monitoring Arctic Sea ice using OKEAN passive/active two-channel microwave data. *Remote Sensing of Environment*. v. 73, no. 3, September 2000. p. 307-322.



- A. E. Bence*, W. A. Burns*, P. J. Mankiewicz*, D. S. Page*, P. D. Boehm*, F. D. Hostettler, R. J. Rosenbauer and K. A. Kvenvolden. PAH refractory index as a source discriminant of hydrocarbon input from crude oil and coal in Prince William Sound, Alaska. *Organic Geochemistry*. v. 31, no. 9, September 2000. p. 931-943.
- K. L. Bice*, M. A. Arthur* and Louie Marincovich, Jr. Late Paleocene Arctic Ocean shallow-marine temperatures from mollusc stable isotopes. *Paleoceanography*. v. 11, no. 3, June 1996. p. 241-249.
- M. B. Bograd* and R. B. Fox. MISSISSIPPI. Topographic map revisions in Mississippi; a cooperative project. *Mississippi Geology*. v. 20, no. 2, June 1999. p. 31-33.
- J. K. Bolhke, K. Revesz, E. Busenberg, J. Deak*, E. Deseo* and M. Stute*. Groundwater record of halocarbon transport by the Danube River. *Environmental Science & Technology*, ES & T. v. 31, no. 11, November 1997. p. 3293-3299.
- R. D. Borchardt, H. P. Liu, R. E. Warrick, R. E. Westerlund and J. F. Gibbs. CALIFORNIA. Integrated strong-motion, soil-response arrays in San Francisco, California. *in Proceedings of the second international symposium on The effects of surface geology on seismic motion; recent progress and new horizon on ESG study; Volume 1.* (Kojiro Irikura, editor and others). Rotterdam: A. A. Balkema, 1998. p. 219-224.
- P. M. Bradley and F. H. Chapelle. Methane as a product of chloroethene biodegradation under methanogenic conditions. *Environmental Science & Technology*, ES & T. v. 33, no. 4, February 15, 1999. p. 653-656.
- P. M. Bradley, J. E. Landmeyer and F. H. Chapelle. Aerobic mineralization of MTBE and tert-butyl alcohol by stream-bed sediment microorganisms. *Environmental Science & Technology*, ES & T. v. 33, no. 11, June 1, 1999. p. 1877-1879.
- John Brock, A. H. Sallenger, W. B. Krabill*, Robert Swift*, Serdar Manizade*, Andrew Meredith*, Mark Jansen* and David Eslinger*. Aircraft laser altimetry for coastal process studies. *Coastal Sediments ... : Proceedings of the ... International Symposium on Coastal Engineering and Science of Coastal Sediment Processes*, *in Coastal sediments '99.* (N. C. Kraus, editor and others). 4, Vol. 3, 1999. p. 2414-2428.
- Andrew Brown. Geology and the Gettysburg campaign. *Educational Series - Pennsylvania Geological Survey*, Report no. 5, March 1997. 14 p.
- C. J. Brown, M. A. Schoonen* and J. L. Candela. Geochemical modeling of iron, sulfur, oxygen and carbon in a coastal plain aquifer. *Journal of Hydrology*. v. 237, no. 3-4, November 21, 2000. p. 147-168.
- C. L. Brown*, K. E. Karlstrom*, M. T. Heizler* and Dan Unruh. NEW MEXICO. Paleoproterozoic deformation, metamorphism, and $^{40}\text{Ar}/^{39}\text{Ar}$ thermal history of the 1.65-Ga Manzanita Pluton, Manzanita Mountains, New Mexico. *Guidebook - New Mexico Geological Society*, *in Albuquerque geology.* (F. J. Pazzaglia, editor and others). 50, 1999. p. 255-268.
- Eurybiades Busenberg and L. N. Plummer. Dating young groundwater with sulfur hexafluoride; natural and anthropogenic sources of sulfur hexafluoride. *Water Resources Research*. v. 36, no. 10, October 2000. p. 3011-3030.
- Edward Callender and P. C. Van Metre. Reservoir sediment cores show U.S. lead declines. *Environmental Science & Technology*, ES & T. v. 31, no. 9, 1997. p. 424-428.
- D. L. Campbell, R. J. Horton, R. J. Bisdorf, D. L. Fey, M. H. Powers and D. V. Fitterman. Some geophysical methods for tailings/mine waste work. *Proceedings of the ... International Conference on Tailings and Mine Waste*, *in Tailings and mine waste '99.* 6, 1999. p. 35-43.
- D. D. Carr*, L. F. Rooney and R. C. Freas*. Limestone and dolomite, *in Industrial minerals and rocks.* (D. D. Carr, editor). Littleton, CO: Society for Mining, Metallurgy and Exploration, 1994. p. 605-629.
- J. A. Centeno*, Philippe Collery*, Guy Vernet*, R. B. Finkelman, Herman Gibb* and Jean-Claude Etienne*. *Proceedings of the sixth international symposium on Metal ions in biology and medicine. Metal Ions in Biology and Medicine = Les Ions Métalliques en Biologie et en Médecine.* 6, May 2000. 816 p.
- F. H. Chapelle, D. A. Vroblesky, J. C. Woodward and D. R. Lovley*. Practical considerations for measuring hydrogen concentrations in groundwater. *Environmental Science & Technology*, ES & T. v. 31, no. 10, October 1997. p. 2873-2877.
- C. T. Chiou and D. E. Kile. Deviations from sorption linearity on soils of polar and nonpolar organic compounds at low relative concentrations. *Environmental Science & Technology*, ES & T. v. 32, no. 3, February 1, 1998. p. 338-343.
- C. T. Chiou, S. E. McGroddy and D. E. Kile. Partition characteristics of polycyclic aromatic hydrocarbons on soils and sediments. *Environmental Science & Technology*, ES & T. v. 32, no. 2, January 15, 1998. p. 264-269.
- Jungyill Choi and J. W. Harvey. FLORIDA. Quantifying time-varying ground-water discharge and recharge in wetlands of the northern Florida Everglades. *Wetlands (Wilmington, NC)*. v. 20, no. 3, September 2000. p. 500-511.
- J. L. Clayton. Composition of crude oil generated from coals and coaly organic matter in shales. *AAPG Studies in Geology*, *in Hydrocarbons from coal.* (B. E. Law, editor and others). 38, 1993. p. 185-201.
- D. E. Click. Water resources; surface water. *Special Publication - Geological Survey of Pennsylvania*, *in The geology of Pennsylvania.* (C. H. Shultz, editor). Report no. 1, 1999. p. 678-689.
- J. C. Cole. Geology of the Aban al Ahmar Quadrangle, Sheet 25F, Kingdom of Saudi Arabia, 1999. 45 p., 1 sheet. *Available from:* Ministry of Petroleum and Mineral Resources, Jiddah, Saudi Arabia.
- D. L. Collier (compiler). LOUISIANA. Water resources publications of the Louisiana District of the U. S. Geological Survey, 1904-98. *Water Resources Special Report*, Report no. 13, 1999. 169 p.
- S. M. Colman, J. W. King*, G. A. Jones*, R. L. Reynolds* and M. H. Bothner. Holocene and Recent sediment accumulation rates in southern Lake Michigan. *Quaternary Science Reviews*. v. 19, no. 16, November 2000. p. 1563-1580.
- T. M. Cronin, G. S. Dwyer*, P. A. Baker*, J. Rodriguez-Lazaro* and D. M. DeMartino. Orbital and suborbital variability in North Atlantic bottom water temperature obtained from deep-sea ostracod



- Mg/Ca ratios. *Palaeogeography, Palaeoclimatology, Palaeoecology*. v. 162, no. 1-2, September 15, 2000. p. 45-57.
- G. Cultrera*, D. M. Boore, W. B. Joyner and C. M. Dietel. CALIFORNIA. Evidence for nonlinear soil response at the Van Norman Complex, CA, USA, following the 1994 Northridge earthquake, *in* The effects of surface geology on seismic motion; recent progress and new horizon on ESG study; Volume 2. (Kojiro Irikura, editor and others). Rotterdam: A. A. Balkema, 1998. p. 779-786.
- J. S. Davis*, S. M. Roeske*, W. C. McClelland* and L. W. Sneek. Closing the ocean between the Precordillera terrane and Chilenia; Early Devonian ophiolite emplacement and deformation in the Southwest Precordillera. Special Paper - Geological Society of America, *in* Laurentia-Gondwana connections before Pangea. (V. A. Ramos, editor and others). 336, 1999. p. 115-138.
- W. E. Dean and Antje Schwalb*. SOUTH DAKOTA. Holocene environmental and climate change in the Northern Great Plains as recorded in the geochemistry of sediments in Pickerel Lake, South Dakota. *Quaternary International*, *in* Holocene environmental change on the Great Plains of North America. (S. A. Wolfe, editor and others). 67, 2000. p. 5-20.
- J. W. Dewey and D. W. Gordon. Regional geophysics; seismotectonic framework. Special Publication - Geological Survey of Pennsylvania, *in* The geology of Pennsylvania. (C. H. Shultz, editor). Report no. 1, 1999. p. 338-341.
- J. R. Dingler and A. L. Foote*. Hydrology in managed and unmanaged Louisiana coastal marshes. *Coastal Sediments ... : Proceedings of the ... International Symposium on Coastal Engineering and Science of Coastal Sediment Processes*, *in* Coastal sediments '99. (N. C. Kraus, editor and others). 4, Vol. 3, 1999. p. 1881-1896.
- H. J. Dowsett and R. Z. Poore. CALIFORNIA. Pliocene planktonic foraminifers from the California margin; Site 1021. *Proceedings of the Ocean Drilling Program, Scientific Results*, *in* Proceedings of the Ocean Drilling Program, scientific results, California margin; covering Leg 167 of the cruises of the drilling vessel JOIDES Resolution, Acapulco, Mexico, to San Francisco, California, sites 1010-1022, 20 April-16 June 1996. (Mitchell Lyle and others). 167, July 2000. p. 115-117.
- A. A. Drake, Jr. Precambrian and lower Paleozoic rocks; South Mountain and Reading Prong. Special Publication - Geological Survey of Pennsylvania, *in* The geology of Pennsylvania. (C. H. Shultz, editor). Report no. 1, 1999. p. 36-49.
- A. A. Drake, Jr. South Mountain and Reading Prong. Special Publication - Geological Survey of Pennsylvania, *in* The geology of Pennsylvania. (C. H. Shultz, editor). Report no. 1, 1999. p. 242-255.
- Wendell Duffield, Paul Morgan and John Sass. ARIZONA. Untapped potential? The San Francisco volcanic field, Arizona. *Bulletin - Geothermal Resources Council*. v. 29, no. 3, June 2000. p. 97-99.
- R. P. Eganhouse and J. Pontolillo. CALIFORNIA. Depositional history of organic contaminants on the Palos Verdes shelf, California. *Marine Chemistry*. v. 70, no. 4, June 2000. p. 317-338.
- R. P. Eganhouse, J. Pontolillo and T. J. Leiker. CALIFORNIA. Diagenetic fate of organic contaminants on the Palos Verdes shelf, California. *Marine Chemistry*. v. 70, no. 4, June 2000. p. 289-315.
- J. R. Eggleston, T. M. Kehn and G. H. Wood, Jr. Mineral resources; anthracite. Special Publication - Geological Survey of Pennsylvania, *in* The geology of Pennsylvania. (C. H. Shultz, editor). Report no. 1, 1999. p. 458-469.
- H. T. Evans, Jr., J. A. Konnerd and Malcolm Ross. The crystal structure of tetranatrolite from Mont Saint-Hilaire, Québec, and its chemical and structural relationship to paranatrolite and gonardite. *American Mineralogist*. v. 85, no. 11-12, December 2000. p. 1808-1815.
- K. V. Evans, J. N. Aleinikoff, J. D. Obradovich and C. M. Fanning*. MONTANA. SHRIMP U-Pb geochronology of volcanic rocks, Belt Supergroup, western Montana; evidence for rapid deposition of sedimentary strata. *Canadian Journal of Earth Sciences = Revue Canadienne des Sciences de la Terre*. v. 37, no. 9, September 2000. p. 1287-1300.
- J. L. Fanning. GEORGIA. Water use in coastal Georgia by county and source, 1997; and water-use trends, 1980-97. *Information Circular - Georgia Geologic Survey*, Report no. 104, 1999. 37 p.
- R. M. Flores. Coal-bed and related depositional environments in methane gas-producing sequences. *AAPG Studies in Geology, in* Hydrocarbons from coal. (B. E. Law, editor and others). 38, 1993. p. 13-37.
- G. R. Foulger*, M. J. Pritchard*, B. R. Julian, J. R. Evans, R. M. Allen*, G. Nolet*, W. J. Morgan*, B. H. Bergsson*, P. Erlendsson*, S. Jakobsdottir*, S. Ragnarsson*, R. Stefansson* and K. Vogfjord*. The seismic anomaly beneath Iceland extends down to the mantle transition zone and no deeper. *Geophysical Journal International*. v. 142, no. 3, September 2000. p. F2-F5.
- Elisabeth Fournier* and J. A. Barron. Intra-annual variability of the diatom assemblages at Hole 1034B (Saanich Inlet) near 9 ka. *Proceedings of the Ocean Drilling Program, Scientific Results*, *in* Proceedings of the Ocean Drilling Program, scientific results, Saanich Inlet; covering Leg 169S of the cruises of the drilling vessel JOIDES Resolution, Victoria, British Columbia, to Victoria, British Columbia, sites 1033-1034, 15-21 August 1996. (B. D. Bornhold and others). 169S, August 2000. p. 3-10.
- A. D. Frankel and William Stephenson. Three-dimensional simulations of ground motions in the Seattle region for earthquakes in the Seattle fault zone. *Bulletin of the Seismological Society of America*. v. 90, no. 5, October 2000. p. 1251-1267.
- Arthur Frankel, Paul Thenhaus, David Perkins and E. V. Leyendecker. New directions in the USGS National Earthquake Hazard Assessment Project. *Proceedings of the U. S. National Conference on Earthquake Engineering, in* Fifth U. S. national conference on Earthquake engineering; earthquake awareness and mitigation across the nation; proceedings. (Jamshid Mohammadi, editor and others). 5, Vol. 4, 1994. p. 599-607.
- A. J. Froelich and David Gottfried. Early Mesozoic; igneous and contact metamorphic rocks. Special Publication - Geological Survey of Pennsylvania, *in* The geology of Pennsylvania. (C. H. Shultz, editor). Report no. 1, 1999. p. 202-209.



- A. G. Galley* and R. A. Koski. Setting and characteristics of ophiolite-hosted volcanogenic massive sulfide deposits. *Reviews in Economic Geology*, in *Volcanic-associated massive sulfide deposits; processes and examples in modern and ancient settings*. (C. T. Barrie and others). 8, 1999. p. 221-246.
- G. R. Ganis*, S. H. Williams* and J. E. Repetski. PENNSYLVANIA. New biostratigraphic information from the western part of the Hamburg Klippe, Pennsylvania, and its significance for interpreting the depositional and tectonic history of the klippe. *Geological Society of America Bulletin*. v. 113, no. 1, January 2001. p. 109-128.
- J. B. Garvin* and G. G. Schaber. Morphometry of large impact craters on Venus; comparisons with terrestrial and lunar examples. Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, in *Abstracts of papers submitted to the Twenty-third lunar and planetary science conference*. 23, March 1992. p. 399-400.
- D. L. Gautier. Oil and gas resource appraisal; diminishing reserves, increasing supplies, in *Prediction; science, decision making, and the future of nature*. (Daniel Sarewitz, editor and others). Washington, DC: Island Press, 2000. p. 231-249.
- E. L. Geist and D. J. Andrews. Slip rates on San Francisco Bay area faults from anelastic deformation of the continental lithosphere. *Journal of Geophysical Research, B, Solid Earth and Planets*. v. 105, no. 11, January 10, 2000. p. 25,543-25,552.
- J. S. Gilbert*, P. M. O'Meara*, T. R. Wildeman*, J. G. Crock and G. A. Desborough. Adsorption capabilities of clinoptilolite relating to mine drainage remediation. *Proceedings of the ... International Conference on Tailings and Mine Waste*, in *Tailings and mine waste '99*. 6, 1999. p. 515-524.
- D. W. Gordon and J. W. Dewey. Environmental and engineering applications; earthquakes. Special Publication - Geological Survey of Pennsylvania, in *The geology of Pennsylvania*. (C. H. Shultz, editor). Report no. 1, 1999. p. 762-769.
- V. J. Grauch. NEW MEXICO. Principal features of high-resolution aeromagnetic data collected near Albuquerque, New Mexico. *Guidebook - New Mexico Geological Society*, in *Albuquerque geology*. (F. J. Pazzaglia, editor and others). 50, 1999. p. 115-118.
- V. J. Grauch, C. L. Gillespie* and G. R. Keller*. Discussion of new gravity maps for the Albuquerque Basin area. *Guidebook - New Mexico Geological Society*, in *Albuquerque geology*. (F. J. Pazzaglia, editor and others). 50, 1999. p. 119-124.
- Ronald Greeley*, P. H. Figueredo*, D. A. Williams*, F. C. Chuang*, J. E. Klemaszewski*, S. D. Kadel*, L. M. Prockter*, R. T. Pappalardo*, J. W. Head, III*, G. C. Collins*, N. A. Spaul*, R. J. Sullivan*, J. M. Moore*, D. A. Senske*, B. R. Tufts*, T. V. Johnson*, M. J. Belton* and K. L. Tanaka. Geologic mapping of Europa. *Journal of Geophysical Research, E, Planets*, in *Galileo Mission results from the icy Galilean satellites*. (J. W. Head, III, prefacer and others). v. 105, no. 9, September 25, 2000. p. 22,559-22,578.
- A. W. Green, E. W. Worthington, T. A. Plyasova-Bakounina*, A. Kormendi*, L. Hegymegi*, W. Goedecke* and Z. Voros*. Field line resonance studies in North America and Central Europe. *Geophysical Transactions = Geofizikai Közlemenyek = Geofizicheskiy Byulletin'*. v. 42, no. 3-4, 1999. p. 181-193.
- J. N. Grossman. A meteorite falls on ice. *Science*. v. 290, no. 5490, October 13, 2000. p. 283, 285.
- P. J. Haeussler, R. L. Bruhn* and T. L. Pratt. ALASKA. Potential seismic hazards and tectonics of the upper Cook Inlet basin, Alaska, based on analysis of Pliocene and younger deformation. *Geological Society of America Bulletin*. v. 112, no. 9, September 2000. p. 1414-1429.
- C. J. Hapke and B. M. Richmond. The development of a coastal aerial mapping system (CAMS) and its application to the study of coastal morphodynamics. *Coastal Sediments ... : Proceedings of the ... International Symposium on Coastal Engineering and Science of Coastal Sediment Processes*, in *Coastal sediments '99*. (N. C. Kraus, editor and others). 4, Vol. 3, 1999. p. 2398-2413.
- Cheryl Hapke and Bruce Richmond. Monitoring beach morphology changes using small-format aerial photography and digital softcopy photogrammetry. *Environmental Geosciences*. v. 7, no. 1, 2000. p. 32-37.
- A. J. Harris*, L. P. Flynn*, Ken Dean*, Eric Pilger*, Martin Wooster*, Chris Okubo*, P. J. Mougini-Mark*, Harold Garbeil*, Carl Thornber, Servando de la Cruz-Reyna*, D. A. Rothery* and Robert Wright*. Real-time satellite monitoring of volcanic hot spots. *Geophysical Monograph*, in *Remote sensing of active volcanism*. (P. J. Mougini-Mark, editor and others). 116, 2000. p. 139-159.
- Stephen Hartzell, David Carver, Edward Cranswick and A. D. Frankel. WASHINGTON. Variability of site response in Seattle, Washington. *Bulletin of the Seismological Society of America*. v. 90, no. 5, October 2000. p. 1237-1250.
- D. C. Heimann and M. J. Roell*. MISSOURI. Sediment loads and accumulation in a small riparian wetland system in northern Missouri. *Wetlands (Wilmington, NC)*. v. 20, no. 2, June 2000. p. 219-231.
- M. J. Herbel, T. M. Johnson*, R. S. Oremland and T. D. Bullen. Fractionation of selenium isotopes during bacterial respiratory reduction of selenium oxyanions. *Geochimica et Cosmochimica Acta*. v. 64, no. 21, November 2000. p. 3701-3709.
- T. G. Hildenbrand, Byron Berger, R. C. Jachens and Steve Ludington. Regional crustal structures and their relationship to the distribution of ore deposits in the Western United States, based on magnetic and gravity data. *Economic Geology and the Bulletin of the Society of Economic Geologists*. v. 95, no. 8, December 2000. p. 1583-1603.
- Wes Hildreth and Judy Fierstein. Katmai volcanic cluster and the great eruption 1912. *Geological Society of America Bulletin*. v. 112, no. 10, October 2000. p. 1594-1620.
- A. R. Hoch, M. M. Reddy and M. J. Heymans*. COLORADO. Transient calcite fracture fillings in a welded tuff, Snowshoe Mountain, Colorado. *Applied Geochemistry*. v. 15, no. 10, November 2000. p. 1495-1504.
- S. W. Hostetler, P. J. Bartlein*, P. U. Clark*, E. E. Small* and A. M. Solomon*. Simulated influences of Lake Agassiz on the climate of central North America 11,000 years ago. *Nature (London)*. v. 405, no. 6784, May 18, 2000. p. 334-336.
- M. R. Hudson, Marlo Mikolas*, J. W. Geissman* and B. D. Allen*. NEW MEXICO. Paleomagnetic and rock magnetic properties of



- Santa Fe Group sediments in the 98th Street core hole and correlative surface exposures, Albuquerque Basin, New Mexico. Guidebook - New Mexico Geological Society, *in* Albuquerque geology. (F. J. Pazzaglia, editor and others). 50, 1999. p. 355-361.
- R. M. Iverson, M. E. Reid, N. R. Iverson*, R. G. LaHusen, M. Logan, J. E. Mann* and D. L. Brien. Acute sensitivity of landslide rates to initial soil porosity. *Science*. v. 290, no. 5491, October 20, 2000. p. 513-516.
- J. A. Izbicki, J. Radyk and R. L. Michel. CALIFORNIA. Water movement through a thick unsaturated zone underlying an intermittent stream in the western Mojave Desert, Southern California, USA. *Journal of Hydrology*. v. 238, no. 3-4, December 5, 2000. p. 194-217.
- R. D. Jarrett and E. M. Tomlinson*. Regional interdisciplinary paleoflood approach to assess extreme flood potential. *Water Resources Research*. v. 36, no. 10, October 2000. p. 2957-2984.
- T. M. Johnson*, R. C. Roback*, T. L. McLing*, T. D. Bullen, D. J. DePaolo*, Christine Doughty*, R. J. Hunt, R. W. Smith*, L. D. Cecil and M. T. Murrell*. Groundwater "fast paths" in the Snake River Plain Aquifer; radiogenic isotope ratios as natural groundwater tracers. *Geology (Boulder)*. v. 28, no. 10, October 2000. p. 871-874.
- W. B. Joyner. Strong motion from surface waves in deep sedimentary basins, *in* The effects of surface geology on seismic motion; recent progress and new horizon on ESG study; Volume 2. (Kojiro Irikura, editor and others). Rotterdam: A. A. Balkema, 1998. p. 475-482.
- J. S. Kargel. Cryovolcanism on the icy satellites. Earth, Moon, and Planets, *in* Comparative planetology with an Earth perspective; proceedings of the First international conference. (M. T. Chahine, editor and others). v. 67, no. 1-3, 1995. p. 101-113.
- B. G. Katz, H. D. Hornsby* and J. F. Bohlke. FLORIDA. Sources of nitrate in water from springs and the upper Floridan Aquifer, Suwannee River basin, Florida. IAHS-AISH Publication, *in* Proceedings of an international symposium held during IUGG 99; Impact of land-use change on nutrient loads from diffuse sources. (Louise Heathwaite, editor). 257, 1999. p. 117-124.
- Jim Kauahikaua, Tom Hildenbrand and Mike Webring. HAWAII. Deep magmatic structures of Hawaiian volcanoes; imaged by three-dimensional gravity models. *Geology (Boulder)*. v. 28, no. 10, October 2000. p. 883-886.
- C. Kendall, M. K. Stewart*, U. Morgenstern*, V. Trompeter* and V. Bidwell*. Isotope and chemical tracers in groundwater hydrology Lower Hutt, NZ: Institute of Geological & Nuclear Sciences, 1999. variously paginated.
- D. E. Kile, R. L. Wershaw and C. T. Chiou. Correlation of soil and sediment organic matter polarity to aqueous sorption of nonionic compounds. *Environmental Science & Technology, ES & T*. v. 33, no. 12, June 15, 1999. p. 2053-2056.
- Myoung-Jin Kim*, Jerome Nriagu* and Sheridan Haack. MICHIGAN. Arsenic dissolution and speciation in groundwater of Southeast Michigan. *Metal Ions in Biology and Medicine = Les Ions Métalliques en Biologie et en Médecine*, *in* Proceedings of the sixth international symposium on Metal ions in biology and medicine. (J. A. Centeno and others). 6, May 2000. p. 41-43.
- E. R. King. Regional geophysics; aeromagnetics. Special Publication - Geological Survey of Pennsylvania, *in* The geology of Pennsylvania. (C. H. Shultz, editor). Report no. 1, 1999. p. 322-327.
- E. R. King and J. S. Duval. Regional geophysics; aeroradioactivity. Special Publication - Geological Survey of Pennsylvania, *in* The geology of Pennsylvania. (C. H. Shultz, editor). Report no. 1, 1999. p. 328-333.
- P. I. Kinnell*, R. L. Cooley, M. C. Hill, B. S. Rama Rao*, A. M. LaVenue*, Ghislain de Marsily* and M. G. Marietta*. Predicting interrill erodibility factor from measured infiltration rate. *Water Resources Research*. v. 36, no. 9, September 2000. p. 2793-2797, 2799-2803.
- Allan Kolker, H. E. Belkin and R. B. Finkelman. Determining the source(s) of metals in the environment using microanalysis. *Metal Ions in Biology and Medicine = Les Ions Métalliques en Biologie et en Médecine*, *in* Proceedings of the sixth international symposium on Metal ions in biology and medicine. (J. A. Centeno and others). 6, May 2000. p. 202-204.
- Dana Kolpin, Michael Burkart* and Donald Goolsby. Nitrate in groundwater of the midwestern United States; a regional investigation on relations to land use and soil properties. IAHS-AISH Publication, *in* Proceedings of an international symposium held during IUGG 99; Impact of land-use change on nutrient loads from diffuse sources. (Louise Heathwaite, editor). 257, 1999. p. 111-116.
- Hiroyuki Kumagai* and B. A. Chouet. Acoustic properties of a crack containing magmatic or hydrothermal fluids. *Journal of Geophysical Research, B, Solid Earth and Planets*. v. 105, no. 11, January 10, 2000. p. 25,493-25,512.
- E. R. Landis and J. N. Weaver. Global coal occurrence. *AAPG Studies in Geology*, *in* Hydrocarbons from coal. (B. E. Law, editor and others). 38, 1993. p. 1-12.
- J. E. Landmeyer, P. M. Bradley and J. M. Thomas. Biodegradation of disinfection byproducts as a potential removal process during aquifer storage recovery. *Journal of the American Water Resources Association*. v. 36, no. 4, August 2000. p. 861-867.
- K. J. Lanfear. The future of GIS and water resources. *Water Resources Impact*. v. 2, no. 5, September 2000. p. 9-11.
- B. E. Law and D. D. Rice (editors). Hydrocarbons from coal. *AAPG Studies in Geology*. 38, 1993. 400 p.
- K. J. Leib, W. G. Wright and M. A. Mast. Using flood-analysis techniques to estimate dissolved-zinc concentrations. *Proceedings of the ... International Conference on Tailings and Mine Waste, in* Tailings and mine waste '99. 6, 1999. p. 633-638.
- R. W. Leinz, S. J. Sutley and P. H. Briggs. The use of sequential extractions for the chemical speciation of mine wastes. *Proceedings of the ... International Conference on Tailings and Mine Waste, in* Tailings and mine waste '99. 6, 1999. p. 555-561.
- Richard Levine. Russia. *Mining Annual Review*. 1999, 1999. p. 181-197.
- Richard Levine. Kazakhstan. *Mining Annual Review*. 1999, 1999. p. 198-202.



- Richard Levine. Ukraine. Mining Annual Review. 1999, 1999. p. 209-212.
- E. V. Leyendecker, S. T. Algermissen and Arthur Frankel. Use of spectral response maps and uniform hazard response spectra in building codes. Proceedings of the U. S. National Conference on Earthquake Engineering, *in* Fifth U. S. national conference on Earthquake engineering; earthquake awareness and mitigation across the nation; proceedings. (Jamshid Mohammadi, editor and others). 5, Vol. 4, 1994. p. 379-387.
- Hong-Chun Li*, J. L. Bischoff, Teh-Lung Ku*, S. P. Lund* and L. D. Stott*. CALIFORNIA. Climate variability in east-central California during the past 1000 years reflected by high-resolution geochemical and isotopic records from Owens Lake sediments. Quaternary Research (New York). v. 54, no. 2, September 2000. p. 189-197.
- P. W. Lipman, T. W. Sisson, Tadahide Ui* and Jiro Naka*. In search of ancestral Kilauea Volcano. Geology (Boulder). v. 28, no. 12, December 2000. p. 1079-1082.
- J. B. Lowenstern, C. J. Janik, L. S. Fahlquist and L. S. Johnson. CALIFORNIA. A new compilation of gas and steam analyses from The Geysers geothermal field, California, USA. Proceedings of the New Zealand Geothermal Workshop, *in* Proceedings of the 21st New Zealand geothermal workshop 1999. (S. F. Simmons, compiler and others). 21, 1999. p. 55-60.
- J. B. Lowenstern, H. M. Persing, J. L. Wooden, M. Lanphere, J. Donnelly-Nolan and T. L. Grove*. U-Th dating of single zircons from young granitoid xenoliths; new tools for understanding volcanic processes. Earth and Planetary Science Letters. v. 183, no. 1-2, November 30, 2000. p. 291-302.
- Mitchell Lyle*, Itaru Koizumi*, M. L. Delaney and J. A. Barron*. Sedimentary record of the California Current system, middle Miocene to Holocene; a synthesis of Leg 167 results. Proceedings of the Ocean Drilling Program, Scientific Results, *in* Proceedings of the Ocean Drilling Program, scientific results, California margin; covering Leg 167 of the cruises of the drilling vessel JOIDES Resolution, Acapulco, Mexico, to San Francisco, California, sites 1010-1022, 20 April-16 June 1996. (Mitchell Lyle and others). 167, July 2000. p. 341-376.
- T. C. MacKinnon* and D. G. Howell. Turbidite facies in an ancient subduction complex; Torlesse Terrane, New Zealand. Geo-Marine Letters. v. 3, no. 2-4, 1983. p. 211-216.
- J. J. Major, T. C. Pierson, R. L. Dinehart and J. E. Costa. Sediment yield following severe volcanic disturbance; a two-decade perspective from Mount St. Helens. Geology (Boulder). v. 28, no. 9, September 2000. p. 819-822.
- Florian Maldonado, S. D. Connell*, D. W. Love*, V. J. Grauch, J. L. Slate, W. C. McIntosh*, P. B. Jackson* and F. M. Byers, Jr. NEW MEXICO. Neogene geology of the Isleta reservation and vicinity, Albuquerque Basin, central New Mexico. Guidebook - New Mexico Geological Society, *in* Albuquerque geology. (F. J. Pazzaglia, editor and others). 50, 1999. p. 175-188.
- Margaret Mangan and T. W. Sisson. Delayed, disequilibrium degassing in rhyolite magma; decompression experiments and implications for explosive volcanism. Earth and Planetary Science Letters. v. 183, no. 3-4, December 15, 2000. p. 441-455.
- T. R. Maret, C. T. Robinson* and G. W. Minshall*. Fish assemblages and environmental correlates in least-disturbed streams of the upper Snake River basin. Transactions of the American Fisheries Society (1900). v. 126, no. 2, March 1997. p. 200-216.
- M. A. Marsella*, L. D. Hothem and L. Vittuari*. An airborne GPS assisted photogrammetry pilot project in Antarctic. Terra Antarctica Reports, *in* Meeting on Antarctic glaciology and paleoclimate. 1, 1998. p. 51-56.
- J. F. McCauley, C. S. Breed, Bahay Issawi*, G. G. Schaber, Mohammed El-Hinnawi* and Ali El-Kelani*. Spaceborne Imaging Radar (SIR) geologic results in Egypt (a review; 1982-1997). Special Publication - Geological Survey of Egypt, *in* Proceedings of the Egyptian Geological Survey centennial conference. (G. M. Naim, chairperson). 75, 1998. p. 489-527.
- A. McGarr. Energy budgets of mining-induced earthquakes and their interactions with nearby stopes. International Journal of Rock Mechanics and Mining Sciences (1997), *in* Neville Cook special issue. (Chin-Fu Tsang, editor and others). v. 37, no. 1-2, February 2000. p. 437-443.
- J. M. McNeal. Metallic mineral deposits; nickel-copper deposit (Gap Mine). Special Publication - Geological Survey of Pennsylvania, *in* The geology of Pennsylvania. (C. H. Shultz, editor). Report no. 1, 1999. p. 574-581.
- S. Mehta*, A. E. Fryar*, R. M. Brady* and R. H. Morin. TEXAS. Modeling regional salinization of the Ogallala Aquifer, Southern High Plains, TX, USA. Journal of Hydrology. v. 238, no. 1-2, November 30, 2000. p. 44-64.
- R. C. Milici. Depletion of Appalachian coal reserves; how soon? International Journal of Coal Geology. v. 44, no. 3-4, September 2000. p. 251-266.
- D. M. Miller and D. R. Bedford. IDAHO. Pluton intrusion styles, roof subsidence and stoping, and timing of extensional shear zones in the City of Rocks National Reserve, Albion Mountains, southern Idaho. Utah Geological Association Publication, *in* Geology of northern Utah and vicinity. (L. E. Spangler, editor and others). 27, 1999. p. 11-26.
- R. E. Moran. Is this number to your liking? Water quality predictions in mining impact studies. *in* Prediction; science, decision making, and the future of nature. (Daniel Sarewitz, editor and others). Washington, DC: Island Press, 2000. p. 185-198.
- K. A. Morris*, J. F. Ranville*, D. L. Macalady* and K. S. Smith. COLORADO. Characterization of suspended sediments and colloids in Clear Creek, Colorado. Proceedings of the ... International Conference on Tailings and Mine Waste, *in* Tailings and mine waste '99. 6, 1999. p. 611-616.
- M. D. Morton*, F. H. Walters*, D. S. Aga, E. M. Thurman and C. K. Larive*. Nuclear magnetic resonance identification of new sulfonic acid metabolites of chloroacetanilide herbicides. Journal of Agricultural and Food Chemistry. v. 45, no. 4, 1997. p. 1240-1243.
- M. R. Mudge. MONTANA. General geology of Glacier National Park and adjacent areas, Montana. Bulletin of Canadian Petroleum Geology, *in* Cordilleran geology of southern Alberta and adjacent areas. (M. S. Shawa, editor). v. 25, no. 4, August 1977. p. 736-751.



- C. Mueller, A. Frankel, T. Barnhard, D. Perkins, E. V. Lyendecker, N. Dickman, S. Hanson and M. Hopper. The United States national seismic hazards maps, *in* Proceedings of the second international symposium on The effects of surface geology on seismic motion; recent progress and new horizon on ESG study; Volume 1. (Kojiro Irikura, editor and others). Rotterdam: A. A. Balkema, 1998. p. 189-198.
- D. R. Muhs and V. T. Holliday*. TEXAS, NEW MEXICO. Origin of late Quaternary dune fields on the Southern High Plains of Texas and New Mexico. *Geological Society of America Bulletin*. v. 113, no. 1, January 2001. p. 75-87.
- P. S. Murdoch, J. S. Baron and T. L. Miller. Effects of climate change on surface- and ground-water quality. *American Water Resources Association Technical Publication Series TPS*, *in* Proceedings; specialty conference on potential consequences of climate variability and change to water resources of the United States. (D. B. Adams, editor). 99-1, 1999. p. 201-208.
- B. T. Nolan and M. L. Clark. Selenium in irrigated agricultural areas of the Western United States. *Journal of Environmental Quality*. v. 26, no. 3, June 1997. p. 849-857.
- H. W. Olsen, E. N. Yearsley* and K. R. Nelson*. Chemico-osmosis versus diffusion-osmosis. *Transportation Research Record*. 1288, 1990. p. 15-22.
- R. S. Oremland, P. R. Dowdle, Shelly Hoeft, J. O. Sharp, J. K. Schaefer, L. G. Miller, Jodi Switzer Blum, R. L. Smith, N. S. Bloom* and Dirk Wallschlaeger*. CALIFORNIA. Bacterial dissimilatory reduction of arsenate and sulfate in meromictic Mono Lake, California. *Geochimica et Cosmochimica Acta*. v. 64, no. 18, September 2000. p. 3073-3084.
- Susan Owen*, Paul Segall*, Michael Lisowski*, Asta Miklius*, Roger Denlinger and Maurice Sako*. Rapid deformation of Kilauea Volcano; Global Positioning System measurements between 1990 and 1996. *Journal of Geophysical Research, B, Solid Earth and Planets*. v. 105, no. 8, August 10, 2000. p. 18,983-18,998.
- J. P. Owens. Cretaceous and Tertiary. Special Publication - Geological Survey of Pennsylvania, *in* The geology of Pennsylvania. (C. H. Shultz, editor). Report no. 1, 1999. p. 218-223.
- H. Ozturk*, H. Koral* and E. L. Geist. Intra-basinal water movements induced by faulting; the August 17, 1999, Golcuk (Izmit Bay) earthquake ($M_w = 7.4$). *Marine Geology*. v. 170, no. 3-4, November 2000. p. 263-270.
- F. L. Paillet and R. S. Reese. Integrating borehole logs and aquifer tests in aquifer characterization. *Ground Water*. v. 38, no. 5, October 2000. p. 713-725.
- J. F. Pankow*, N. R. Thomson*, R. L. Johnson*, A. L. Baehr and J. S. Zogorski. The urban atmosphere as a non-point source for the transport of MTBE and other volatile organic compounds (VOCs) to shallow groundwater. *Environmental Science & Technology*, ES & T. v. 31, no. 10, October 1997. p. 2821-2828.
- L. W. Pankratz, E. A. Sauter, A. Kormendi* and L. Hegyemegi*. The US-Hungarian Delta I-Delta D(DIDD) Quasi-Absolute Spherical Coil System; its history, evolution and future. *Geophysical Transactions = Geofizikai Kozlemenyek = Geofizicheskiy Byulletin'*. v. 42, no. 3-4, 1999. p. 195-202.
- C. C. Parnow, R. J. Goldfarb, K. D. Kelley, A. L. Meier and Geoff York. ALASKA. Trace element dispersion from tin deposits of the western Seward Peninsula, Alaska. *Proceedings of the ... International Conference on Tailings and Mine Waste*, *in* Tailings and mine waste '99. 6, 1999. p. 617-626.
- A. J. Paulson* and L. S. Balistrieri. Modeling removal of Cd, Cu, Pb, and Zn in acidic groundwater during neutralization by ambient surface waters and groundwaters. *Environmental Science & Technology*, ES & T. v. 33, no. 21, November 1, 1999. p. 3850-3856.
- F. J. Pazzaglia*, S. D. Connell*, John Hawley*, R. H. Tedford*, S. F. Personius, G. A. Smith*, S. M. Cather*, S. G. Lucas*, Patricia Hester*, John Gilmore* and L. A. Woodward*. Second-day trip 2 road log, from Albuquerque to San Ysidro, Loma Creston, La Ceja, and Sand Hill Fault. *Guidebook - New Mexico Geological Society*, *in* Albuquerque geology. (F. J. Pazzaglia, editor and others). 50, 1999. p. 47-66.
- M. F. Peck, J. S. Clarke, Camille Ransom, III* and C. J. Richards*. Potentiometric surface of the upper Floridan Aquifer in Georgia and adjacent parts of Alabama, Florida, and South Carolina, May 1998, and water-level trends in Georgia, 1990-98. *Hydrologic Atlas (Atlanta, Ga.)*, Report no. 22, 1999. 1 sheet.
- M. R. Perfit*, W. I. Ridley and I. R. Jonasson*. Geologic, petrologic, and geochemical relationships between magmatism and massive sulfide mineralization along the eastern Galapagos spreading center. *Reviews in Economic Geology*, *in* Volcanic-associated massive sulfide deposits; processes and examples in modern and ancient settings. (C. T. Barrie and others). 8, 1999. p. 75-100.
- S. F. Personius, M. N. Machette and K. I. Kelson*. Quaternary faults in the Albuquerque area; an update. *Guidebook - New Mexico Geological Society*, *in* Albuquerque geology. (F. J. Pazzaglia, editor and others). 50, 1999. p. 189-200.
- N. E. Peters and Robert Donohue*. Nutrient concentrations and fluxes in tributaries to the Swan-Canning Estuary, Western Australia. *IAHS-AISH Publication*, *in* Proceedings of an international symposium held during IUGG 99; Impact of land-use change on nutrient loads from diffuse sources. (Louise Heathwaite, editor). 257, 1999. p. 87-94.
- M. D. Petersen, C. H. Cramer, M. S. Reichle, A. D. Frankel and T. C. Hanks. CALIFORNIA. Discrepancy between earthquake rates implied by historic earthquakes and a consensus geologic source model for California. *Bulletin of the Seismological Society of America*. v. 90, no. 5, October 2000. p. 1117-1132.
- D. L. Peterson, D. G. Silsbee and K. T. Redmond*. OREGON. Detecting long-term hydrological patterns at Crater Lake, Oregon. *Northwest Science*. v. 73, no. 2, May 1999. p. 121-130.
- D. Z. Piper and C. M. Isaacs. Instability of bottom-water redox conditions during accumulation of Quaternary sediment in the Japan Sea. *Paleoceanography*. v. 11, no. 2, April 1996. p. 171-190.
- D. W. Rankin and A. A. Drake, Jr. Memorial to Gilbert Howry Espenshade, 1912-1993. *Memorials - Geological Society of America*. 29, 1999. p. 89-92.
- A. F. Redkin* and J. J. Hemley. Experimental Cs and Sr sorption on analcime in rock-buffered systems at 250-300°C and P_{sat} and the thermodynamic evaluation of mineral solubilities and phase rela-



- tions. *European Journal of Mineralogy*. v. 12, no. 5, October 2000. p. 999-1014.
- J. H. Reynolds*, C. I. Galli*, R. M. Hernández*, B. D. Idleman*, J. M. Kotila*, R. V. Hilliard* and C. W. Naeser. Middle Miocene tectonic development of the transition zone, Salta Province, Northwest Argentina; magnetic stratigraphy from the Metán Subgroup, Sierra de González. *Geological Society of America Bulletin*. v. 112, no. 11, November 2000. p. 1736-1751.
- D. D. Rice. Composition and origins of coalbed gas. *AAPG Studies in Geology*, in *Hydrocarbons from coal*. (B. E. Law, editor and others). 38, 1993. p. 159-184.
- D. D. Rice and W. A. Cobban. MONTANA. Cretaceous stratigraphy of the Glacier National Park area, northwestern Montana. *Bulletin of Canadian Petroleum Geology*, in *Cordilleran geology of southern Alberta and adjacent areas*. (M. S. Shaw, editor). v. 25, no. 4, August 1977. p. 828-841.
- K. C. Rice. Trace-element concentrations in streambed sediment across the conterminous United States. *Environmental Science & Technology*, ES & T. v. 33, no. 15, August 1, 1999. p. 2499-2504.
- K. C. Rice and L. E. Spangler. UTAH. Hydrology and geochemistry of carbonate springs in Mantua Valley, northern Utah. *Utah Geological Association Publication*, in *Geology of northern Utah and vicinity*. (L. E. Spangler, editor and others). 27, 1999. p. 337-352.
- S. A. Richmond and J. F. Braddock*. ALASKA. Geochemical characterization of anaerobic ground water in subarctic Alaska. *American Water Resources Association Technical Publication Series TPS*, in *Proceedings; AWRA's spring specialty conference; Water resources in extreme environments*. (D. L. Kane, editor). 00-1, 2000. p. 141-145.
- E. I. Robbins and M. C. Cuomo*. Criteria for recognition of fecal pellets in palynological preparations. *Program and Abstracts - American Association of Stratigraphic Palynologists. Meeting*, in *The American Association of Stratigraphic Palynologists; 23rd annual meeting; program and abstracts*. 23, 1990 unpaginated.
- Joaquin Ruiz*, R. M. Tosdal, P. A. Restrepo* and Gustavo Murillo-Muñetón*. Pb isotope evidence for Colombia-southern Mexico connections in the Proterozoic. *Special Paper - Geological Society of America*, in *Laurentia-Gondwana connections before Pangea*. (V. A. Ramos, editor and others). 336, 1999. p. 183-197.
- A. H. Sallenger, Jr., Peter Howd*, John Brock, W. B. Krabill*, R. N. Swift*, Serdar Manizade* and M. Duffy*. MARYLAND, VIRGINIA. Scaling winter storm impacts on Assateague Island, MD, VA. *Coastal Sediments ... : Proceedings of the ... International Symposium on Coastal Engineering and Science of Coastal Sediment Processes*, in *Coastal Sediments '99*. (N. C. Kraus, editor and others). 4, Vol. 3, 1999. p. 1814-1825.
- J. C. Savage. Viscoelastic-coupling model for the earthquake cycle driven from below. *Journal of Geophysical Research, B, Solid Earth and Planets*. v. 105, no. 11, January 10, 2000. p. 25,525-25,532.
- G. G. Schaber, J. F. McCauley, C. S. Breed and Bahay Issawi*. The application of space shuttle radar-C data (SIR-C/X-SAR) to geologic studies of Bir Safsaf, Egypt. *Special Publication - Geological Survey of Egypt*, in *Proceedings of the Egyptian Geological Survey centennial conference*. (G. M. Naim, chairperson). 75, 1998. p. 727-758.
- D. J. Schneider*, K. G. Dean*, J. Dehn*, T. P. Miller and V. Y. Kirianov*. ALASKA. Monitoring and analyses of volcanic activity using remote sensing data at the Alaska Volcano Observatory; case study for Kamchatka, Russia, December 1997. *Geophysical Monograph*, in *Remote sensing of active volcanism*. (P. J. Mouginitis-Mark, editor and others). 116, 2000. p. 65-85.
- M. A. Scholl. Effects of heterogeneity in aquifer permeability and biomass on biodegradation rate calculations; results from numerical simulations. *Ground Water*. v. 38, no. 5, October 2000. p. 702-712.
- J. H. Schuenemeyer and L. J. Drew. Uncovering influences on the form of oil and gas field size distributions. *Natural Resources Research (International Association for Mathematical Geology)*. v. 8, no. 1, March 1999. p. 37-47.
- D. S. Sheppard* and A. H. Truesdell. A GC-system for the analysis of residual geothermal gases. *Chromatographia*. v. 20, no. 11, 1985. p. 681-682.
- R. A. Sheppard and G. J. Simandl*. Open-system zeolites. *Open File - British Columbia. Geological Survey Branch*, in *Selected British Columbia mineral deposit profiles; Volume 3, Industrial minerals and gemstones*. (G. J. Simandl, editor and others). Report no. 1999-10, November 1999. p. 19-22.
- R. A. Sheppard and G. J. Simandl*. Closed-basin zeolites. *Open File - British Columbia. Geological Survey Branch*, in *Selected British Columbia mineral deposit profiles; Volume 3, Industrial minerals and gemstones*. (G. J. Simandl, editor and others). Report no. 1999-10, November 1999. p. 23-26.
- E. A. Shinn, G. W. Smith*, J. M. Prospero*, Peter Betzer*, M. L. Hayes*, Virginia Garrison* and R. T. Barber*. African dust and the demise of Caribbean coral reefs. *Geophysical Research Letters*. v. 27, no. 19, October 1, 2000. p. 3029-3032.
- S. R. Silva, T. D. Bullen and E. R. Brooks*. Devonian Sierra Buttes Formation in the Jamison Lake area; involvement of ancient continental crust in magma genesis. *Special Publication - California Department of Conservation, Division of Mines and Geology*, in *Field guide to the geology and tectonics of the northern Sierra Nevada*. (E. R. Brooks, editor and others). Report no. 122, 2000. p. 16-52.
- G. J. Simandl*, G. E. Ray*, S. Paradis* and G. J. Orris. Wollastonite skarns. *Open File - British Columbia. Geological Survey Branch*, in *Selected British Columbia mineral deposit profiles; Volume 3, Industrial minerals and gemstones*. (G. J. Simandl, editor and others). Report no. 1999-10, November 1999. p. 53-56.
- D. A. Singer and Ryoichi Kouda*. Examining risk in mineral exploration. *Natural Resources Research (International Association for Mathematical Geology)*. v. 8, no. 2, June 1999. p. 111-122.
- Les Sirkin* and J. P. Owens. VIRGINIA, MARYLAND. Palynology of latest Neogene (middle Miocene to late Pliocene) strata in the Delmarva Peninsula of Maryland and Virginia. *North-eastern Geology and Environmental Sciences*. v. 20, no. 2, 1998. p. 117-132.



- J. F. Slack and W. F. Cannon. Memorial to Jacob E. "Jack" Gair, 1922-1998. *Memorials - Geological Society of America*. 29, 1999. p. 65-67.
- K. S. Smith, P. J. Lamothe, A. L. Meier, Katherine Walton-Day and J. F. Ranville*. COLORADO. Metal leaching through a fluvial tailings deposit along the upper Arkansas River, Colorado. *Proceedings of the ... International Conference on Tailings and Mine Waste, in Tailings and mine waste '99*. 6, 1999. p. 627-632.
- J. P. Smoot. Early Mesozoic; sedimentary rocks. Special Publication - Geological Survey of Pennsylvania, *in The geology of Pennsylvania*. (C. H. Shultz, editor). Report no. 1, 1999. p. 180-201.
- Walter Steblez. Republics of the former Yugoslavia. *Mining Annual Review*. 1999, 1999. p. 34-37.
- J. H. Stewart, R. B. Blodgett*, A. J. Boucot*, J. L. Carter* and Robert López*. Exotic Paleozoic strata of Gondwanan provenance near Ciudad Victoria, Tamaulipas, Mexico. Special Paper - Geological Society of America, *in Laurentia-Gondwana connections before Pangea*. (V. A. Ramos, editor and others). 336, 1999. p. 227-252.
- C. D. Storlazzi* and M. E. Field. CALIFORNIA. Sediment distribution and transport along a rocky, embayed coast; Monterey Peninsula and Carmel Bay, California. *Marine Geology*. v. 170, no. 3-4, November 2000. p. 289-316.
- R. P. Stumpf*, K. L. Morgan, Russell Peterson, M. D. Krohn and A. H. Sallenger. NORTH CAROLINA. Mapping impacts of hurricanes Fran and Bertha on North Carolina dunes. *Coastal Sediments ... : Proceedings of the ... International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, in Coastal sediments '99*. (N. C. Kraus, editor and others). 4, Vol. 3, 1999. p. 1826-1835.
- Robert Sullivan*, Ronald Greeley*, Michael Kraft*, Gregory Wilson*, Matthew Golombek*, Ken Herkenhoff, James Murphy* and Peter Smith*. Results of the Imager for Mars Pathfinder windssock experiment. *Journal of Geophysical Research, E, Planets*. v. 105, no. 10, October 25, 2000. p. 24,547-24,562.
- Nicola Surian* and E. D. Andrews. COLORADO. Estimation of geomorphically significant flows in alpine streams of the Rocky Mountains, Colorado (USA). *Regulated Rivers*. v. 15, no. 4, August 1999. p. 273-288.
- D. T. Symons*, M. T. Lewchuk*, C. D. Taylor and M. J. Harris*. COLORADO. Age of the sherman-type Zn-Pb-Ag deposits, Mosquito Range, Colorado. *Economic Geology and the Bulletin of the Society of Economic Geologists*. v. 95, no. 7, November 2000. p. 1489-1504.
- E. R. Thieler, P. T. Gayes*, W. C. Schwab and M. S. Harris*. Tracing sediment dispersal on nourished beaches; two case studies. *Coastal Sediments ... : Proceedings of the ... International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, in Coastal sediments '99*. (N. C. Kraus, editor and others). 4, Vol. 3, 1999. p. 2118-2136.
- K. F. Tiampo*, J. B. Rundle*, J. Fernandez* and J. O. Langbein. CALIFORNIA. Spherical and ellipsoidal volcanic sources at Long Valley Caldera, California, using a genetic algorithm inversion technique. *Journal of Volcanology and Geothermal Research*. v. 102, no. 3-4, November 2000. p. 189-206.
- Shinji Toda* and R. S. Stein. Did stress triggering cause the large off-fault aftershocks of the 25 March 1998 $M_w = 8.1$ Antarctic Plate earthquake? *Geophysical Research Letters, in 1998 Antarctic earthquake*. v. 27, no. 15, August 1, 2000. p. 2301-2304.
- Pui-Kwan Tse. China. *Mining Annual Review*. 1999, 1999. p. 152-158.
- Christine Turner and E-an Zen. Engaging "my neighbor" in the issue of sustainability; Part IX, We live in a world of change. *GSA Today*. v. 10, no. 9, September 2000. p. 9.
- M. P. Tuttle* and E. S. Schweig. Towards a paleoearthquake chronology for the New Madrid seismic zone. *Seismotectonics of the central U.S. 1997*. unpaginated. *Available from: U. S. Geological Survey, Library, Reston, VA, United States*.
- Alexander van Geen*, R. G. Fairbanks*, P. Dartnell, M. McGann, J. V. Gardner and M. Kashgarian*. Ventilation changes in the Northeast Pacific during the last deglaciation. *Paleoceanography*. v. 11, no. 5, October 1996. p. 519-528.
- R. B. Vaughn, R. J. Horton, M. R. Stanton, D. L. Fey, S. J. Sutley and P. M. Theodorakos. Antfarms; mine dump simulation studies in the laboratory. *Proceedings of the ... International Conference on Tailings and Mine Waste, in Tailings and mine waste '99*. 6, 1999. p. 465-474.
- R. B. Vaughn, M. R. Stanton and R. J. Horton. A year in the life of a mine dump; a diachronic case study. *Proceedings of the ... International Conference on Tailings and Mine Waste, in Tailings and mine waste '99*. 6, 1999. p. 475-484.
- D. A. Vroblesky, C. T. Nietch* and J. T. Morris*. Chlorinated ethenes from groundwater in tree trunks. *Environmental Science & Technology, ES & T*. v. 33, no. 3, February 1, 1999. p. 510-515.
- Debbie Warner and B. T. Aulenbach. GEORGIA. Hydraulic characteristics of the upper Floridan Aquifer in the Savannah and St. Marys area of coastal Georgia. *Information Circular - Georgia Geologic Survey, Report no. 105*, 1999. 23 p.
- P. Westerhoff* and D. Anning. ARIZONA. Concentrations and characteristics of organic carbon in surface water in Arizona; influence of urbanization. *Journal of Hydrology*. v. 236, no. 3-4, September 30, 2000. p. 202-222.
- R. A. Williams, W. J. Stephenson, A. D. Frankel, Edward Cranswick, M. E. Meremonte and J. K. Odum. Correlation of 1- to 10-Hz earthquake resonances with surface measurements of S-wave reflections and refractions in the upper 50 m. *Bulletin of the Seismological Society of America*. v. 90, no. 5, October 2000. p. 1323-1331.
- S. C. Williams-Stroud, J. P. Searls* and R. J. Hite. Potash resources, *in Industrial minerals and rocks*. (D. D. Carr, editor). Littleton, CO: Society for Mining, Metallurgy and Exploration, 1994. p. 783-802.
- S. A. Wolfe*, D. R. Muhs, P. P. David* and J. P. McGeehin. Chronology and geochemistry of late Holocene eolian deposits in the Brandon Sand Hills, Manitoba, Canada. *Quaternary International, in Holocene environmental change on the Great Plains of North America*. (S. A. Wolfe, editor and others). 67, 2000. p. 61-74.
- W. G. Wright and D. K. Nordstrom. Oxygen isotopes of dissolved sulfate as a tool to distinguish natural and mining-related dissolved

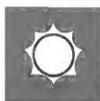


- constituents. Proceedings of the ... International Conference on Tailings and Mine Waste, *in* Tailings and mine waste '99. 6, 1999. p. 671-678.
- R. M. Yager, S. E. Bilotta*, C. L. Mann* and E. L. Madsen*. NEW YORK. Metabolic adaptation and in situ attenuation of chlorinated ethenes by naturally occurring microorganisms in a fractured dolomite aquifer near Niagara Falls, New York. *Environmental Science & Technology*, ES & T. v. 31, no. 11, November 1997. p. 3138-3147.
- Daqing Yang*, D. L. Kane*, L. D. Hinzman*, B. E. Goodison*, J. R. Metcalfe*, P. Y. Louie*, G. H. Leavesley, D. G. Emerson and C. L. Hanson*. WYOMING. An evaluation of the Wyoming gauge system for snowfall measurement. *Water Resources Research*. v. 36, no. 9, September 2000. p. 2665-2677.
- E-an Zen. Engaging "my neighbor" in the issue of sustainability; Part X, What do we mean by a sustainable world? *GSA Today*. v. 10, no. 10, October 2000. p. 40.
- E-an Zen, A. R. Palmer* and P. H. Reitan*. Engaging "my neighbor" in the issue of sustainability; Part XII, We have the option of choice; the future is up to us. *GSA Today*. v. 10, no. 12, December 2000. p. 24.
- Zhou Yiping*, B. F. Bohor and Youliang Ren*. Trace element geochemistry of altered volcanic ash layers (tonsteins) in Late Permian coal-bearing formations of eastern Yunnan and western Guizhou provinces, China. *International Journal of Coal Geology*. v. 44, no. 3-4, September 2000. p. 305-324.

ABSTRACTS

Abstracts are condensed but informative summaries of presentations made at meetings of scientific and professional organizations. Typically they summarize the principal conclusions of an author's current work but contain little supporting data. Non-USGS personnel who share authorship in abstracts with USGS personnel are indicated by an asterisk (*) immediately following the name. **These publications are not available from the U.S. Geological Survey.**

- C. C. Abston. The Circum-Pacific Geospatial Data Project on geological correlation in East and Southeast Asia; databases [abstr.] *AAPG Bulletin*, *in* AAPG international conference and exhibition; abstracts. v. 84, no. 9, September 2000. p. 1395-1396.
- Mohammad Al-Gailani*, M. D. Lewan and T. S. Ahlbrandt. Sulfur versus API-gravity relationships of Iraqi crude oils [abstr.] *GeoArabia* (Manama), *in* GEO'98, 3rd Middle East geoscience conference and exhibition; The Middle East, catalyst for E&P technology; conference abstracts. (M. I. Al-Husseini, editor). v. 3, no. 1, March 1998. p. 49-50.
- T. R. Alpha and R. V. Lugo. MISSOURI. Lewis and Clark's first great hurdle; the Great Falls of the Missouri [abstr.] *Abstracts with Programs - Geological Society of America*, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 197.
- L. A. Anderson. HAWAII. Self-potential investigations in the Puhimau thermal area, Kilauea Volcano, Hawaii [abstr.] *SEG Abstracts*, *in* Society of Exploration Geophysicists, 54th annual meeting. v. 1984, no. 1, 1984. p. 84-86.
- Viki Bankey, D. J. Bove, M. J. Crane, W. C. Day, D. H. Knepper, Jr., R. P. Kucks, D. A. Lindsey, W. R. Miller and K. C. Oshetski. COLORADO. Mineral resource and environmental studies for federal land-use planning of public lands on the western slope, Colorado [abstr.] *Abstracts with Programs - Geological Society of America*, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 197-198.
- C. E. Barker and M. D. Lewan. The effect of supercritical water on vitrinite reflectance as observed in contact metamorphism and pyrolysis experiments [abstr.] *Abstracts of Papers - American Chemical Society, National Meeting*, *in* American Chemical Society 217th national meeting; abstracts of papers. v. 217, no. Part 1, March 1999 unpaginated.
- M. J. Belton*, J. Veverka*, P. C. Thomas*, C. R. Chapman*, K. P. Klaasen*, G. Neukum*, A. S. McEwen, J. W. Head*, M. Davies*, Ronald Greeley*, R. Greenberg*, C. B. Pilcher*, D. Morrison*, A. P. Ingersoll*, F. P. Fanale* and J. V. Johnson*. The Galileo SSI experiment at Gaspra; overview and expectations [abstr.] *Abstracts of Papers Submitted to the Lunar and Planetary Science Conference*, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 83.
- B. R. Berger, L. W. Snee and J. V. Tingley*. NEVADA, CALIFORNIA. Implications of new structural and 40Ar/39Ar data on hydraulic evolution of epithermal veins and ore formation, Aurora and Bodie mining districts, Nevada-California [abstr.] *Abstracts with Programs - Geological Society of America*, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 94.
- B. F. Bohor and W. J. Betterton. Ejection and dispersal mechanisms of the K/T impact [abstr.] *Abstracts of Papers Submitted to the Lunar and Planetary Science Conference*, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 135-136.
- B. F. Bohor, R. Brett, R. A. Grieve* and D. Stöfler*. No evidence of shock metamorphism in Cuba at K/T boundary [abstr.] *Abstracts of Papers Submitted to the Lunar and Planetary Science Conference*, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 137-138.
- M. H. Bothner, Bradford Butman, Marilyn Buchholtz-ten Brink, H. J. Knebel, F. T. Manheim and R. P. Signell. USGS addressing science and management questions in Boston Harbor and Massachusetts Bay [abstr.] *Abstracts with Programs - Geological Society of America*, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 198.
- D. Cacchione, P. Wiberg*, J. Lynch, J. Irish and P. Traykovski*. CALIFORNIA. Estimates of suspended-sediment flux and bedform activity on the inner shelf off Northern California during STRATAFORM [abstr.], *in* 15th international sedimentological congress; sedimentology at the dawn of the third millennium; abstracts. (J. C. Cañaveras, editor and others). Alicante: Univ. Alicante, 1998. p. 223.
- D. L. Campbell and K. R. Vincent. COLORADO. Geophysical surveys along a line trenched across the Animas River valley, Colorado [abstr.] *Abstracts with Programs - Geological Society of America*, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 76.
- M. H. Carr. Post-Noachian erosion rates; implications for Mars climate change [abstr.] *Abstracts of Papers Submitted to the Lunar and Planetary Science Conference*, *in* Abstracts of papers submit-



- ted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 205-206.
- D. J. Chadwick, Baerbel Lucchitta and Paul Morgan*. Fault dips in the Valles Marineris; a photogrammetric study [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 211-212.
- D. J. Chadwick, G. G. Schaber, H. J. Moore and R. G. Strom*. Bright crater outflows on Venus [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 213-214.
- C. R. Chapman*, D. R. Davis*, G. Neukum*, J. Veverka*, M. J. Belton*, T. V. Johnson*, D. Morrison* and A. S. McEwen. 951 Gaspra; preliminary Galileo SSI results on craters, collisions, and regolith [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 219-220.
- M. G. Chapman. Geologic mapping of the Granicus Valles area, Mars [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 221-222.
- George Claypool*, Leslie Magoon, Thomas Lorenson, Zenon Valin, Augusta Warden, Paul Lillis and Isaac Kaplan*. CALIFORNIA. Natural gas in the Great Valley of California; characterization, origin and petroleum systems [abstr.] AAPG Bulletin, *in* 2000 AAPG Pacific Section and Western Region Society of Petroleum Engineers meeting; abstracts. v. 84, no. 6, June 2000. p. 863.
- J. C. Cole, B. D. Stone, D. A. Sawyer, V. J. Grauch, S. D. Connell, M. R. Hudson, S. A. Minor, S. F. Personius and B. D. Rodriguez. NEW MEXICO. Geologic mapping and three-dimensional geologic modeling of aquifer systems in the Rio Grande Rift, central New Mexico [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 80.
- R. L. Cooley. Calibration and uncertainty analysis for ground-water models of heterogeneous systems [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 85.
- K. M. Cuffey* and G. D. Clow. Influence of basal debris entrainment on the flow of cold ice sheets [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 203.
- C. G. Cunningham, T. A. Steven and J. D. Rasmussen*. UTAH. Volcanogenic uranium deposits associated with Mount Belknap Volcanics, Marysvale volcanic field, west-central Utah [abstr.] AAPG Bulletin, *in* AAPG Southwest Section, annual meeting; abstracts of papers. v. 65, no. 4, April 1981. p. 757.
- Daphne Darden. MISSISSIPPI. Historical development of cones of depression in four major aquifers in Mississippi [abstr.] Journal of the Mississippi Academy of Sciences. v. 31, no. Suppl. 1986. p. 38.
- J. D. DeBraal*, M. H. Reed and G. S. Plumlee*. Preliminary results of computer modeled near °C water-rock interactions at the Martian surface [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 287-288.
- J. T. Dutro, Jr. The Circum-Pacific geospatial data project on geological correlation in East and Southeast Asia; biostratigraphy [abstr.] AAPG Bulletin, *in* AAPG international conference and exhibition; abstracts. v. 84, no. 9, September 2000. p. 1420.
- L. E. Edwards and L. E. Stover*. Selected Mesozoic dinocyst genera; analysis of paratabulation patterns and possible developmental trends [abstr.] Program and Abstracts - American Association of Stratigraphic Palynologists. Meeting, *in* The American Association of Stratigraphic Palynologists; 23rd annual meeting; program and abstracts. 23, 1990 unpaginated.
- C. C. Faunt, F. A. D'Agnesi and M. C. Hill. NEVADA, CALIFORNIA. Hydrogeologic-framework and groundwater-flow models of the Death Valley region, Nevada and California [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 86.
- M. N. Fienen*, G. G. Schaber and K. L. Tanaka. Experimental mapping of the V36 quadrangle of Venus, based on Magellan data [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 353-354.
- C. A. Finn, J. Velez*, M. Pilkington*, W. Miles*, I. Hernandez*, R. Kucks, R. Saltus, V. Bankey and P. Hill. First products of the North American magnetic anomaly database program [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 97.
- Carol Finn, Detlef Damaske*, Tim Mackey* and D. H. Moore*. The aeromagnetic connection; a new look at the Gondwana geology of Antarctica and Australia [abstr.] Abstracts - Geological Society of Australia, *in* Geoscience for the new millennium; abstracts. 49, 1998. p. 145.
- E. M. Fischer*, C. M. Pieters*, A. S. McEwen, J. W. Head* and M. J. Belton*. Lunar highland soil heterogeneity; Al/Si estimated for the limb and farside from Galileo SSI and Apollo X-ray spectrometer data [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 361-362.
- D. V. Fitterman and W. L. Anderson. Effect of transmitter turnoff characteristics on transient soundings [abstr.] SEG Abstracts, *in* Society of Exploration Geophysicists, 54th annual meeting. v. 1984, no. 1, 1984. p. 69-71.
- F. C. Frischknecht and P. V. Raab. Magnetic anomalies from petroleum wells [abstr.] SEG Abstracts, *in* Society of Exploration Geophysicists, 54th annual meeting. v. 1984, no. 1, 1984. p. 234-236.
- Lisa Gaddis, A. S. McEwen, C. M. Pieters*, J. Sunshine* and Ronald Greeley*. Observations of lunar pyroclastic deposits with Galileo SSI multispectral data [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 391-392.



- M. W. Gannett and K. E. Lite, Jr.*. Simulation of regional ground-water flow in a young volcanic terrane using inverse methods [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 86.
- Hal Gluskoter. Increase in fossil fuel utilization the twenty-first century; environmental impact and lower carbon alternatives [abstr.] Abstracts of Papers - American Chemical Society, National Meeting, *in* American Chemical Society 217th national meeting; abstracts of papers. v. 217, no. Part 1, March 1999 unpaginated.
- Hal Gluskoter. Coal quality and coal utilization in the twenty-first century [abstr.] Abstracts of Papers - American Chemical Society, National Meeting, *in* American Chemical Society 217th national meeting; abstracts of papers. v. 217, no. Part 1, March 1999 unpaginated.
- R. I. Hackney*, U. S. ten Brink, T. A. Stern* and S. Bannister*. Subglacial geology and upper mantle processes adjacent to the Transantarctic Mountains inferred from geophysical data [abstr.] Geophysics Down Under, *in* Abstract volume of the Marysville conference on Geological structures and their geophysical signatures. (Australia, Geological Society, Specialist Group on Solid-Earth Geophysics). 24, 1997. p. 31.
- E. L. Harp, R. L. Baum, W. T. Laprade* and K. Conradi*. WASHINGTON. Government-private partnership in mapping landslide hazards in Seattle, Washington [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 195.
- W. P. Hasbrouck. Shear-wave studies using a hammer-impact source [abstr.] SEG Abstracts, *in* Society of Exploration Geophysicists, 54th annual meeting. v. 1984, no. 1, 1984. p. 600-604.
- W. P. Hasbrouck. Five shallow seismic feasibility surveys [abstr.] SEG Abstracts, *in* Society of Exploration Geophysicists, 58th annual meeting. v. 1988, no. 1, 1988. p. 286-289.
- P. Helfenstein*, J. Veverka*, P. C. Thomas*, D. P. Simonelli*, B. Carcich*, A. S. McEwen, J. W. Head*, S. Murchie*, C. R. Chapman*, M. S. Belton*, K. P. Klaasen* and F. P. Fanale*. 951 Gaspra; preliminary albedos from Galileo images [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 519-520.
- J. A. Hevesi, A. L. Flint, L. E. Flint, F. A. D'Agnese and C. C. Faunt. Application of watershed modeling for estimation of spatially and temporally distributed recharge [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 87.
- J. F. Hicks*, K. R. Johnson*, Lisa Tauxe*, David Clark* and J. D. Obradovich. NORTH DAKOTA. Geochronology of the Hell Creek Formation of southwestern North Dakota; a multidisciplinary approach using biostratigraphy, isotopic dating, geochemistry, and magnetostratigraphy [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 71.
- R. J. Hofmeister*, Yumei Wang* and D. K. Keefer. OREGON. GIS mapping of earthquake-induced slope instability hazards; adapting a methodology in Salem, Oregon [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 195.
- R. W. Hutchinson*, Zhao Rusong*, Han Fa* and R. E. Zartman. Origin of ores in the Dachang tin-polymetallic ore field [abstr.] International Geological Congress, Abstracts = Congrès Géologique International, Résumés, *in* 30th international geological congress; abstracts. 30, Vol. 2, 1996. p. 790.
- R. C. Jacques*, C. Spötl* and D. W. Houseknecht. Graphitization of kerogen in the Arkoma Basin, USA; an integrated organic petrography, X-ray diffraction and Raman spectrometric study [abstr.] Terra Abstracts, *in* European Union of Geosciences 8; oral and poster presentations. 7, Suppl. 1, 1995. p. 129.
- R. W. Jibson, E. L. Harp and J. A. Michael. A modeling procedure to produce probabilistic seismic landslide hazard maps [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 195.
- R. H. Johnson*, Kristen Sneddon*, Gary Olhoeft*, Eileen Poeter*, John McCray* and Michael Powers. The simultaneous use of inverse modeling and ground penetrating radar data to enable the successful use of DNAPL flow models for design of remedial action [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 86.
- S. J. Kalkhoff. MISSISSIPPI. Oil-field brine disposal effects on shallow ground-water and stream-water quality in Mississippi [abstr.] Journal of the Mississippi Academy of Sciences. v. 30, no. Suppl. 1985. p. 36.
- Margaret Keller and Joe Macquaker*. ALASKA. Rock-Eval and petrographic results for a Lower Cretaceous, subsurface mudstone succession, northeastern Alaska; implications for petroleum source potential and provenance [abstr.] AAPG Bulletin, *in* 2000 AAPG Pacific Section and Western Region Society of Petroleum Engineers meeting; abstracts. v. 84, no. 6, June 2000. p. 877.
- K. D. Kelley, H. J. Stein, L. W. Snee, D. W. Beaty* and T. B. Thompson*. COLORADO. Genesis of epithermal gold-telluride deposits and associated alkaline igneous rocks in the Cripple Creek District, Colorado, Western U.S. [abstr.] International Geological Congress, Abstracts = Congrès Géologique International, Résumés, *in* 30th international geological congress; abstracts. 30, Vol. 2, 1996. p. 796.
- J. L. Kindinger, J. B. Davis* and J. G. Flocks. FLORIDA. Evolution of sinkhole lakes in north-central Florida [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 76-77.
- P. T. Kolesar* and A. C. Riggs. NEVADA. Form and formation; speleothems in Devils Hole, a tectonic cave in southern Nevada [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 90.
- M. J. Kotarba*, J. L. Clayton and D. D. Rice. Origin of coalbed gases in the Polish Upper Carboniferous coal basins; isotopic and geological approach [abstr.] International Geological Congress, Abstracts = Congrès Géologique International, Résumés, *in* 30th international geological congress; abstracts. 30, Vol. 2, 1996. p. 814.



- V. F. Labson, F. C. Frischknecht and A. Becker. A portable tensor magnetotelluric receiver design and field test [abstr.] SEG Abstracts, *in* Society of Exploration Geophysicists, 54th annual meeting. v. 1984, no. 1, 1984. p. 99-102.
- M. D. Lewan. Timing and extent of petroleum formation as determined by Rock-Eval and hydrous-pyrolysis kinetic parameters [abstr.] AAPG Bulletin, *in* AAPG international conference and exhibition; abstracts. v. 84, no. 9, September 2000. p. 1454.
- J. C. Liddicoat*, J. E. Hazel and E. M. Brouwers. ARKANSAS, TEXAS. Magnetostratigraphy of Upper Cretaceous deposits in southwestern Arkansas and northeastern Texas [abstr.] AAPG Bulletin, *in* AAPG Southwest Section, annual meeting; abstracts of papers. v. 65, no. 4, April 1981. p. 764-765.
- D. A. Lindsey. UTAH. Volcanism and uranium mineralization at Spor Mountain, Utah [abstr.] AAPG Bulletin, *in* AAPG Southwest Section, annual meeting; abstracts of papers. v. 65, no. 4, April 1981. p. 765.
- T. J. Lopes and E. T. Furlong. Semivolatile organic compounds in streambed sediment, United States [abstr.] Abstracts of Papers - American Chemical Society, National Meeting, *in* American Chemical Society 217th national meeting; abstracts of papers. v. 217, no. Part 1, March 1999 unpaginated.
- Leslie Magoon and Susan Hodgson*. CALIFORNIA. The role oil and gas seeps played in petroleum exploration in California [abstr.] AAPG Bulletin, *in* 2000 AAPG Pacific Section and Western Region Society of Petroleum Engineers meeting; abstracts. v. 84, no. 6, June 2000. p. 882.
- S. A. Mahan and John Whitney. OKLAHOMA. Luminescence dating of Canadian River sediments at the Norman Landfill toxics site, Cleveland County, Okla. [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 55.
- B. J. Mahler, P. C. Van Metre and J. T. Wilson. Suspended sediments as contaminant vectors in karst [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 90.
- J. J. Major, T. C. Pierson and R. L. Dinehart. Sediment yield following severe volcanic disturbance; two-decade perspective from Mount St. Helens [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 200.
- D. K. Maurer, D. E. Prudic, D. L. Berger and C. E. Thodal. NEVADA. Sources of water flowing into basin-fill aquifers underlying Carson City, Nevada [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 87.
- P. J. McCabe, M. G. Bishop, R. T. Ryder and T. S. Ahlbrandt. Oil and gas resource assessment of S.E. Asia and Australia [abstr.] AAPG Bulletin, *in* AAPG international conference and exhibition; abstracts. v. 84, no. 9, September 2000. p. 1463.
- Susan McGeary*, J. E. Madsen* and D. E. Krantz. Imaging of the near-surface coastal geologic framework; influence on groundwater flow and contamination [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 77.
- Rose McKenney* and R. B. Jacobson. MISSOURI. Effects of riparian forest removal and regrowth on gravel-bed stream dynamics, Ozark plateaus, Missouri [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 202.
- P. B. McMahon and Timothy Howard*. Field and laboratory evidence for zero-valent Fe-supported autotrophic denitrification [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 99.
- S. B. Miles*, D. K. Keefer and C. L. Ho*. Newmark displacement models for seismic slope-performance zonation [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 195.
- L. D. Miller* and R. J. Goldfarb. ALASKA. Metallogeny of the Juneau gold belt; Alaska's largest lode gold system [abstr.] International Geological Congress, Abstracts = Congrès Géologique International, Résumés, *in* 30th international geological congress; abstracts. 30, Vol. 2, 1996. p. 780.
- W. D. Mooney, R. D. Catchings, G. S. Fuis, A. W. Walter, C. M. Wentworth, M. D. Zoback and J. J. Zucca. Deep crustal studies in the Pacific coastal states [abstr.] SEG Abstracts, *in* Society of Exploration Geophysicists, 55th annual meeting. v. 1985, no. 1, 1985. p. 121.
- J. R. Morrow*, C. A. Sandberg and Willi Ziegler*. NEVADA. Recognition of early Late Devonian impacts; Alamo, Nevada, and Amönu, Germany [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 64.
- C. Mueller, Arthur Frankel, S. Harmsen, T. Barnhard, E. Leyendecker, R. Wesson, F. Klein, D. Perkins and N. Dickman. USGS probabilistic seismic-hazard maps of the United States; Part I, Methodology [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 194.
- D. R. Muhs, J. B. Swinehart*, D. B. Loope*, Josh Been*, S. A. Mahan and C. A. Bush. NEBRASKA. Geochemical evidence for an eolian sand dam across the North and South Platte rivers in Nebraska at the end of the last glacial period [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 54-55.
- C. W. Naeser, B. Bryant, K. Kellogg and W. J. Perry, Jr. COLORADO. Middle to late Tertiary cooling of the Gore and western Front ranges, central Colorado, USA, from apatite fission-track data [abstr.] Abstracts - Geological Society of Australia, *in* Fission track 2000; 9th international conference on fission track dating and thermochronology. 58, 2000. p. 239.
- N. D. Naeser, C. W. Naeser, B. A. Morgan, III, A. P. Schultz and C. S. Southworth. NORTH CAROLINA, TENNESSEE, VIRGINIA. Paleozoic to recent cooling history of the Appalachian Blue Ridge Province in North Carolina, Tennessee, and Virginia, eastern United States, from apatite and zircon fission track analysis [abstr.] Abstracts - Geological Society of Australia, *in* Fission track 2000; 9th international conference on fission track dating and thermochronology. 58, 2000. p. 237.



- Rob Negrini*, Donald Miller*, Michael McGuire*, Cynthia Huggins*, Michael Minner*, B. Hacker*, A. M. Sarna-Wojcicki, C. Meyer, R. Fleck and Stephen Reid*. New age constraint on the Kern River Formation [abstr.] AAPG Bulletin, in 2000 AAPG Pacific Section and Western Region Society of Petroleum Engineers meeting; abstracts. v. 84, no. 6, June 2000. p. 887.
- E. J. Nelson*, M. D. Lewan and Paul Weimer*. Sensitivity analysis of thermal maturation modeling in the northern Gulf basin [abstr.] AAPG Bulletin, in AAPG Gulf Coast Section (GCAGS) meeting; abstracts. v. 84, no. 10, October 2000. p. 1687.
- D. J. Nichols. Palynological event horizons and their use in regional correlation, Upper Cretaceous, western North America [abstr.] Program and Abstracts - American Association of Stratigraphic Palynologists. Meeting, in The American Association of Stratigraphic Palynologists; 23rd annual meeting; program and abstracts. 23, 1990 unpaginated.
- D. J. Nichols and K. R. Johnson*. NORTH DAKOTA. Palynology and microstratigraphy of the K/T boundary in southwestern North Dakota [abstr.] Abstracts with Programs - Geological Society of America, in Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 72.
- J. E. O'Connor, G. G. Grant*, Heidi Fassnacht*, E. M. McClure* and J. H. Curran. OREGON. Geomorphology of the Deschutes River, Oregon [abstr.] Abstracts with Programs - Geological Society of America, in Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 201.
- P. B. O'Sullivan*, K. D. Kelley and S. Jennings*. ALASKA. Post-mineralization tectonic evolution of the region of the Red Dog Pb-Zn-Ag mine, northwest Alaska [abstr.] Abstracts - Geological Society of Australia, in Fission track 2000; 9th international conference on fission track dating and thermochronology. 58, 2000. p. 255-257.
- J. D. Obradovich and J. F. Hicks*. A review of the isotopic calibration points for the geomagnetic polarity time scale, in the interval 83 to 33 Ma (C34n to C13n) [abstr.] Abstracts with Programs - Geological Society of America, in Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 71.
- T. A. Okumura and D. J. Nichols. WYOMING. Palynomorphs from Cenomanian, Turonian, and Coniacian marine strata in the Powder River Basin, Wyoming [abstr.] Program and Abstracts - American Association of Stratigraphic Palynologists. Meeting, in The American Association of Stratigraphic Palynologists; 23rd annual meeting; program and abstracts. 23, 1990 unpaginated.
- G. R. Olhoeft. Clay-organic reactions measured with complex resistivity [abstr.] SEG Abstracts, in Society of Exploration Geophysicists, 54th annual meeting. v. 1984, no. 1, 1984. p. 356-358.
- G. R. Olhoeft. Applications and limitations of ground penetrating radar [abstr.] SEG Abstracts, in Society of Exploration Geophysicists, 54th annual meeting. v. 1984, no. 1, 1984. p. 147-148.
- C. L. Oman, O. S. Frederick and D. Blake. Trace-element content of northern Great Plains sub-bituminous coal and Gulf Coast lignite, 1979 [abstr.] AAPG Bulletin, in AAPG Southwest Section, annual meeting; abstracts of papers. v. 65, no. 4, April 1981. p. 767.
- F. L. Paillet and R. M. Turpening. Borehole and surface-to-borehole seismic applications in fracture characterization [abstr.] SEG Abstracts, in Society of Exploration Geophysicists, 54th annual meeting. v. 1984, no. 1, 1984. p. 333-335.
- C. M. Pieters*, M. J. Belton*, E. M. Fischer*, Ronald Greeley*, R. Jaumann*, J. W. Head*, H. Hoffmann*, A. S. McEwen, S. Murchie*, G. Neukum* and J. Sunshine*. Compositional implications of SSI multispectral images of the unexplored lunar farside [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, in Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1069-1070.
- R. J. Pike, R. W. Graymer and Sebastian Roberts. CALIFORNIA. GIS-based mapping of landslide susceptibility in the San Francisco Bay area, California [abstr.] Abstracts with Programs - Geological Society of America, in Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 195.
- J. K. Pitman, M. D. Lewan and Douglas Steinshouer. Prediction of petroleum migration pathways in the Jurassic petroleum system, Iraq [abstr.] AAPG Bulletin, in AAPG international conference and exhibition; abstracts. v. 84, no. 9, September 2000. p. 1475-1476.
- C. W. Poag. Depositional regimes during emplacement of the Exmore Breccia (Chesapeake Bay impact crater); clues from downhole geophysical logs [abstr.] Abstracts with Programs - Geological Society of America, in Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 64.
- C. W. Poag, M. A. Garcia del Cura* and J. Soria*. VIRGINIA. Sedimentary characteristics of the Exmore Breccia, an upper Eocene impact tsunamite from Virginia, USA [abstr.], in 15th international sedimentological congress; sedimentology at the dawn of the third millennium; abstracts. (J. C. Cañaveras and others). Alicante: Univ. Alicante, 1998. p. 629.
- H. A. Pohn and G. G. Schaber. Indenter type deformation on Venus as evidence for large-scale tectonic slip, and multiple strike-slip events as a mechanism for producing tessellated terrain [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, in Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1095.
- W. R. Premo. Nd-Sr isotopic signature of the Pierre Shale; target material at the Manson impact site and source of the Haitian tektites (K-T boundary)? [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, in Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1099-1100.
- W. R. Premo and M. Tatsumoto. Acid leaching of apatite; implications for U-Th-Pb systematics of lunar highland plutonic rocks [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, in Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1101-1102.
- W. R. Premo and M. Tatsumoto. U-Pb isotopes in dunite 72415 [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, in Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1103-1104.
- M. E. Reid, S. B. Christian, D. L. Brien and T. W. Sisson. Assessing the 3-D slope stability of a digital landscape [abstr.] Abstracts with



- Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 196.
- C. E. Rostad, B. G. Katz, J. A. Leenheer, B. S. Martin and T. I. Noyles. FLORIDA. Chlorination disinfection byproduct formation potential of isolated fractions of natural organic matter in surface- and ground-waters of northern Florida [abstr.] Abstracts of Papers - American Chemical Society, National Meeting, *in* American Chemical Society 217th national meeting; abstracts of papers. v. 217, no. Part 1, March 1999 unpaginated.
- S. L. Rotto and K. L. Tanaka. Channels and basin materials of Chryse and Acidalia Planitiae, Mars [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1173-1174.
- S. L. Rotto and K. L. Tanaka. Chryse Planitia region, Mars; a summary of geologic/geomorphological mapping results [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1175-1176.
- D. M. Rubin, J. M. Nelson and R. L. Shreve. Predicting time-varying bedload flux under waves [abstr.], *in* 15th international sedimentological congress; sedimentology at the dawn of the third millennium; abstracts. (J. C. Cañaveras and others). Alicante: Univ. Alicante, 1998. p. 677.
- D. M. Rubin, J. M. Nelson and D. J. Topping. ARIZONA. Relation of inversely graded deposits to suspended-sediment grain-size evolution during floods in Grand Canyon, Arizona [abstr.], *in* 15th international sedimentological congress; sedimentology at the dawn of the third millennium; abstracts. (J. C. Cañaveras and others). Alicante: Univ. Alicante, 1998. p. 678.
- J. J. Rytuba. NEVADA, OREGON. Petrochemical characteristics of volcanic rocks associated with uranium deposits in McDermitt Caldera, Nevada-Oregon [abstr.] AAPG Bulletin, *in* AAPG Southwest Section, annual meeting; abstracts of papers. v. 65, no. 4, April 1981. p. 768.
- G. G. Schaber, H. J. Moore, R. G. Strom* and J. M. Boyce*. The uniform distribution but nonuniform modification of impact craters on Venus [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1213-1214.
- P. Schenk* and H. J. Moore. An unusual thick lava flow in Ovda Regio, Venus [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1217-1218.
- R. A. Schultz* and K. L. Tanaka. Growth of the Coprates Rise, Mars, as a result of lithospheric folding [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1245-1246.
- K. J. Schulz. Assessing the world's undiscovered mineral resources [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 197.
- D. H. Scott and J. M. Dohm. Mars highland channels; an age reassessment [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1251-1252.
- R. L. Seeley and J. J. Daniels. A digital time-domain EM telemetry system [abstr.] SEG Abstracts, *in* Society of Exploration Geophysicists, 54th annual meeting. v. 1984, no. 1, 1984. p. 93-95.
- K. M. Shedlock, Domenico Giardini*, Gottfried Grünthal* and Zhang Peizhen*. The global seismic hazard map [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 194.
- Eugene Shinn, V. Garrison, G. Smith* and J. Weir*. Environmental research and speculations from space; the dust problem [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 189.
- Leila Shiozawa*, R. G. Craig*, Julio Betancourt, Elizabeth Pierson* and Tony Burgess*. A model of late Quaternary changes in Sonoran Desert vegetation distribution [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 55-56.
- E. M. Shoemaker and G. A. Izett. Stratigraphic evidence from western North America for multiple impacts at the K/T boundary [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third Lunar and planetary science conference. 23, March 1992. p. 1293-1294.
- R. R. Shroba and P. E. Carrara. COLORADO. Surficial geologic map of the Rocky Flats environmental technology site near Denver, Colorado, helps address landsliding and other environmental issues [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 80.
- G. Simila*, G. Fuis, T. Burdette, E. Criley, J. Murphy, J. Perron, A. Yong, M. Benthien*, S. Baher*, R. Clayton*, P. Davis*, N. Godfrey*, Tom Henyey*, M. Kohler*, J. McRaney*, D. Okaya*, G. Keller*, C. Prodehl*, T. Ryberg*, M. Alvarez*, I. Asudeh*, H. Thybo* and U. S. ten Brink. The Los Angeles Region Seismic Experiment, Phase II (LARSE II); a survey to identify major faults and seismic hazards beneath a large metropolitan area [abstr.] AAPG Bulletin, *in* 2000 AAPG Pacific Section and Western Region Society of Petroleum Engineers meeting; abstracts. v. 84, no. 6, June 2000. p. 895.
- G. F. Slater*, B. Sherwood Lollar*, E. Edwards*, B. Sleep* and R. Lee. Isotopic characterization of the subsurface fate of chlorinated ethenes [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 99-100.
- L. A. Soderblom, D. J. Chadwick and G. G. Schaber. Surface effects of impacts into Venus' atmosphere [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 1329-1330.
- C. Spötl* and D. W. Houseknecht. The transition from diagenesis to anchimetamorphism in the deep Arkoma Basin, USA [abstr.]



- Terra Abstracts, *in* European Union of Geosciences 8; oral and poster presentations. 7, Suppl. 1, 1995. p. 127.
- T. B. Spruill. Effect of riparian buffers on nitrate concentrations and water quality of discharging ground water in a coastal plain drainage [abstr.] Institute Proceedings Series - Water Resources Research Institute of The University of North Carolina, *in* North Carolina resources; water quality trends and enhancement. (University of North Carolina, Water Resources Research Institute). Report no. 12, 1999. p. 14.
- R. G. Stanley and J. G. Vedder. CALIFORNIA. New digital geologic map of the San Rafael Mtn. 7.5-minute quadrangle (Santa Barbara County, California) and a new interpretation of the Camuesa Fault [abstr.] AAPG Bulletin. v. 84, no. 12, December 2000. p. 1960.
- R. Stanley and J. Vedder. CALIFORNIA. New digital geologic map of the San Rafael Mtn. 7.5 minute quadrangle (Santa Barbara County, CA) and a new interpretation of the Camuesa Fault [abstr.] AAPG Bulletin, *in* 2000 AAPG Pacific Section and Western Region Society of Petroleum Engineers meeting; abstracts. v. 84, no. 6, June 2000. p. 896.
- D. A. Stonestrom. What do environmental tracers say about patterns of groundwater recharge, past and present? Examples from the Amargosa Desert, Rio Grande basin, and Palouse Catena [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 87.
- D. J. Strickland. LOUISIANA, MISSISSIPPI. Reconnaissance of water quality in two shallow aquifer systems in multiple land-use areas in Louisiana and Mississippi [abstr.] Journal of the Mississippi Academy of Sciences. v. 31, no. Suppl. 1986. p. 36.
- R. G. Strom*, G. G. Schaber, J. Arkani-Hamed* and M. N. Toksoz*. Global resurfacing of Venus [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 1379-1380.
- D. M. Sumner. MISSISSIPPI. Modeling of ground-water flow in Pliocene-Miocene age aquifers of southern Mississippi [abstr.] Journal of the Mississippi Academy of Sciences. v. 31, no. Suppl. 1986. p. 38.
- J. M. Sunshine*, C. M. Pieters*, J. W. Head*, A. S. McEwen and Ronald Greeley*. Oceanus Procellarum as viewed by Galileo; evidence for compositional diversity in the mare deposits and at the Marius Hills Plateau [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 1387-1388.
- Maurizio Tarzia*, Annamaria Lima*, Benedetto De Vivo* and H. E. Belkin. Uranium, zirconium and rare-earth-element enrichment in alkali syenite nodules from the Breccia Museo Deposit, Naples, Italy [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 69.
- M. Tatsumoto, Y. Nakamura, W. R. Premo and F. R. Boyd*. Elemental distribution of U, Th, and Pb in peridotite xenoliths; implications for the Pb isotopic evolution of the Moon [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 1409-1410.
- E. M. Taylor, C. A. San Juan, Diane White and C. M. Menges. NE-VADA. Modeling of the subsurface geology using drill hole lithologic data in the Amargosa Desert, Nye County, Nevada [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 80.
- U. S. ten Brink, R. Hackney*, S. Bannister*, T. Stern* and Y. Makovsky*. Uplift of non-orogenic mountain belts and plate motion; example from the Transantarctic Mountains [abstr.], *in* American Geophysical Union Chapman conference on the History and dynamics of global plate tectonics. (American Geophysical Union). Washington, DC: American Geophysical Union, 1997. p. 40-41.
- M. J. Terman. The Circum-Pacific Geospatial Data Project on geological correlation in East and Southeast Asia; an historical review [abstr.] AAPG Bulletin, *in* AAPG international conference and exhibition; abstracts. v. 84, no. 9, September 2000. p. 1504.
- T. W. Thompson*, T. C. O'Brien*, R. F. Jurgens*, M. A. Slade* and H. J. Moore. Mars quasi-specular echoes; preliminary results at 3.5-cm wavelength [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 1431-1432.
- J. D. Unger and D. B. Stewart. MAINE. Deep seismic reflection data from the Northern Appalachians of western Maine; methodology and results [abstr.] SEG Abstracts, *in* Society of Exploration Geophysicists, 55th annual meeting. v. 1985, no. 1, 1985. p. 121-122.
- Mahendra Verma. Oil and gas reserve growth; a model for the Volga-Ural Province, Russia [abstr.] AAPG Bulletin, *in* 2000 AAPG Pacific Section and Western Region Society of Petroleum Engineers meeting; abstracts. v. 84, no. 6, June 2000. p. 901.
- R. J. Walker*, J. W. Morgan, M. F. Horan, J. N. Grossman and R. S. Clarke, Jr.*. Rhenium-osmium isotope systematics in chondrites and iron meteorites [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 1487-1488.
- G. J. Walsh, J. E. Reddy, T. R. Armstrong and W. C. Burton. Geologic mapping with a GPS receiver and a personal digital assistant computer streamlines production of digital geologic maps [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 192.
- G. A. Waychunas*, J. A. Davis and R. Reitmeyer. Initial Fe (III) hydroxide precipitation processes on quartz surfaces [abstr.] Abstracts of Papers - American Chemical Society, National Meeting, *in* American Chemical Society 217th national meeting; abstracts of papers. v. 217, no. Part 1, March 1999 unpaginated.
- C. M. Weitz*, H. J. Moore and G. G. Schaber. Low-emissivity impact craters on Venus [abstr.] Abstracts of Papers Submitted to the Lunar and Planetary Science Conference, *in* Abstracts of papers submitted to the Twenty-third lunar and planetary science conference. 23, March 1992. p. 1513-1514.



- A. H. Welch. Arsenic in ground water of the United States [abstr.] Metal Ions in Biology and Medicine = Les Ions Métalliques en Biologie et en Médecine, *in* Proceedings of the sixth international symposium on Metal ions in biology and medicine. (J. A. Centeno and others). 6, May 2000. p. 31.
- R. L. Wheeler and Arthur Frankel. USGS probabilistic seismic-hazard maps of the United States; Part II, Use of geology [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 194.
- V. S. Williams. Simple techniques used at the USGS for compiling digital geologic maps in the field [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 191-192.
- P. Zhang*, W. P. Johnson*, M. J. Piana, C. C. Fuller and D. L. Naftz. Characteristics of microspheres and bromide as ground-water tracers in a reactive chemical barrier [abstr.] Abstracts with Programs - Geological Society of America, *in* Geological Society of America, 1999 annual meeting. v. 31, no. 7, 1999. p. 99.
- R. A. Zielinski. Experimental leaching of volcanic glass [abstr.] AAPG Bulletin, *in* AAPG Southwest Section, annual meeting; abstracts of papers. v. 65, no. 4, April 1981. p. 772.





TOPOGRAPHIC MAPS

Standard topographic maps are usually published in 7.5-minute quadrangles. The map location is given by the latitude and longitude of the southeast (lower right) corner of the quadrangle. Location, scale, and contour interval are indicated for each map in the computer-generated list below. The date shown indicates the latest revision. Provisional maps are essentially standard topographic maps published with modified map finishing and field and compilation procedures. Photorevised maps have not been field checked. Series converted maps include 7.5-minute maps compiled from 7.5-minute source materials initially published as 15-minute maps (15-minute maps are no longer available from the U.S. Geological Survey). Orthophotomaps are multicolor photographic-image maps in standard quadrangle format with added topographic detail. Orthophotoquads are monicolor or multicolor photographic-image maps in standard quadrangle format without topographic detail. Most monicolor orthophotoquads are not being published but are available in the form of diazo or photographic prints. The Index to Orthophotoquad Mapping showing information about available published and unpublished orthophotoquads is free on request from the distribution centers listed at the back of the catalog. County maps are multicolor topo-

graphic maps at scales of 1:50,000 or 1:100,000. County maps are \$7.00 per sheet. Level of content may vary between States, and State sales indexes should be consulted for a more detailed description of each map. Planimetric maps at intermediate scales of 1:50,000 or 1:100,000 are available in both quadrangle and county format for selected areas of the country. Most of these maps are not being published but are available in other forms. Copies of the drawings that compose these maps are available either as a composite of all features or separately by feature. An Index to Intermediate-Scale Series Mapping showing information about available published and unpublished intermediate-scale maps is free on request from the distribution centers listed at the back of the catalog.

Standard quadrangle maps and orthophotoquads are sold for \$4.00 per copy. Discount rates and ordering instructions are given at the back of the catalog. State topographic indexes and catalogs are free on request. Each State index shows the areas mapped and the catalog contains ordering information and forms, along with a list of local dealers who sell topographic maps.

State	Map Name	Map Type	Revision Type	Currentness Year	SE Corner DDMMSS Lat Long		Scale	Contour Value Unit	
					Lat	Long		Value	Unit
AK	Arctic (A-2)	63K TOPO MAP (AK)	MINOR CHANGE REPRINT	1972	680000N	1443600W	00063360	100	FT
AK	Christian (C-3)	63K TOPO MAP (AK)	MINOR CHANGE REPRINT	1972	673000N	1450000W	00063360	100	FT
AK	Craig (A-3)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	550000N	1324000W	00063360	100	FT
AK	Juneau (A-3)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	580000N	1344000W	00063360	100	FT
AK	Juneau (B-1)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	581500N	1340000W	00063360	100	FT
AK BC	Juneau (D-2)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	584500N	1342000W	00063360	100	FT
AK	Nabesna (C-3)	63K TOPO MAP (AK)	MINOR CHANGE REPRINT	1954	623000N	1420000W	00063360	100	FT
AK	Nabesna (C-4)	63K TOPO MAP (AK)	MINOR CHANGE REPRINT	1960	623000N	1423000W	00063360	100	FT
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AK	Nabesna (D-3)	63K TOPO MAP (AK)	MINOR CHANGE REPRINT	1954	624500N	1420000W	00063360	50	FT
AK	Nabesna (D-4)	63K TOPO MAP (AK)	MINOR CHANGE REPRINT	1954	624500N	1423000W	00063360	100	FT
AK	Nabesna (D-5)	63K TOPO MAP (AK)	MINOR CHANGE REPRINT	1948	624500N	1430000W	00063360	100	FT
AK	Petersburg (B-1)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	561500N	1320000W	00063360	100	FT
AK	Petersburg (C-2)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	563000N	1322000W	00063360	100	FT
AK	Port Alexander (C-1)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	563000N	1340000W	00063360	100	FT



AK	Port Alexander (D-1)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	564500N 1340000W	00063360	100	FT
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AK	Sitka (D-3)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	574500N 1344000W	00063360	100	FT
AK	Sitka (D-4)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	574500N 1350000W	00063360	100	FT
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AK	Yakutat (C-4)	63K TOPO MAP (AK)	LIMITED UPDATE (ANALOG REVISION)	1997	593000N 1390730W	00063360	100	FT
AL	Hodges	24K TOPO MAP	MINOR REVISION REPRINT	1998	341500N 0875230W	00024000	20	FT
AL	Hurricane	24K TOPO MAP	MINOR REVISION REPRINT	1997	304500N 0875230W	00024000	10	FT
AR	Mayflower	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1994	345230N 0922230W	00024000	10	FT
AR	Pinnacle Mountain	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1994	344500N 0922230W	00024000	10	FT
AR	Sweet Home	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1994	343730N 0920730W	00024000	5	FT
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AZ	Ajo North	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	322230N 1124500W	00024000	20	FT
AZ	Baldy Bill Point	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	333000N 1092230W	00024000	40	FT
AZ	Bee Canyon	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	331500N 1092230W	00024000	40	FT
AZ	Big Lake North	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	335230N 1092230W	00024000	20	FT
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AZ	Cabeza Prieta Peak	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	321500N 1134500W	00024000	20	FT



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AZ	Coyote Hills	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	340730N 1090730W	00024000	20	FT
AZ	Deadman Gap	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	323000N 1124500W	00024000	20	FT
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AZ	Hannagan Meadow	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	333730N 1091500W	00024000	40	FT
AZ	Hoodoo Knoll	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	333730N 1092230W	00024000	40	FT
AZ	Las Playas	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	320000N 1132230W	00024000	20	FT
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AZ	Midway	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	323730N 1124500W	00024000	40	FT
AZ	Midway NW	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	323730N 1125230W	00024000	20	FT
AZ	Midway SW	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	323000N 1125230W	00024000	20	FT
AZ	Monument Bluff	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	320000N 1133000W	00024000	20	FT
AZ	Mount Ajo	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	320000N 1123730W	00024000	40	FT
AZ	North of Agua Dulce Mountains	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	320730N 1130730W	00024000	20	FT
AZ	O'Neil Hills	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	320000N 1131500W	00024000	20	FT
AZ	Okie Well	24K TOPO MAP, PROVISIONAL	STANDARD UPDATE (ANALOG REVISION)	1996	323000N 1130730W	00024000	20	FT
AZ	Paradise Canyon	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	320730N 1133000W	00024000	20	FT
AZ	Pinta Playa	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	320730N 1132230W	00024000	20	FT
AZ	Saguaro Gap Well	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	321500N 1130730W	00024000	20	FT
AZ	Sierra De La Lechuguilla	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	320730N 1135230W	00024000	20	FT
AZ	Temporal Pass	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	321500N 1130000W	00024000	20	FT



AZ	Tillotson Peak	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	320000N 1124500W	00024000	20	FT
AZ	Tule Mountains	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	320730N 1134500W	00024000	20	FT
AZ	West of Growler Peak	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	322230N 1130730W	00024000	20	FT
AZ	West of Lukeville	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	315230N 1125230W	00024000	20	FT
CA	Alberhill	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	333730N 1172230W	00024000	40	FT
CA	Alder Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	355230N 1211500W	00024000	20	FT
CA	Apache Canyon	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	344500N 1191500W	00024000	40	FT
CA	Arroyo Grande NE	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	350730N 1203000W	00024000	40	FT
CA	Big Sur	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	361500N 1214500W	00024000	40	FT
CA	Black Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	343730N 1184500W	00024000	40	FT
CA	Burro Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	354500N 1211500W	00024000	20	FT
CA	Cape San Martin	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	355230N 1212230W	00024000	20	FT
CA	Chews Ridge	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	361500N 1213000W	00024000	40	FT
CA	Cobblestone Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	343000N 1184500W	00024000	40	FT
CA	Corona South	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	334500N 1173000W	00024000	40	FT
CA	Devils Heart Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	343000N 1185230W	00024000	40	FT
CA	Hurricane Deck	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	344500N 1194500W	00024000	40	FT
CA	La Panza Ranch	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	352230N 1200730W	00024000	20	FT
CA	Lake Elsinore	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	333730N 1171500W	00024000	40	FT
CA	Lathrop	24K TOPO MAP	MINOR REVISION REPRINT	1996	374500N 1211500W	00024000	5	FT
CA	Laurel	24K TOPO MAP	MINOR REVISION REPRINT	1996	370000N 1215230W	00024000	40	FT
CA	Lockwood Valley	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	343730N 1190000W	00024000	40	FT
CA	Lopez Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	351500N 1203000W	00024000	40	FT
CA	Matilija	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	342230N 1191500W	00024000	40	FT



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CA	Morro Bay North	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	352230N 1204500W	00024000	40	FT
CA	Mount Madonna	24K TOPO MAP	MINOR REVISION REPRINT	1996	370000N 1213730W	00024000	40	FT
CA	Ojai	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	342230N 1190730W	00024000	40	FT
CA	Old Man Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	343000N 1192230W	00024000	40	FT
CA	Pala	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	331500N 1170000W	00024000	20	FT
CA	Partington Ridge	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	360730N 1213730W	00024000	40	FT
CA	Piru	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	342230N 1184500W	00024000	40	FT
CA	Pozo Summit	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	351500N 1201500W	00024000	40	FT
CA	Rancho Nuevo Creek	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	343730N 1192230W	00024000	40	FT
CA	Reliz Canyon	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	360730N 1211500W	00024000	20	FT
CA	Rodriguez Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	330730N 1165230W	00024000	20	FT
CA	Salisbury Potrero	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	344500N 1193730W	00024000	40	FT
CA	San Marcos Pass	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	343000N 1194500W	00024000	40	FT
CA	San Rafael Mtn	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	343730N 1194500W	00024000	40	FT
CA	Santa Margarita Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	351500N 1202230W	00024000	40	FT
CA	Sawmill Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	344500N 1190730W	00024000	40	FT
CA	Sycamore Flat	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	361500N 1212230W	00024000	40	FT
CA	Tajiguas	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	342230N 1200000W	00024000	40	FT
CA	Tar Spring Ridge	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	350730N 1202230W	00024000	40	FT
CA	Taylor Canyon	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	350000N 1195230W	00024000	40	FT
CA	Tepusquet Canyon	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	345230N 1200730W	00024000	40	FT
CA	Ventana Cones	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	361500N 1213730W	00024000	40	FT
CA	Wheeler Springs	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	343000N 1191500W	00024000	40	FT
CA	Wilson Corner	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	352230N 1202230W	00024000	20	FT



CA	Zaca Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	344500N 120000W	00024000	40	FT
CA	Zigzag Creek	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	360730N 1213000W	00024000	40	FT
CO	Fosston	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	403000N 1041500W	00024000	10	FT
CO	Galeton	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	403000N 1043000W	00024000	10	FT
CO	Gatehook Spring	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	404500N 1034500W	00024000	10	FT
CO	Grover NE	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	405230N 1040000W	00024000	10	FT
CO	Grover SE	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	404500N 1040000W	00024000	10	FT
CO	Grover South	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	404500N 1040730W	00024000	10	FT
CO	Hereford SE	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	404500N 1041500W	00024000	10	FT
CO	Keota	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	403730N 1040000W	00024000	10	FT
CO	Springfield SW	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	371500N 1023730W	00024000	10	FT
CO	Springfield West	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	372230N 1023730W	00024000	10	FT
CO	Table Mesa	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	372230N 1030000W	00024000	10	FT
CO	Thompson Arroyo	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	375230N 1032230W	00024000	10	FT
CO	Timpas	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	374500N 1034500W	00024000	10	FT
CO	Timpas NW	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	375230N 1035230W	00024000	10	FT
CO	Timpas SW	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	374500N 1035230W	00024000	10	FT
FL	Bradenton	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1994	272230N 0823000W	00024000	5	FT
FL	Clearwater	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	275230N 0824500W	00024000	5	FT
FL	Forest City	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	283730N 0812230W	00024000	5	FT
GA	Coal Mountain	24K TOPO MAP	MINOR REVISION REPRINT	1997	341500N 0840000W	00024000	20	FT
GA TN	Tenna	24K TOPO MAP	MINOR REVISION REPRINT	1997	345230N 0843730W	00024000	40	FT
HI	Alika Cone	24K TOPO MAP	MINOR REVISION REPRINT	1995	191500N 1553730W	00024000	40	FT
HI	Ewa	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	211500N 1580130W	00024000	40	FT



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HI	Haleiwa	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1999	213000N 1580130W	00024000	40	FT
HI	Honolulu	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	211500N 1574630W	00024000	40	FT
HI	Kaena	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	213000N 1580900W	00024000	40	FT
HI	Kahuku	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	213730N 1575400W	00024000	40	FT
HI	Kaneohe	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	212230N 1574630W	00024000	40	FT
HI	Koko Head	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1999	211500N 1573900W	00024000	40	FT
HI	Mokapu Point	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	212230N 1573900W	00024000	40	FT
HI	Pearl Harbor	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1999	211500N 1575400W	00024000	20	FT
HI	Schofield Barracks	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	212230N 1580130W	00024000	40	FT
HI	Waianae	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	212230N 1580900W	00024000	40	FT
HI	Waimea	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	213730N 1580130W	00024000	40	FT
HI	Waipahu	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	212230N 1575400W	00024000	40	FT
ID MT	Curley Creek	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N 1160000W	00024000	40	FT
ID	Fairfield	BLM SURFACE MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	2000	430000N 1140000W	00100000	50	MR
ID	Pocatello	BLM SURFACE MINERALS MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	2000	423000N 1120000W	00100000	50	MR
ID MT	Smith Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	482230N 1160000W	00024000	40	FT
IL	Bloomington East	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	402230N 0885230W	00024000	10	FT
IL	Decatur	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	394500N 0885230W	00024000	10	FT
IL	Freeport West	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	421500N 0893730W	00024000	10	FT
IL	Greenview	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	400000N 0893730W	00024000	5	FT
IL	Heyworth	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	401500N 0885230W	00024000	10	FT
IL	Monmouth	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	405230N 0903730W	00024000	10	FT
IL	Oraville	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	374500N 0892230W	00024000	20	FT



IL	Sesser	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	380000N 0890000W	00024000	10	FT
KS	Clark County 00100000	100K COUNTY (TOPO) 10	MR (ANALOG REVISION)	STANDARD UPDATE	1997	365958N	0993229W	
KS	Comanche County	100K COUNTY (TOPO)	STANDARD UPDATE (ANALOG REVISION)	1996	365957N 0990000W	00100000	10	MR
KS	Hodgeman County	100K COUNTY (TOPO)	STANDARD UPDATE	1997	375446N 0993408W	00100000	10	MR
LA	Cameron	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	294500N 0931500W	00024000	5	FT
LA	Golden Meadow	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	292230N 0901500W	00024000	5	FT
LA	Humphreys	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	293000N 0904500W	00024000	5	FT
LA	Montegut	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	292230N 0903000W	00024000	5	FT
LA	New Orleans West	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	295230N 0900730W	00024000	5	FT
MA	Ashfield	25K TOPO MAP (7.5 X 15)	MINOR REVISION REPRINT	1998	423000N 0724500W	00025000	6	MR
MA VT	Bernardston	25K TOPO MAP (7.5 X 15)	MINOR REVISION REPRINT	1998	423730N 0723000W	00025000	6	MR
MA	Blandford	25K TOPO MAP (7.5 X 15)	MINOR REVISION REPRINT	1998	420730N 0724500W	00025000	6	MR
MA	Cheshire	25K TOPO MAP	MINOR REVISION REPRINT	1997	423000N 0730000W	00025000	6	MR
MA	East Lee	25K TOPO MAP (7.5 X 15), PROVISIONAL	MINOR REVISION REPRINT	1997	421500N 0730000W	00025000	6	MR
MA	Mount Tom	25K TOPO MAP (7.5 X 7.5)	MINOR REVISION REPRINT	1998	420730N 0723730W	00025000	10	FT
MA NY	Pittsfield West	25K TOPO MAP (7.5 X 15)	MINOR REVISION REPRINT	1998	422230N 0731500W	00025000	6	MR
MA CT	Southwick	25K TOPO MAP (7.5 X 15)	MINOR REVISION REPRINT	1997	420000N 0724500W	00025000	3	MR
MD PA WV	Hancock	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	393730N 0780730W	00024000	20	FT
MD	Havre De Grace	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	393000N 0760000W	00024000	20	FT
MD	Ocean City	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	381500N 0750000W	00024000	5	FT
MD WV	Sang Run	24K TOPO MAP	MINOR REVISION REPRINT	1999	393000N 0792230W	00024000	20	FT
MD	Tingles Island	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1998	380730N 0750730W	00024000	5	FT
ME	East Stoneham	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	441500N 0704500W	00024000	20	FT



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ME	Gilead	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	442230N 0705230W	00024000	20	FT
ME	North Waterford	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	440730N 0704500W	00024000	20	FT
ME	Speckled Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	2000	441500N 0705230W	00024000	20	FT
MI	Pinckney	24K TOPO MAP	MINOR REVISION REPRINT	1996	422230N 0835230W	00024000	10	FT
MO	Bardley	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	363730N 0910000W	00024000	20	FT
MO	Billmore	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	363000N 0910730W	00024000	20	FT
MO	Gatewood	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	363000N 0910000W	00024000	20	FT
MO	Riverton	24K TOPO MAP	LIMITED UPDATE	1997	363730N 0910730W	00024000	20	FT
MO	Thomasville	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	364500N 0913000W	00024000	20	FT
MT	Alexander Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	482230N 1151500W	00024000	40	FT
MT	Banfield Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483000N 1152230W	00024000	40	FT
MT	Barren Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480000N 1152230W	00024000	40	FT
MT	Beartrap Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	484500N 1150730W	00024000	40	FT
MT	Bonnet Top	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	485230N 1153730W	00024000	40	FT
MT	Boulder Lakes	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	484500N 1152230W	00024000	40	FT
MT WY	Bridger	BLM SURFACE MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	2000	450000N 1080000W	00100000	50	MR
MT WY	Bridger	BLM SURFACE MINERALS MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	2000	450000N 1080000W	00100000	50	MR
MT	Cable Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480730N 1153000W	00024000	40	FT
MT	Calx Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480730N 1150730W	00024000	40	FT
MT	Clark Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	484500N 1154500W	00024000	40	FT
MT	Cripple Horse Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	482230N 1150730W	00024000	40	FT
MT	Dahl Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480730N 1144500W	00024000	40	FT
MT	Davis Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483000N 1150000W	00024000	40	FT



MT	Deer Creek	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480730N 115000W	00024000	40	FT
MT	Edna Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N 1145230W	00024000	40	FT
MT BC	Eureka North	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	485230N 115000W	00024000	20	FT
MT	Eureka South	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	484500N 115000W	00024000	40	FT
MT	Fisher Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480730N 1151500W	00024000	40	FT
MT	Flatiron Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N 1153730W	00024000	40	FT
MT	Garver Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	485230N 1154500W	00024000	40	FT
MT ID	Gem Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	475230N 1155230W	00024000	40	FT
MT	Goat Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	475230N 1153000W	00024000	40	FT
MT	Gold Hill	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483000N 1153000W	00024000	40	FT
MT	Helwick Peak	24K TOPO MAP, PROVISIONAL	LIMITED UPDATE (ANALOG REVISION)	1997	473730N 1153000W	00024000	40	FT
MT	Heron	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480000N 1155230W	00024000	40	FT
MT	Horse Hill	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	481500N 1145230W	00024000	40	FT
MT	Horse Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480730N 1152230W	00024000	40	FT
MT	Howard Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480000N 1153000W	00024000	40	FT
MT	Ibex Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480730N 1154500W	00024000	40	FT
MT	Inch Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N 1151500W	00024000	40	FT
MT	Kenelty Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480000N 1151500W	00024000	40	FT
MT	Kilbrennan Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483000N 1155230W	00024000	40	FT
MT	Kootenai Falls	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	482230N 1154500W	00024000	40	FT
MT BC	Ksanka Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	485230N 1145230W	00024000	40	FT
MT	Larchwood	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	474500N 1153730W	00024000	40	FT
MT	Libby	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	482230N 1153000W	00024000	40	FT
MT	Little Hoodoo Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	481500N 1153000W	00024000	40	FT



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MT	Livingston	BLM SURFACE MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	1999	453000N	1100000W	00100000	50	MR
MT	Livingston	BLM SURFACE MINERALS MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	1999	453000N	1100000W	00100000	50	MR
MT	Loon Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480000N	1150730W	00024000	40	FT
MT	Lynch Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480730N	1145230W	00024000	40	FT
MT	Mc Gregor Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480000N	1144500W	00024000	40	FT
MT	Mc Guire Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N	1150730W	00024000	40	FT
MT	Meadow Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480000N	1145230W	00024000	40	FT
MT	Miller Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	475230N	1151500W	00024000	40	FT
MT	Mount Baldy	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	484500N	1155230W	00024000	40	FT
MT	Mount Henry	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	485230N	1153000W	00024000	40	FT
MT	Mount Marston	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	484500N	1144500W	00024000	40	FT
MT	Newton Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N	1155230W	00024000	40	FT
MT	Northwest Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	485230N	1155230W	00024000	40	FT
MT	Noxon	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	475230N	1154500W	00024000	40	FT
MT	Noxon Rapids Dam	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	475230N	1153730W	00024000	40	FT
MT	Parsnip Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N	1152230W	00024000	40	FT
MT	Pink Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N	1153000W	00024000	40	FT
MT	Pinkham Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N	1150000W	00024000	40	FT
MT	Pulpit Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483000N	1154500W	00024000	40	FT
MT BC	Red Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	485230N	1151500W	00024000	40	FT
MT BC	Rexford	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	485230N	1150730W	00024000	20	FT
MT	Richards Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	481500N	1150730W	00024000	40	FT
MT	Robinson Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	485230N	1152230W	00024000	40	FT



MT	Scenery Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	482230N 1153730W	00024000	40	FT
MT	Seven Point Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	474500N 1152230W	00024000	40	FT
MT	Silver Butte Pass	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	475230N 1152230W	00024000	40	FT
MT	Skillet Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483000N 1145230W	00024000	40	FT
MT	Smeads Bench	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480000N 1154500W	00024000	40	FT
MT	Snowshoe Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480730N 1153730W	00024000	40	FT
MT	Spar Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	481500N 1155230W	00024000	40	FT
MT	Stahl Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	485230N 1144500W	00024000	40	FT
MT	Stryker	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N 1144500W	00024000	40	FT
MT	Sunday Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483000N 1144500W	00024000	40	FT
MT	Swede Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	481500N 1152230W	00024000	40	FT
MT	Sylvanite	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483730N 1154500W	00024000	40	FT
MT	Thompson Lakes	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	480000N 1150000W	00024000	40	FT
MT	Tony Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	481500N 1151500W	00024000	40	FT
MT	Treasure Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	481500N 1153730W	00024000	40	FT
MT	Trout Creek	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	474500N 1153000W	00024000	40	FT
MT	Turner Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483000N 1153730W	00024000	40	FT
MT	Ural Creek	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483000N 1151500W	00024000	40	FT
MT	Valier	BLM SURFACE MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	1999	480000N 1120000W	00100000	20	MR
MT	Valier	BLM SURFACE MINERALS MANAGEMENT STATUS MAP	TOPOGRAPHIC 1999 EDITIONS	480000N	1120000W	00100000	20	MR
MT	Vermiculite Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	482230N 1152230W	00024000	40	FT
MT	Vermilion Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	474500N 1151500W	00024000	40	FT
MT	Volcour Gulch	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	483000N 1150730W	00024000	40	FT



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MT	Webb Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	484500N 1151500W	00024000	40	FT
MT	Wolf Prairie	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	481500N 1150000W	00024000	40	FT
MT	Yaak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	484500N 1153730W	00024000	40	FT
NC	Benson	24K TOPO MAP	LIMITED UPDATE (DIGITAL REVISION)	1997	352230N 0783000W	00024000	10	FT
NC	Bethany	24K TOPO MAP	MINOR REVISION REPRINT	1997	361500N 0794500W	00024000	20	FT
NC	Boones Crossroads	24K TOPO MAP	MINOR REVISION REPRINT	1997	361500N 0772230W	00024000	5	FT
NC	Catawba	24K TOPO MAP	MINOR REVISION REPRINT	1997 N	0810000W	00024000	20	FT
NC	Cherry Grove	24K TOPO MAP	MINOR REVISION REPRINT	1997	361500N 0792230W	00024000	20	FT
NC	Coats	24K TOPO MAP	LIMITED UPDATE (DIGITAL REVISION)	1997	352230N 0783730W	00024000	10	FT
NC	Dawson Crossroads	24K TOPO MAP	MINOR REVISION REPRINT	1997	360730N 0773000W	00024000	5	FT
NC	Elkin South	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1996	360730N 0804500W	00024000	20	FT
NC	Ellendale	24K TOPO MAP	MINOR REVISION REPRINT	1997	355230N 0811500W	00024000	20	FT
NC	Ellisboro	24K TOPO MAP	MINOR REVISION REPRINT	1997	361500N 0795230W	00024000	20	FT
NC	Essex	24K TOPO MAP	MINOR REVISION REPRINT	1998	360730N 0775230W	00024000	10	FT
NC	Falkland	24K TOPO MAP	MINOR REVISION REPRINT	1997	353730N 0773000W	00024000	2	MR
NC	Galatia	24K TOPO MAP	MINOR REVISION REPRINT	1997	362230N 0771500W	00024000	5	FT
NC	Halifax	24K TOPO MAP	MINOR REVISION REPRINT	1997	361500N 0773000W	00024000	5	FT
NC	Hobbsville	24K TOPO MAP	MINOR REVISION REPRINT	1997	361500N 0763000W	00024000	2	MR
NC	Hobgood	24K TOPO MAP	MINOR REVISION REPRINT	1997	360000N 0772230W	00024000	5	FT
NC	Hubert	24K TOPO MAP	LIMITED UPDATE (DIGITAL REVISION)	1997	343730N 0770730W	00024000	5	FT
NC	Hurdle Mills	24K TOPO MAP	MINOR REVISION REPRINT	1997	361500N 0790000W	00024000	10	FT
NC	Jacksonville NW	24K TOPO MAP	LIMITED UPDATE (DIGITAL REVISION)	1997	345230N 0772230W	00024000	5	FT
NC	Kelford	24K TOPO MAP	MINOR REVISION REPRINT	1997	360730N 0770730W	00024000	5	FT
NC	Kellum	24K TOPO MAP	LIMITED UPDATE (DIGITAL REVISION)	1997	344500N 0771500W	00024000	5	FT



NC	Kings Creek	24K TOPO MAP	MINOR REVISION REPRINT	1997	355230N 0812230W	00024000	20	FT
NC	Merchants Millpond	24K TOPO MAP	MINOR REVISION REPRINT	1997	362230N 0763730W	00024000	2	MR
NC VA	Milton	24K TOPO MAP	MINOR REVISION REPRINT	1997	363000N 0790730W	00024000	10	FT
NC	Newton Grove South	24K TOPO MAP	LIMITED UPDATE (DIGITAL REVISION)	1997	350730N 0781500W	00024000	5	FT
NC	Norfleet	24K TOPO MAP	MINOR REVISION REPRINT	1997	360730N 0771500W	00024000	5	FT
NC	Northwest Lumberton	24K TOPO MAP	MINOR REVISION REPRINT	1997	343730N 0790000W	00024000	5	FT
NC	Palmyra	24K TOPO MAP	MINOR REVISION REPRINT	1997	360000N 0771500W	00024000	5	FT
NC	Rocky Point	24K TOPO MAP	LIMITED UPDATE (DIGITAL REVISION)	1997	342230N 0775230W	00024000	5	FT
NC	Scotts Hill	24K TOPO MAP	LIMITED UPDATE (DIGITAL REVISION)	1997	341500N 0774500W	00024000	5	FT
NC	Siloam	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1997	361500N 0803000W	00024000	20	FT
NC	Spicer Bay	24K TOPO MAP	MINOR REVISION REPRINT	1997	342230N 0772230W	00024000	5	FT
NC	Stevenson Point	24K TOPO MAP	MINOR REVISION REPRINT	1997	360000N 0760730W	00024000	2	MR
NC	Vienna	24K TOPO MAP	MINOR REVISION REPRINT	1997	360730N 0802230W	00024000	10	FT
NH ME	Chatham	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	440730N 0710000W	00024000	20	FT
NH	Crawford Notch	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	440730N 0712230W	00024000	40	FT
NH	Franconia	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	440730N 0713730W	00024000	40	FT
NH	Jackson	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	440730N 0710730W	00024000	20	FT
NH	Jefferson	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	442230N 0712230W	00024000	6	MR
NH	Lincoln	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	440000N 0713730W	00024000	40	FT
NH	Mount Chocorua	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	435230N 0711500W	00024000	40	FT
NH	Mount Dartmouth	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	441500N 0712230W	00024000	6	MR
NH	Mount Kineo	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	435230N 0714500W	00024000	40	FT
NH	Mount Tripynamid	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	435230N 0712230W	00024000	40	FT
NH	Squam Mountains	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	434500N 0713000W	00024000	40	FT



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NH	Stark	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	443000N 0712230W	00024000	20	FT
NH	Twin Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	441500N 0713000W	00024000	6	MR
NH ME	Wild River	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	2000	441500N 0710000W	00024000	20	FT
NH VT	Woodsville	24K TOPO MAP	MINOR REVISION REPRINT	1999	440730N 0720000W	00024000	20	FT
NJ	Cape May	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	385230N 0745230W	00024000	10	FT
NJ	Hightstown	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	401500N 0743000W	00024000	20	FT
NJ	Lakewood	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	400000N 0740730W	00024000	5	FT
NJ	Mays Landing	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	392230N 0743730W	00024000	5	FT
NJ	Oceanville	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	392230N 0742230W	00024000	5	FT
NJ NY	Perth Amboy	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	403000N 0741500W	00024000	20	FT
NJ	Point Pleasant	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	400000N 0740000W	00024000	5	FT
NY	Albany	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1994	423730N 0734500W	00024000	10	FT
NY	Caroga Lake	24K TOPO MAP	MINOR REVISION REPRINT	1997	430730N 0742230W	00024000	20	FT
NY	Cobleskill	24K TOPO MAP	MINOR REVISION REPRINT	1996	423730N 0742230W	00024000	20	FT
NY	Cornwall-on-Hudson	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1994	412230N 0740000W	00024000	20	FT
NY	Edinburg	24K TOPO MAP	MINOR REVISION REPRINT	1997	430730N 0740000W	00024000	20	FT
NY	Hope Falls	25K TOPO MAP (7.5 X 15), PROVISIONAL	MINOR REVISION REPRINT	1999	431500N 0740000W	00025000	6	MR
NY	Jamaica	24K TOPO MAP	STANDARD UPDATE	1994	403730N 0734500W	00024000	10	FT
NY	Pittsford	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1994	430000N 0773000W	00024000	5	FT
NY NJ PA	Port Jervis South	24K TOPO MAP	SNADARD UPDATE (ANALOG REVISION)	1995	411500N 0743730W	00024000	20	FT
NY VT	Shushan	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	430000N 0731500W	00024000	20	FT
NY	Wakely Mountain	25K TOPO MAP (7.5 X 15), PROVISIONAL	MINOR REVISION REPRINT	1997	433730N 0743000W	00025000	6	MR
NY	Witherbee	25K TOPO MAP (7.5 X 15)	MINOR REVISION REPRINT	1999	440000N 0733000W	00025000	10	MR



OH	Smithfield	24K TOPO MAP	MINOR REVISION REPRINT	1997	401500N 0804500W	00024000	20	FT
OH WV	Tiltonsville	24K TOPO MAP	MINOR REVISION REPRINT	1997	400730N 0803730W	00024000	20	FT
OR	Abbott Butte	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	425230N 1223000W	00024000	40	FT
OR	Acker Rock	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	430000N 1223730W	00024000	40	FT
OR ID	Baker City	BLM SURFACE MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	2000	443000N 1170000W	00100000	40	MR
OR	Brothers	BLM SURFACE MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	2000	433000N 1200000W	00100000	20	MR
OR	Brothers	BLM SURFACE MINERALS MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	2000	433000N 1200000W	00100000	20	MR
OR	Buckeye Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	430000N 1223000W	00024000	40	FT
OR	Cedar Springs Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	424500N 1230000W	00024000	40	FT
OR	Chilcoat Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	432230N 1223730W	00024000	40	FT
OR	Cleveland Ridge	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	423730N 1225230W	00024000	40	FT
OR	Deadman Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	430000N 1225230W	00024000	40	FT
OR	Diamond Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	430730N 1220730W	00024000	40	FT
OR	Dumont Creek	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	430000N 1224500W	00024000	40	FT
OR	Garwood Butte	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	430730N 1221500W	00024000	40	FT
OR	Glide	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	431500N 1230000W	00024000	40	FT
OR	Lane Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	430730N 1230000W	00024000	40	FT
OR	Lemolo Lake	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	431500N 1220730W	00024000	40	FT
OR	Milo	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	425230N 1230000W	00024000	40	FT
OR	Mount Thielsen	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	430730N 1220000W	00024000	40	FT
OR	Richter Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	424500N 1225230W	00024000	40	FT
OR	Rose Hill	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	433730N 1223730W	00024000	40	FT
OR	S' Ochois Canyon	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	423000N 1213730W	00024000	20	FT



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OR	Silica Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	433000N 1224500W	00024000	40	FT
OR	Silver Dollar Flat	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	423730N 1211500W	00024000	20	FT
OR	Skeleton Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	423730N 1230000W	00024000	40	FT
OR	Sprague River West	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	422230N 1213000W	00024000	20	FT
OR	Tiller	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	425230N 1225230W	00024000	40	FT
OR	Tolo Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	431500N 1220000W	00024000	40	FT
OR	White Rock	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	430000N 1230000W	00024000	40	FT
OR	Wildhorse Ridge	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1998	425230N 1213000W	00024000	20	FT
PA	Boswell	24K TOPO MAP	MINOR REVISION REPRINT	1997	400730N 0790000W	00024000	20	FT
PA	Boyertown	24K TOPO MAP	MINOR REVISION REPRINT	1997	401500N 0753730W	00024000	20	FT
PA	Derry	24K TOPO MAP	MINOR REVISION REPRINT	1998	401500N 0791500W	00024000	20	FT
PA	Freeport	24K TOPO MAP	MINOR REVISION REPRINT	1998	403730N 0793730W	00024000	20	FT
PA	Hazleton	24K TOPO MAP	MINOR REVISION REPRINT	1997	405230N 0755230W	00024000	20	FT
PA	Kittanning	24K TOPO MAP	MINOR REVISION REPRINT	1998	404500N 0793000W	00024000	20	FT
PA	Lancaster	24K TOPO MAP	MINOR REVISION REPRINT	1997	400000N 0761500W	00024000	20	FT
PA	Mammoth	24K TOPO MAP	MINOR REVISION REPRINT	1997	400730N 0792230W	00024000	20	FT
PA	Manheim	24K TOPO MAP	MINOR REVISION REPRINT	1997	400730N 0762230W	00024000	20	FT
PA	Mill Run	24K TOPO MAP	MINOR REVISION REPRINT	1999	395230N 0792230W	00024000	20	FT
PA	Mount Pleasant	24K TOPO MAP	MINOR REVISION REPRINT	1997	400730N 0793000W	00024000	20	FT
PA	Ohioople	24K TOPO MAP	MINOR REVISION REPRINT	1999	394500N 0792230W	00024000	20	FT
PA	Pittsburgh East	24K TOPO MAP	MINOR REVISION REPRINT	1997	402230N 0795230W	00024000	20	FT
PA	Rachelwood	24K TOPO MAP	MINOR REVISION REPRINT	1998	401500N 0790000W	00024000	20	FT
PA	Skytop	24K TOPO MAP	MINOR REVISION REPRINT	1997	410730N 0750730W	00024000	20	FT
PA	South Connellsville	24K TOPO MAP	MINOR REVISION REPRINT	1999	395230N 0793000W	00024000	20	FT



PA	Sterling	24K TOPO MAP	MINOR REVISION REPRINT	1997	411500N 0752230W	00024000	20	FT
PA	Tamaqua	24K TOPO MAP	MINOR REVISION REPRINT	1997	404500N 0755230W	00024000	20	FT
PA	Telford	24K TOPO MAP	MINOR REVISION REPRINT	1997	401500N 0751500W	00024000	10	FT
PA	Twelvemile Pond	24K TOPO MAP	MINOR REVISION REPRINT	1997	410730N 0750000W	00024000	20	FT
PA	Vandergrift	24K TOPO MAP	MINOR REVISION REPRINT	1998	403000N 0793000W	00024000	20	FT
PA	West Chester	24K TOPO MAP	MINOR REVISION REPRINT	1997	395230N 0753000W	00024000	10	FT
PA	West Hickory	24K TOPO MAP	MINOR REVISION REPRINT	1997	413000N 0792230W	00024000	20	FT
RI	Chepachet	24K TOPO MAP	MINOR REVISION REPRINT	1999	415230N 0713730W	00024000	10	FT
RI	Georgiaville	24K TOPO MAP	MINOR REVISION REPRINT	1999	415230N 0713000W	00024000	10	FT
RI MA	Pawtucket	24K TOPO MAP	MINOR REVISION REPRINT	1998	415230N 0712230W	00024000	10	FT
RI	Prudence Island	24K TOPO MAP	LIMITED UPDATE (DIGITAL REVISION)	1996	413000N 0711500W	00024000	10	FT
SC	Charleston	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1994	324500N 0795230W	00024000	5	FT
TX	Emory Peak	24K TOPO MAP	MINOR REVISION REPRINT	1997	290730N 1031500W	00024000	40	FT
TX	Moonshine Hill	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	300000N 0950730W	00024000	5	FT
TX	Morgans Point	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1995	293730N 0945230W	00024000	5	FT
UT	East Park Reservoir	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	404500N 1093000W	00024000	20	FT
UT	Rush Valley	BLM SURFACE MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	1981	400000N 1120000W	00100000	50	MR
VA NC	Boykins	24K TOPO MAP	MINOR REVISION REPRINT	1997	363000N 0770730W	00024000	10	FT
VA	Chincoteague East	24K TOPO MAP	MINOR REVISION REPRINT	1999	375230N 0751500W	00024000	5	FT
VA NC	Claresville	24K TOPO MAP	MINOR REVISION REPRINT	1997	363000N 0772230W	00024000	10	FT
VA	Elkton West	24K TOPO MAP	MINOR REVISION REPRINT	1999	382230N 0783730W	00024000	40	FT
VA	Goshen	24K TOPO MAP	MINOR REVISION REPRINT	1999	375230N 0792230W	00024000	20	FT
VA	Horseshoe Mountain	24K TOPO MAP	MINOR REVISION REPRINT	1999	374500N 0785230W	00024000	20	FT
VA	Lexington	24K TOPO MAP	MINOR REVISION REPRINT	1999	374500N 0792230W	00024000	20	FT



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VA	Norfolk South	24K TOPO MAP	STANDARD UPDATE (ANALOG REVISION)	1994	364500N 0761500W	00024000	5	FT
VA WV	Palo Alto	24K TOPO MAP	MINOR REVISION REPRINT	1999	382230N 0791500W	00024000	40	FT
VA NC	Skippers	24K TOPO MAP	MINOR REVISION REPRINT	1997	363000N 0773000W	00024000	10	FT
VA	Stokesville	24K TOPO MAP	MINOR REVISION REPRINT	1999	381500N 0790730W	00024000	40	FT
VA NC	Sunbeam	24K TOPO MAP	MINOR REVISION REPRINT	1997	363000N 0770000W	00024000	10	FT
VA	Warm Springs	24K TOPO MAP	MINOR REVISION REPRINT	1999	380000N 0794500W	00024000	20	FT
VT	Bread Loaf	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	435230N 0725230W	00024000	20	FT
VT	Delectable Mountain	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	433730N 0723730W	00024000	20	FT
VT	Dorset	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	431500N 0730000W	00024000	20	FT
VT	Killington Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	433000N 0724500W	00024000	20	FT
VT	Lincoln	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1999	440000N 0725230W	00024000	20	FT
VT	Montpelier	24K TOPO MAP	MINOR REVISION REPRINT	1999	441500N 0723000W	00024000	20	FT
VT	Morrisville	24K TOPO MAP, PROVISIONAL	MINOR REVISION REPRINT	1999	443000N 0723000W	00024000	6	MR
VT	Mount Carmel	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	434500N 0725230W	00024000	20	FT
VT	Mount Snow	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	425230N 0725230W	00024000	6	MR
VT	Mount Worcester	24K TOPO MAP	MINOR REVISION REPRINT	1999	442230N 0723000W	00024000	20	FT
VT	Pico Peak	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	433730N 0724500W	00024000	20	FT
VT	Rochester	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	434500N 0724500W	00024000	20	FT
VT	Rutland	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1996	433000N 0725230W	00024000	20	FT
VT	Sunderland	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	430000N 0730000W	00024000	20	FT
VT	Townshend	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1997	430000N 0723730W	00024000	6	MR
VT	West Rupert	24K TOPO MAP	LIMITED UPDATE (ANALOG REVISION)	1995	430730N 0730730W	00024000	20	FT
WA	Banks Lake	BLM SURFACE MANAGEMENT STATUS MAP	TOPOGRAPHIC EDITIONS	1999	473000N 1190000W	00100000	50	MR



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