

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

# **New Publications of the U.S. Geological Survey**

**Lists 1125–1127—Publications issued April–June 2002**

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The quarterly catalog "New Publications of the U.S. Geological Survey" may be obtained free on request. Subscribers to this quarterly catalog are requested to provide notice for change of address promptly, giving new and old addresses and ZIP Codes. Those wishing to be placed on a free subscription list for the quarterly catalog "New Publications of the U.S. Geological Survey" or wishing to change their address should write to the U.S. Geological Survey, 903 National Center, Reston, VA 20192.

**Prices of available publications**, except reports released 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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### **Payment of Shipping Costs by International Customers**

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## NEW PUBLICATIONS OF SPECIAL INTEREST

### Fact Sheet 0049-02

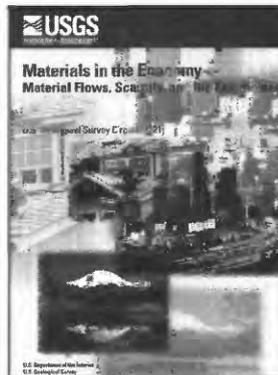
FS 0049-02. The Parkfield experiment; capturing what happens in an earthquake, by Steve Hickman and John Langbein. 2002. 2 p. Available on the web at <http://geopubs.wr.usgs.gov/fact-sheet/fs049-02/>

To better understand what happens on and near a fault before, during, and after an earthquake, the U.S. Geological Survey (USGS) and the California Geological Survey began the Parkfield Earthquake Experiment in the 1980's. Researchers from the USGS and collaborating institutions have created a dense network of instruments on the San Andreas Fault at Parkfield, California, where moderate earthquakes have occurred at fairly regular intervals. Data from these instruments are revealing the earthquake process in unprecedented detail and will aid in predicting the time and severity of future shocks. The USGS and the National Science Foundation plan to expand the Parkfield Experiment by drilling a deep borehole and installing instruments at the actual depths where earthquakes initiate, creating the San Andreas Fault Observatory at Depth.

### Circular 1221

C 1221. Materials in the economy; material flows, scarcity, and the environment, by L. A. Wagner. 2002. 29 p. Available on the web at <http://greenwood.cr.usgs.gov/pub/circulars/c1221/>

The importance of materials to the economy of the United States is described, including the levels of consumption and uses of materials. The paths (or flows) that materials take from extraction, through processing, to consumer products, and then final disposition are illustrated. Scarcity and environmental issues as they relate to the flow of materials are discussed. Examples for the three main themes of the report (material flows, scarcity, and the environment) are presented.



### Circular 1220

The U. S. Geological Survey and the Chesapeake Bay; the role of science in environmental restoration, edited by S. W. Phillips. 2002. 32 p. Available on the web at <http://pubs.usgs.gov/circ/c1220/>



The Chesapeake Bay is the Nation's largest estuary and historically supported one of the most productive fisheries in the world. In addition to supporting aquatic communities and wildlife, the bay's watershed serves the economic and recreational needs of 15 million people. The fertile soils of the watershed support significant agricultural production. Unfortunately, the commercial, economic, and recreational value of the bay and its watershed has been degraded by poor water quality, loss of habitat, and overharvesting of living resources. Since the early 1980's, the Chesapeake Bay Program, which is a partnership among Maryland, Virginia, Pennsylvania, the District of Columbia, the Federal Government, and the Chesapeake Bay Commission, has been formulating and implementing restoration goals to restore living resources, minimize habitat loss, and reduce the amount of nutrients, sediment, and toxic substances entering the bay. The U.S. Geological Survey has the critical role of providing unbiased scientific information to be used in helping to formulate, implement, and assess the effectiveness of restoration goals in the bay and its watershed.

### Fact Sheet 0025-02

FS 0025-02. U. S. coral reefs; imperiled national treasures, by M. E. Field, S. A. Cochran and K. R. Evans. 2002. 4 p. Available on the web at <http://geopubs.wr.usgs.gov/fact-sheet/fs025-02/>

Coral reefs are home to 25 percent of all marine species. However, the tiny colonial animals that build these intricate limestone masses are dying at alarming rates. If this trend continues, in 20 years the living corals on many of the world's reefs will be dead and the ecosystems that depend on them severely damaged. As part of the effort to protect our Nation's extensive reefs, U. S. Geological Survey scientists are working to better understand the processes that affect the health of these ecologically and economically important ecosystems.

## TOPOGRAPHIC MAPS

Due to technical difficulties, the lists of new and revised topographic maps are unavailable.



## FORMAL REPORTS

## 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-0071. COLORADO.** Surficial geologic maps along the riparian zone of the Animas River and its headwater tributaries, Silverton to Durango, Colorado, with upper Animas River watershed gradient profiles, by R. W. Blair, D. B. Yager and S. E. Church. 2002. One CD-ROM. \$32.

This CD-ROM has been produced in accordance with the ISO 9660 Standard and is therefore capable of being read on any computing platform that has appropriate CD-ROM driver software installed. System requirements are: compatible computers (all computers must have a CD-ROM drive and be capable of displaying at least 256 colors): IBM-compatible running Windows 95 or higher or NT 4.0 or higher with an Intel Pentium or equivalent processor, or Macintosh running Mac OS 8.6 or later with a Power PC or equivalent processor. Software requirements are Adobe Acrobat Reader 4.5 or higher and ArcInfo or ArcView or any software that is capable of importing ArcInfo export files or ArcView shape files.

This product consists of Adobe Acrobat .PDF format documents for 10 surficial geologic strip maps along the Animas River watershed from its major headwater tributaries, south to Durango, Colorado. The Animas River originates in the San Juan Mountains north of the historic mining town of Silverton, Colorado. The surficial geologic maps identify surficial deposits, such as flood-plain and terrace gravels, alluvial fans, glacial till, talus, colluvium, landslides, and bogs. Sixteen primary units were mapped that included human-related deposits and structures, eight alluvial, four colluvial, one glacial, travertine deposits, and undifferentiated bedrock. Each of the surficial geologic strip maps has .PDF links to surficial geology photographs, which enable the user to take a virtual tour of these deposits. Geochemical data collected from mapped surficial deposits that pre- and postdate mining activity have aided in determining the geochemical baseline in the watershed. Several photographs with their corresponding geochemical baseline profiles are accessible through .PDF links from several of the maps. A single coverage for all surficial deposits mapped is included as an ArcInfo shape file as an Arc Export format .e00 file. A gradient map for major headwater tributary streams to the Animas River is also included. The gradient map has stream segments that are color-coded based on relative variations in slope and .PDF format links to each stream gradient profile. Stream gradients were derived from U. S. Geological Survey 10-m digital elevation model data. This project was accomplished in

support of the U. S. Geological Survey's Abandoned Mine Lands Initiative in the San Juan Mountains, Colorado.

**DDS-0073. COLORADO.** Hydrogeochemical investigations of historic mining districts, central Western Slope of Colorado, including influence on surface-water quality, by J. T. Nash. 2002. One CD-ROM. \$32. Available on the web at <http://greenwood.cr.usgs.gov/pub/dds/dds-073/>

This CD-ROM has been produced in accordance with the ISO 9660 Standard and is therefore capable of being read on any computing platform that has appropriate CD-ROM driver software installed. Adobe Acrobat Reader 5.0 is required to access the written report. Installers for Reader 5.0 are contained in the Acrobat folder at the root directory of this CD-ROM for Windows and Macintosh platforms (these are the only platforms for which Reader 5.0 is presently available). Data files are located in the Data folder at the root directory of this CD-ROM and are provided in both Microsoft Excel and CSV (comma separated value) formats. Microsoft Excel or Word is required to view files with a .xls extension, and files with a .csv extension can be viewed by most word-processing programs.

This report describes reconnaissance hydrogeochemical investigations of 22 mining districts on the Western Slope of Colorado in the Gunnison and Uncompahgre National Forests and adjacent public lands administered by the Bureau of Land Management. Sources and fates of contaminants from historic mines, mine waste, and mill tailings are interpreted from chemical analyses for 190 samples of surface waters; 185 samples of mined rocks, mill tailings, and altered rocks; and passive leach analyses of 116 samples of those mineralized materials. Short reaches of several headwater streams show relatively low level effects of historic mining; the headwaters of the Uncompahgre River are highly contaminated by mines and unmined altered rocks in the Red Mountain district. There is encouraging evidence that natural processes attenuate mine-related contamination in most districts.

**DDS-0075. ALASKA.** National Petroleum Reserve-Alaska (NPR) core images and well data, edited by D. W. Houseknecht. 2002. Four CD-ROMs. \$62.

System requirements: A web browser, Adobe Acrobat Reader, and ArcExplorer (Windows platform only). These CD-ROMs have been produced in accordance with the ISO 9660 Standard and are therefore capable of being read on any computing platform that has appropriate CD-ROM driver software installed.

This report contains photographic images and data from petroleum exploration wells drilled within and near the National Petroleum Reserve-Alaska (NPR). The volume is organized into six chapters, each of which contains images and well data (including a GIS project of public domain cores) pertinent to the geology and petroleum potential of NPR. This product is a compilation of data not available elsewhere and contains limited interpretive material.

1. Introduction, by D. W. Houseknecht.
2. GIS of public domain cores, by R. D. Crangle, Jr., M. W. Borella and D. W. Houseknecht.
3. Interactive core photographs, by M. W. Borella, R. D. Crangle, Jr., S. L. D'Agostino and D. W. Houseknecht.



4. ALASKA. Porosity and permeability data and plots for the National Petroleum Reserve-Alaska (NPR), by P. H. Nelson and J. E. Kibler.
5. Subsurface oil and gas indications in and adjacent to the NPR, by D. O. Hayba, K. J. Bird and C. P. Garrity.
6. Core photographs; digital archive, by S. L. D'Agostino and D. W. Houseknecht.

### 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 1625-C. 2000 resource assessment of selected coal beds and zones in the Northern and Central Appalachian Basin coal regions, by Northern and Central Appalachian Basin Coal Regions Assessment Team. 2001. Two CD-ROMs. (National Coal Resource Assessment.) \$32.

These CD-ROMs have been produced in accordance with the ISO 9660 Standard and are therefore capable of being read on any computing platform that has appropriate CD-ROM driver software installed. Supported systems and minimum requirements to use the data with the software provided are as follows: IBM or compatible personal computer with (1) Windows 95 or higher operating system, (2) 16 megabytes (MB) or more of RAM, (3) CD-ROM drive, (4) Hard disk drive, (5) VGA color graphics system. Macintosh computer with 68020 (Macintosh II series) or greater processor. MacOS 7.0 or later, 24 megabytes (MB) RAM, and 20 MB hard-disc space. Sun SPARCstation, SunOS 4.1.3 or later, or Solaris 2.3 or later, Open Windows 3.0 or later, Motif 1.2.3 or later, OpenLook version 3.0 or Common Desktop Environment (CDE) 1.0, 12MB of available hard disk space, 32 MB RAM. HP workstation, 9000-series workstation model 700 or 800 HP-UX 9.0.3 or later, X Window System XIIR5 with HP-VUE of CDE 1.0, 12 MB hard-disc space, 32 MB RAM. Silicon Graphics workstation, IRIX 5.3 or later, 12 MB of available hard-disc space, 32 MB or RAM. IBM RS/6000 workstation, AIX(R) 4.1 or later operating system, CDE 1.0 or Motif window manager, 12 MB of available hard-disc space, 32 MB RAM.

This report includes results of a digital assessment of six coal beds or zones in the Northern and Central Appalachian Basin coal regions that produce over 15 percent of the Nation's coal. Other chapters include an executive summary, a report on geology and mining, a report summarizing other selected coal zones that were not assessed, and a report on USGS coal availability and recoverability studies in the Northern and Central Appalachian Basin coal regions.

- A. Executive summary; coal resource assessment of selected coal beds and zones in the Northern and Central Appalachian Basin coal regions, by L. F. Ruppert, U.S. Geological Survey. p. A1-A14.
- B. Coal resource assessment methodology and geology of the Northern and Central Appalachian Basin coal regions, by L. F. Ruppert, U.S. Geological Survey; and C. L. Rice. p. B1-B21.

C. A digital resource model of the Upper Pennsylvanian Pittsburgh coal bed, Monongahela Group, Northern Appalachian Basin coal region, by S. J. Tewalt, L. F. Ruppert and L. J. Bragg, U.S. Geological Survey; R. W. Carlton, Ohio Division of Geological Survey; D. K. Brezinski, Maryland Geological Survey; R. N. Wallack, Intertox; and D. T. Butler, MTA/Earth Tech. p. C1-C102.

D. A digital resource model of the Middle Pennsylvanian upper Freeport coal bed, Allegheny Group, Northern Appalachian Basin coal region, by L. F. Ruppert and S. J. Tewalt, U.S. Geological Survey; R. N. Wallack, Intertox; L. J. Bragg, U.S. Geological Survey; D. K. Brezinski, Maryland Geological Survey; R. W. Carlton, Ohio Division of Geological Survey; D. T. Butler, MTA/Earth Tech; and F. J. Calef, III, CH2M Hill. p. D1-D97.

E. Geology and geochemistry of the Middle Pennsylvanian lower Kittanning coal bed, Allegheny Group, Northern Appalachian Basin coal region, by R. C. Milici and P. A. Freeman, U.S. Geological Survey; R. W. Carlton, Ohio Division of Geological Survey; L. J. Bragg, U.S. Geological Survey; D. T. Butler, MTA/Earth Tech; and S. J. Tewalt, U.S. Geological Survey. p. E1-E67.

F. A digital resource model of the Middle Pennsylvanian Fire Clay coal zone, Pottsville Group, Central Appalachian Basin coal region, by S. J. Tewalt, L. F. Ruppert and L. J. Bragg, U.S. Geological Survey; G. A. Weisenfluh and E. E. Thacker, Kentucky Geological Survey; R. S. Sites, Virginia Division of Mineral Resources; B. M. Blake, Jr., West Virginia Geological and Economic Survey; P. A. Freeman and L. C. Bryant, U.S. Geological Survey; and D. T. Butler, MTA/Earth Tech. p. F1-F72.

G. A digital resource model of the Middle Pennsylvanian Pond Creek coal zone, Pottsville Group, Central Appalachian Basin coal region, by L. F. Ruppert, S. J. Tewalt and L. J. Bragg, U.S. Geological Survey; G. A. Weisenfluh and E. E. Thacker, Kentucky Geological Survey; B. M. Blake, Jr., West Virginia Geological and Economic Survey; R. S. Sites, Virginia Division of Mineral Resources; P. A. Freeman and D. T. Butler, U.S. Geological Survey; and L. C. Bryant, MTA/Earth Tech. p. G1-G88.

H. A digital resource model of the Lower Pennsylvanian Pocahontas No. 3 coal bed, Pottsville Group, Central Appalachian Basin coal region, by R. C. Milici, P. A. Freeman and L. J. Bragg, U.S. Geological Survey. p. H1-H57.

I. Summary report on the coal resources, coal production, and coal quality of the Allegheny Group No. 5 block, and the Pottsville Group Stockton and Coalburg, Winifrede/Hazard, Williamson/Amburgy, Campbell Creek/Upper Elkhorn No. 3, and Upper Elkhorn Nos. 1 and 2/Powellton coal zones, Central Appalachian Basin coal region, by S. G. Neuzil, U.S. Geological Survey. p. I1-I128.

J. Coal availability, recoverability, and economic evaluations of coal resources in the Northern and Central Appalachian Basin coal regions, by M. D. Carter and T. J. Rohrbacher, U.S. Geological Survey; D. D. Teeters and D. C. Scott, DST and Associates; L. M. Osmonson, U.S. Geological Survey; G. A. Weisenfluh, Kentucky Geological Survey; E. I. Loud, West Virginia Geological and Economic Survey; R. S. Sites, Virginia Division of Mineral Resources; A. G. Axon, Information Technology Services of North Carolina; M. E. Wolfe, Ohio Division of Geological Survey; and L. J. Lentz, Pennsylvania Bureau of Topographic and Geologic Survey. p. J1-J43.

P 1634. Lake Pontchartrain Basin; bottom sediments and related environmental resources, edited by F. T. Manheim and Laura Hayes, U.S. Geological Survey; LandView IV implementation by E. J. McFaul. 2002. One CD-ROM. \$32.

This CD-ROM has been produced in accordance with the ISO 9660 Standard and is therefore capable of being read on any computing platform that has appropriate CD-ROM driver software installed. This CD-ROM was designed to run on computers with Windows or Macintosh operating systems. Most of the text, illustrations, photographs, and tabular material presented can be read with any HTML-compatible browser. Interactive mapping and display software offers additional information and capabilities. LandView IV and ESRI's ArcExplorer are GIS mapping tools available (Windows only) for viewing these data and creating maps incorporating data from other sources.

Lake Pontchartrain, the largest estuary in southern Louisiana, is an important recreational, commercial, and environmental resource for New Orleans and southeastern Louisiana. This publication is part of a 5-year, cooperative program led by the USGS on the geological framework and sedimentary processes of the Lake Pontchartrain Basin. This presentation is divided into two main parts. The scientific sections include historical information on the area; shipboard, field, and remote-sensing studies; and a comprehensive sediment database with geological and chemical discussions of the region. The multimedia and resources sections include geographic information system (GIS) tools and data, a video demonstrating vibracore sampling techniques in Lake Pontchartrain, and abstracts from four Basics of the Basin symposia.

A. LOUISIANA. Holocene geologic framework of Lake Pontchartrain Basin and lakes of southeastern Louisiana, by J. L. Kindinger, U.S. Geological Survey.

B. New field sampling techniques and data description, by J. G. Flocks, U.S. Geological Survey; with technical contributions from Marci Marot, U.S. Geological Survey; Phil McCarty, University of New Orleans; Dana Weise, U.S. Geological Survey; Paul Connor, Jr., University of New Orleans; and Scott Noakes, University of Georgia.

C. The continuous sediment sampling and analysis system, by Scott Noakes, University of Georgia.

D. LOUISIANA. Wind-driven circulation and sediment resuspension processes in Lake Pontchartrain, Louisiana, by R. P. Signell and J. H. List, U.S. Geological Survey; R. P. Stumpf, NOAA; and John Evans, University of Maine.

E. Satellite imagery; Lake Pontchartrain Basin and Gulf of Mexico, by R. P. Stumpf, NOAA.

F. CD-ROM development, by Chris Polloni, Laura Hayes and F. T. Manheim, U.S. Geological Survey.

G. Data visualization by use of geographic mapping tools (GIS), by Laura Hayes, Chris Polloni and E. J. McFaul, U.S. Geological Survey.

H. Vibracore sampling strategy interactive training, by Jack Kindinger, James Flocks, Charles Holmes and Chris Polloni, U.S. Geological Survey.

I. Basics of the Basin symposium, edited by John Lopez, Amoco Oil Company.

J. Sediment database and geochemical assessment of Lake Pontchartrain Basin, by F. T. Manheim and Laura Hayes, U.S. Geological Survey.

P 1640-A. Mineral deposit density; an update, by D. A. Singer, W. D. Menzie, D. M. Sutphin, D. L. Mosier and J. D. Bliss. 2001. p. A1-A13. (Contributions to global mineral resource assessment research, edited by K. J. Schulz.) \$3.75. Available on the web at <http://pubs.usgs.gov/prof/p1640a>

A robust method to estimate the number of undiscovered deposits is a form of mineral deposit model wherein numbers of deposits per unit area from well-explored regions are counted and the resulting frequency distribution is used either directly for an estimate or indirectly as a guideline in some other method. The 27 mineral deposit density estimates reported here for 13 different deposit types represent a start at compiling the estimates necessary to guide assessments.

P 1645. An interdisciplinary assessment of regional-scale nonpoint source ground-water vulnerability; theory and application, by R. L. Bernknopf, L. B. Dinitz, U.S. Geological Survey; Keith Loague, Stanford University. 2001. 21 p. \$5. Available on the web at <http://geopubs.wr.usgs.gov/prof-paper/pp1645/>

An integrated earth science-economics model, developed within a geographic information system (GIS), combines a regional-scale nonpoint source vulnerability assessment with a specific remediation measure to avoid unnecessary agricultural production costs associated with the use of agrochemicals in the Pearl Harbor basin on the island of Oahu, Hawaii. This approach forms the core of a risk-based regulation for the application of agrochemicals and estimates the benefits of an information-based approach to decisionmaking.

P 1649. CALIFORNIA. Mountain Meadows Dacite; Oligocene intrusive complex that welds together the Los Angeles Basin, northwestern Peninsular Ranges, and central Transverse Ranges, California, by T. H. McCulloh; L. A. Beyer, U.S. Geological Survey; R. W. Morin, Morin Biostratigraphic Studies. 2001. 34 p. \$6.50. Available on the web at <http://geopubs.wr.usgs.gov/prof-paper/pp1649/>

A distinctive suite of Oligocene dacitic rocks is shown to transect major tectonic boundaries in the San Gabriel Mountains region of Southern California, thereby constraining the amount of late Cenozoic offset on several strike-slip faults.

P 1657. MONTANA. Composition, age, and petrogenesis of Late Cretaceous intrusive rocks in the central Big Belt Mountains, Broadwater and Meagher counties, Montana, by E. A. du Bray and L. W. Snee. 2002. 30 p. \$5. Available on the web at <http://greenwood.cr.usgs.gov/pub/ppapers/p1657/>

Cretaceous intrusions hosted by the Proterozoic Newland Formation. The northern intrusion, centered on Boulder Baldy, consists of outer, intermediate, and core zones composed of aegirine-augite quartz monzonite, hornblende quartz monzodiorite, and biotite granodiorite, respectively. The southern intrusion, north of Mount Edith, is compositionally indistinguishable from the intermediate zone of the northern intrusion.

P 1659. IDAHO. Structural geology of western part of Lemhi Range, east-central Idaho, by R. G. Tysdal. 2002. 33 p. \$6.50. Available on the web at <http://greenwood.cr.usgs.gov/pub/ppapers/p1659/>

The Poison Creek Anticline is a major fold that occupies a large part of the western part of the Lemhi Range. The fold is now broken by normal faults, but removal of displacement on the normal faults permitted reconstruction of the anticline. The fold formed during late Mesozoic compressional deformation in the hinterland of the Cordilleran thrust belt. It is in the hanging wall of the Poison Creek thrust fault, a major fault in east-central Idaho, that displaced Proterozoic strata over lower Paleozoic rocks.

## 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 2185. CALIFORNIA. Response plan for volcano hazards in the Long Valley Caldera and Mono Craters region California, by D. P. Hill, Dan Dzurisin, W. L. Ellsworth, E. T. Endo, D. L. Galloway, T. M. Gerlach, M. S. J. Johnston, John Langbein, K. A. McGee, C. D. Miller, David Oppenheimer and M. L. Sorey. Prepared in cooperation with the California Department of Conservation, Division of Mines and Geology; Mono County Office of Emergency Services; Mammoth Mountain Ski Area; Mammoth Community Water District; Town of Mammoth Lakes; U.S. Forest Service. 2002. 57 p. \$9.50. Available on the web at <http://geopubs.wr.usgs.gov/bulletin/b2185/>

Persistent unrest in the Long Valley Caldera, characterized by recurring earthquake swarms, inflation of the resurgent dome in the central sections of the caldera, and emissions of magmatic carbon dioxide around Mammoth Mountain, during the last two decades and continuing into the 21st century emphasize that this geologically youthful volcanic system is capable of further volcanic activity. This document describes the U. S. Geological Survey's (USGS) response plan for future episodes of unrest that might augur the onset of renewed volcanism in the caldera or along the Inyo-Mono Craters chain to the north. Central to this response plan is a four-level color code with successive conditions, GREEN (no immediate risk) through RED (eruption under way), reflecting progressively more intense activity levels as summarized in table 1 and 2 and described in detail in section II of this report.

B 2192. Reconnaissance study of the geology of U.S. vermiculite deposits; are asbestos minerals common constituents?, by B. S. Van Gosen, H. A. Lowers, A. L. Bush, G. P. Meeker, G. S. Plumlee, I. K. Brownfield and S. J. Sutley. 2002. 8 p. Available on the web at <http://greenwood.cr.usgs.gov/pub/bulletins/b2192/>

The U.S. Geological Survey is conducting a study to investigate the mineral content of U.S. vermiculite deposits to determine if the amphibole asbestos minerals like those found in the Libby, Montana, deposits are common in other vermiculite deposits. Unusually high incidences of asbestos-related mortality and respiratory disease in Libby have been linked to amphibole mineral fibers intergrowth with the vermiculite deposits mined and milled near the town from 1923 to 1990.

## WATER-SUPPLY PAPER

Water-Supply Papers are comprehensive reports that present significant interpretive results of hydrologic investigations of wide interest to professional geologists, hydrologists, and engineers. The series covers investigations in

all phases of hydrology, including hydrogeology, availability of water, quality of water, and use of water.

W 2497. PENNSYLVANIA. Use of stable isotopes of carbon, nitrogen, and sulfur to identify sources of nitrogen in surface waters in the lower Susquehanna River basin, Pennsylvania, by C. A. Cravotta, III. Prepared in cooperation with the Pennsylvania Department of Environmental Protection. 2002. 99 p. \$15. Available on the web at <http://water.usgs.gov/pubs/wsp/wsp2497/>

With the exception of sewage and septic effluents, most nitrogen sources and soils contain larger proportions of organic and reduced forms of carbon, nitrogen, and sulfur than inorganic, oxidized forms. In contrast, most surface water and ground water contains larger proportions of dissolved inorganic carbon, nitrogen, and sulfur forms than organic forms. Data indicate that carbon, nitrogen, and sulfur are extensively processed in soils and streams.

## CIRCULARS

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 1220. The U. S. Geological Survey and the Chesapeake Bay; the role of science in environmental restoration, edited by S. W. Phillips. 2002. 32 p. Available on the web at <http://pubs.usgs.gov/circ/c1220/>

The Chesapeake Bay is the Nation's largest estuary and historically supported one of the most productive fisheries in the world. In addition to supporting aquatic communities and wildlife, the bay's watershed serves the economic and recreational needs of 15 million people. The fertile soils of the watershed support significant agricultural production. Unfortunately, the commercial, economic, and recreational value of the bay and its watershed has been degraded by poor water quality, loss of habitat, and overharvesting of living resources. Since the early 1980's, the Chesapeake Bay Program, which is a partnership among Maryland, Virginia, Pennsylvania, the District of Columbia, the Federal Government, and the Chesapeake Bay Commission, has been formulating and implementing restoration goals to restore living resources, minimize habitat loss, and reduce the amount of nutrients, sediment, and toxic substances entering the bay. The U.S. Geological Survey has the critical role of providing unbiased scientific information to be used in helping to formulate, implement, and assess the effectiveness of restoration goals in the bay and its watershed.

C 1221. Materials in the economy; material flows, scarcity, and the environment, by L. A. Wagner. 2002. 29 p. Available on the web at <http://greenwood.cr.usgs.gov/pub/circulars/c1221/>

The importance of materials to the economy of the United States is described, including the levels of consumption and uses of materials. The paths (or flows) that materials take from extraction, through processing, to consumer products, and then final disposition are illustrated. Scarcity and environmental issues as they relate to the flow of materials are discussed. Examples for the three main themes of the report (material flows, scarcity, and the environment) are presented.



## MISCELLANEOUS AND SPECIAL BOOKS

### Geographic Names Information System (GNIS)

GNIS, developed by the Geographic Names Office, Mapping Applications Center, 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 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.

### Catalog

Publications of the U.S. Geological Survey, 2001. 2002. 311 p. Available on the web at <http://pubs.usgs.gov/publications/2001/2001.pdf>

### Other Special Books

Making a world of difference; recent USGS contributions to the Nation. 1998. 32 p. Available on the web at <http://www.nwrc.usgs.gov/world/>

### 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 0087-00. Land subsidence in the United States, by D. L. Gallo-way, D. R. Jones and S. E. Ingebritsen. 2000. 4 p. Available on the web at <http://water.usgs.gov/ogw/pubs/fs00087/>

FS 0001-02. NEW YORK. Mapping the sea floor of the Historic Area Remediation Site (HARS) offshore of New York City, by Bradford Butman. 2002. 4 p. Available on the web at <http://pubs.usgs.gov/factsheet/fs001-02/>

FS 0025-02. U. S. coral reefs; imperiled national treasures, by M. E. Field, S. A. Cochran and K. R. Evans. 2002. 4 p. Available on the web at <http://geopubs.wr.usgs.gov/fact-sheet/fs025-02/>

Coral reefs are home to 25% of all marine species. However, the tiny colonial animals that build these intricate limestone masses are dying at alarming rates. If this trend continues, in 20 years the living corals on many of the world's reefs will be dead and the ecosystems that depend on them severely damaged. As part of the effort to protect our Nation's extensive reefs, U. S. Geological Survey (USGS) scientists are working to better understand the processes that affect the health of these ecologically and economically important ecosystems.

FS 0036-02. PENNSYLVANIA. Occurrence of bacteria in Blue Marsh Lake and selected tributaries, Berks County, Pennsylvania; September-October 2001, by M. L. Zimmerman. Prepared in co-operation with the Berks County Conservancy. 2002. 2 p. Available on the web at <http://pa.water.usgs.gov/reports/fs036-02.pdf>

FS 0038-02. Characterization and modes of occurrence of elements in feed coal and fly ash; an integrated approach, by M. E. Brownfield. 2002. 4 p. Available on the web at <http://greenwood.cr.usgs.gov/pub/fact-sheets/fs-0038-02/>

FS 0049-02. The Parkfield experiment; capturing what happens in an earthquake, by Steve Hickman and John Langbein. 2002. 2 p. Available on the web at <http://geopubs.wr.usgs.gov/fact-sheet/fs049-02/>

To better understand what happens on and near a fault before, during, and after an earthquake, the U.S. Geological Survey (USGS) and the California Geological Survey began the Parkfield Earthquake Experiment in the 1980's. Researchers from the USGS and collaborating institutions have created a dense network of instruments on the San Andreas Fault at Parkfield, California, where moderate earthquakes have occurred at fairly regular intervals. Data from these instruments are revealing the earthquake process in unprecedented detail and will aid in predicting the time and severity of future shocks. The USGS and the National Science Foundation plan to expand the Parkfield Experiment by drilling a deep borehole and installing instruments at the actual depths where earthquakes initiate, creating the San Andreas Fault Observatory at Depth.



## MINERALS INFORMATION PERIODICALS

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

**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, 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](mailto: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. These industries are 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. The MII also contains a leading index of metal prices that anticipates changes in the growth rate of a composite nonferrous metals price index for primary aluminum, copper, lead, and zinc. Order single copy from Publication Distribution, Pittsburgh Research Center, P.O. Box 18070, Pittsburgh, PA 15236 (send self-addressed label). Also available on the Internet (<http://minerals.usgs.gov/minerals/pubs/>). *Mailing list additions or changes:* USGS, Publication Services Section, 984 National Center, Reston, VA 20192. For more information contact Gail James 703-648-4915 or Ken Beckman 703-648-4916.

## STONE, CLAY, GLASS, AND CONCRETE PRODUCTS INDUSTRY INDEXES

The Stone, Clay, Glass, and Concrete Products Industry Indexes is a monthly report that analyzes and forecasts the economic health of this broad manufacturing industry using composite leading and coincident indexes. These indexes are similar to the ones in the newsletter, Metal Industry Indicators. This report is available on the Internet (<http://minerals.usgs.gov/minerals/pubs/>). Historical data for the indexes are available back to 1948. For more information contact Gail James 703-648-4915 or Ken Beckman 703-648-4916.

## 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 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 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 2001 edition is available from the Government Printing Office, stock number 024-004-02503-4, \$27.00 domestic; \$33.75 foreign. Data sheets are also available 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/>).



## INFORMAL REPORTS

### WATER-RESOURCES INVESTIGATIONS REPORTS

Water-resources investigations reports are interpretive publications made available to the public outside the formal USGS publications series.

The following WRI reports, priced as indicated, are available from USGS Information Services, Box 25286, Federal Center, Denver, CO 80225 (telephone 303-202-4700). For specific ordering instructions, please refer to "Availability of USGS Products by Mail," on the inside back cover. When ordering, use the WRI number preceding each item. A handling fee of \$5.00 per order applies.

In the water-resources investigations report and the open-file report listings that follow, offices where reports may be inspected but not purchased are identified by the symbols listed below:

- A Earth Science Information Center, Rm. 101, 4230 University Dr., Anchorage, AK 99508-4664.
- Da Library, Rm. C2002, Bldg. 20, Denver Federal Center, Lakewood, CO 80225.
- F Library, 2255 North Gemini Dr., Flagstaff, AZ 86001.
- M Library, 345 Middlefield Rd., Menlo Park, CA 94025.
- NC Library, Rm. 1C402, National Center, 12201 Sunrise Valley Dr., Reston, VA 20192.

WRI 94-4026. WASHINGTON. Multiple flow processes accompanying a dam-break flood in a small upland watershed, Centralia, Washington, by J. E. Costa. 1994. 24 p. Available on the web at <http://vulcan.wr.usgs.gov/Projects/Centralia/framework.html>

WRI 94-4075. WASHINGTON. An updated numerical simulation of the ground-water flow system for the Castle Lake debris dam, Mount St. Helens, Washington, and implications for dam stability against heave, by E. A. Roeloffs. 1994. Available on the web at <http://vulcan.wr.usgs.gov/Volcanoes/MSH/Publications/WRI94-4075/framework.html>

WRI 94-4197. NEBRASKA. Reconnaissance of ground-water quality in the Papio-Missouri River Natural Resources District, eastern

- Nebraska, July through September 1992, by I. M. Verstraeten and M. J. Ellis. Prepared in cooperation with the Papio-Missouri River Natural Resources District and the Nebraska Natural Resources Commission. 1995. 90 p. (NC, Da, M.) Microfiche \$5; paper copy \$24.
- WRI 94-4220. MICHIGAN. Selected geochemical characteristics of ground water from the Marshall Aquifer in the central Lower Peninsula of Michigan, by P. B. Ging, D. T. Long and R. W. Lee. 1996. 19 p. (NC, Da, M.) Microfiche \$5; paper copy \$14.25.
- WRI 96-4129. MINNESOTA, NORTH DAKOTA, SOUTH DAKOTA. Sampling design for assessing water quality of the Red River of the North basin, Minnesota, North Dakota, and South Dakota, 1993-1995, by D. L. Lorenz and J. D. Stoner. National Water-Quality Assessment Program. 1996. 4 p., 2 over-size sheets, scale 1:750,000 (1 inch = about 12 miles) and scale 1:500,000 (1 inch = about 8 miles). (NC, Da, M.) \$33.
- WRI 98-4106. NEBRASKA. Nitrate concentrations in ground water in the paleovalley alluvial aquifers of the Nemaha Natural Resources District, Nebraska, 1989 and 1994-96, by A. H. Chen. Prepared in cooperation with the Nemaha Natural Resources District. 1998. 1 over-size sheet. (NC, Da, M.) \$4.
- WRI 98-4197. NEW YORK. Thickness of unconsolidated deposits in the towns of Solon and Taylor, Cortland County, New York, by T. S. Miller. Prepared in cooperation with the Cortland County Department of Planning. 1998. 1 over-size sheet. (NC, Da, M.) \$4. Available on the web at <http://ny.water.usgs.gov/pubs/wri/wri984197/>
- WRI 99-4013. WASHINGTON. Ground-water hydrology of the Tacoma-Puyallup area, Pierce County, Washington, by M. A. Jones, L. A. Orr, J. C. Ebbert and S. S. Sumioka. Prepared in cooperation with the Washington Department of Ecology; Tacoma-Pierce County Health Department; City of Puyallup; City of Tacoma. 1999. 154 p. (NC, Da, M.) \$4.
- WRI 99-4127. NORTH CAROLINA. Water-level conditions in the upper Cape Fear Aquifer, 1994-98, in parts of Bladen and Robeson counties, North Carolina, by A. G. Strickland. 1999. 1 over-size sheet. (NC, Da, M.) \$4.
- WRI 99-4170. PENNSYLVANIA. Hydrologic effects of the Pymatuning earthquake of September 25, 1998, in northwestern Pennsylvania, by G. M. Fleeger, D. J. Goode, T. F. Buckwalter and D. W. Risser. 1999. 8 p. Available on the web at <http://pa.water.usgs.gov/reports/wri99-4170/index.html>
- WRI 99-4232. OKLAHOMA. Depth-duration frequency of precipitation for Oklahoma, by R. L. Tortorelli, Alan Rea and W. H. Asquith. Prepared in cooperation with the Oklahoma Department of Transportation. 1999. 113 p. (NC, Da, M.) \$4.
- WRI 00-4036. Measurement of stream discharge by wading, by K. M. Nolan and R. R. Shields. 2000. One CD-ROM. (NC, Da, M.) \$4.
- This CD-ROM has been produced in accordance with the ISO 9660 Standard and is therefore capable of being read on any computing platform that has appropriate CD-ROM driver software installed.
- WRI 00-4083. CALIFORNIA. Application of advanced geophysical logging methods in the characterization of a fractured-sedimentary bedrock aquifer, Ventura County, California, by J. H. Williams, J. W. Lane, Jr., Kamini Singha and F. P. Haeni. Prepared in cooperation with the University of Waterloo, Canada. 2002. 28 p. (NC, Da, M.) \$4.
- WRI 00-4106. IOWA, MINNESOTA. Ground-water quality in alluvial aquifers in the eastern Iowa basins, Iowa and Minnesota, 1998, by E. M. Sadorf and S. M. Linhart. National Water-Quality Assessment Program. 2000. 46 p. (NC, Da, M.) \$4.
- WRI 00-4117. ARIZONA. Ground-water quality in the upper Santa Cruz Basin, Arizona, 1998, by A. L. Coes, D. J. Gellenbeck, D. C. Towne and M. C. Freark. National Water-Quality Assessment Program. 2000. 55 p. (NC, Da, M.) \$4.
- WRI 00-4118. WASHINGTON. Occurrence of pesticides in streams and ground water in the Puget Sound basin, Washington, and British Columbia, 1996-98, by G. C. Bortleson and J. C. Ebbert. 2000. 14 p. (NC, Da, M.) \$4.
- WRI 00-4143. NEW JERSEY, DELAWARE. Water levels in, extent of freshwater in, and water withdrawals from ten confined aquifers, New Jersey and Delaware coastal plain, 1998, by P. J. Lacombe and Robert Rosman. Prepared in cooperation with the New Jersey Department of Environmental Protection. 2001. 10 over-size sheets. (NC, Da, M.) \$4.
- WRI 00-4164. CALIFORNIA. Bathymetry and selected perspective views of central San Francisco Bay, California, by J. V. Gardner, Peter Dartnell, L. A. Mayer, J. E. Hughes and J. C. Stone. 2000. 2 over-size sheets, scale 1:15,000 (1 inch = 1250 feet.) (NC, Da, M.) \$4.
- WRI 00-4169. Occurrence, distribution, and loads of selected pesticides in streams in the Lake Erie-Lake St. Clair basin, 1996-98, by J. W. Frey. National Water-Quality Assessment Program. 2001. 69 p. (NC, Da, M.) \$4.
- WRI 00-4181. Ground-water flooding in glacial terrain, by Myrtle Jones, Joseph Jones and Theresa Olsen. 2000. 1 over-size sheet. (NC, Da, M.) \$4.
- WRI 00-4275. NEW YORK. Simulated transport and biodegradation of chlorinated ethenes in a fractured dolomite aquifer near Niagara Falls, New York, by R. M. Yager. Prepared in cooperation with the New York State Department of Environmental Conservation. 2000. 55 p. (NC, Da, M.) \$4.
- WRI 00-4276. NEW YORK. Use of advanced borehole geophysical techniques to delineate fractured-rock ground-water flow and fractures along water-tunnel facilities in northern Queens County, New York, by Frederick Stumm, Anthony Chu, A. D. Lange, F. L. Paillet, J. H. Williams and J. W. Lane, Jr. 2001. 12 p. (NC, Da, M.) \$4. Available on the web at <http://ny.usgs.gov/pubs/wri/wri004276/>
- WRI 01-4021. WEST VIRGINIA, VIRGINIA, NORTH CAROLINA. Benthic invertebrate communities and their responses to selected environmental factors in the Kanawha River basin, West Virginia, Virginia, and North Carolina, by D. B. Chambers and Terence Messinger. National Water-Quality Assessment Program. 2001. 52 p. (NC, Da, M.) \$4.
- WRI 01-4033. CONNECTICUT. Borehole-geophysical investigation of the University of Connecticut landfill, Storrs, Connecticut, by C. D. Johnson, F. P. Haeni, J. W. Lane, Jr. and E. A. White. Pre-

- pared in cooperation with the University of Connecticut. 2002. 187 p. (NC, Da, M.) \$4.
- WRI 01-4111. MINNESOTA. Effects of ground-water withdrawals on flow in the Sauk River Valley Aquifer and on streamflow in the Cold Spring area, Minnesota, by R. J. Lindgren. Prepared in cooperation with the City of Cold Spring, Minnesota. 2001. 37 p. (NC, Da, M.) \$4.
- WRI 01-4117. NEW JERSEY. Effects of land use and travel time on the distribution of nitrate in the Kirkwood-Cohansey aquifer system in southern New Jersey, by L. J. Kauffman, A. L. Baehr, M. A. Ayers and P. E. Stackelberg. National Water-Quality Assessment Program. 2001. 49 p. (NC, Da, M.) \$4.
- WRI 01-4126. ARIZONA. Ground-water quality in the West Salt River valley, Arizona, 1996-98; relations to hydrogeology, water use, and land use, by R. J. Edmonds and D. J. Gellenbeck. National Water-Quality Assessment Program. 2002. 60 p. (NC, Da, M.) \$4.
- WRI 01-4144. ARIZONA. Occurrence and distribution of pesticides and volatile organic compounds in ground water and surface water in central Arizona basins, 1996-98, and their relation to land use, by D. J. Gellenbeck and D. W. Anning. National Water-Quality Assessment Program. 2002. 107 p. (NC, Da, M.) \$4.
- WRI 01-4153. MASSACHUSETTS. Hydrology and trophic ecology of Walden Pond, Concord, Massachusetts, by P. J. Friesz and J. A. Colman. Prepared in cooperation with the Massachusetts Department of Environmental Management. 2001. 1 over-size sheet. (NC, Da, M.) \$4.
- WRI 01-4158. FLORIDA. Approach for delineation of contributing areas and zones of transport to selected public-supply wells using a regional ground-water flow model, Palm Beach County, Florida, by R. A. Renken, R. D. Patterson, L. L. Orzol and Joann Dixon. Prepared in cooperation with the Palm Beach County Department of Environmental Resources; South Florida Water Management District. 2001. 56 p. (NC, Da, M.) \$4.
- WRI 01-4177. ARIZONA. Trichloroethylene and 1,1-dichloroethylene concentrations in ground water after temporary shutdown of the reclamation well field at Air Force Plant 44, Tucson, Arizona, 1999, by D. D. Graham, T. J. Allen, M. L. Barackman, W. H. DiGiuseppi and M. F. Wallace. Prepared in cooperation with the U.S. Air Force. 2001. 40 p. (NC, Da, M.) \$4.
- WRI 01-4178. Variability of pesticide detections and concentrations in field replicate water samples collected for the National Water-Quality Assessment Program, 1992-97, by J. D. Martin. National Water-Quality Assessment Program. 2002. 84 p. (NC, Da, M.) \$4.
- WRI 01-4185. ALABAMA, TENNESSEE. Water quality of the Flint River basin, Alabama and Tennessee, 1999-2000, by A. B. Hoos, J. W. Garrett and R. R. Knight. National Water-Quality Assessment Program. 2002. 37 p. (NC, Da, M.) \$4.
- WRI 01-4186. Methods of analysis by the U. S. Geological Survey National Water Quality Laboratory; determination of wastewater compounds by polystyrene-divinylbenzene solid-phase extraction and capillary-column gas chromatography/mass spectrometry, by S. D. Zaugg, S. G. Smith, M. P. Schroeder, L. B. Barber and M. R. Burkhardt. 2002. 37 p. (NC, Da, M.) \$4.
- WRI 01-4209. ARIZONA. Determination of channel change for selected streams, Maricopa County, Arizona, by J. P. Capesius and T. W. Lehman. Prepared in cooperation with the Flood Control District of Maricopa County. 2002. 63 p. (NC, Da, M.) \$4.
- WRI 01-4211. WASHINGTON. Pesticides in surface water of the Yakima River basin, Washington, 1999-2000; their occurrence and an assessment of factors affecting concentrations and loads, by J. C. Ebbert and S. S. Embrey. 2002. 49 p. (NC, Da, M.) \$4.
- WRI 01-4221. INDIANA. Geohydrology, water quality, and simulation of ground-water flow in the vicinity of a former waste-oil refinery near Westville, Indiana, 1997-2000, by R. F. Duwelius, D. J. Yeskis, J. T. Wilson and B. A. Robinson. Prepared in cooperation with the U.S. Environmental Protection Agency. 2002. 161 p. (NC, Da, M.) \$4.
- WRI 01-4236. A two-dimensional hydrodynamic model of the St. Clair-Detroit River waterway in the Great Lakes basin, by D. J. Holschlag and J. A. Koschik. Prepared in cooperation with the Michigan Department of Environmental Quality, Source Water Assessment Program; Detroit Water and Sewerage Department. 2002. 63 p. (NC, Da, M.) \$4.
- WRI 01-4237. UTAH. Seepage investigation for Leap, South Ash, Wet Sandy, and Leeds creeks in the Pine Valley Mountains, Washington County, Utah, 1998, by D. E. Wilberg, R. L. Swenson, B. A. Slaugh, J. H. Howells and H. K. Christiansen. Prepared in cooperation with the U.S. Department of Justice; U.S. Department of Agriculture, U.S. Forest Service. 2001. 42 p. (NC, Da, M.) \$4.
- WRI 01-4238. MONTANA, WYOMING. Chemical and biological indicators of nutrient enrichment in the Yellowstone River basin, Montana and Wyoming, August 2000; study design and preliminary results, by D. A. Peterson, S. D. Porter and S. M. Kinsey. National Water-Quality Assessment Program. 2001. 6 p. (NC, Da, M.) \$4.
- WRI 01-4244. Spatial patterns and temporal variability in water quality from City of Albuquerque drinking-water supply wells and piezometer nests, with implications for the ground-water flow system, by L. M. Bexfield and S. K. Anderholm. Prepared in cooperation with the City of Albuquerque. 2002. 101 p. (NC, Da, M.) \$4.
- WRI 01-4252. WASHINGTON. Simulation of ground-water flow and potential contaminant transport at Area 6 Landfill, Naval Air Station Whidbey Island, Island County, Washington, by F. W. Simonds. Prepared in cooperation with Department of the Navy, Engineering Field Activity Northwest, Naval Facilities Engineering Command. 2002. 52 p. (NC, Da, M.) \$4. Available on the web at <http://water.usgs.gov/pubs/wri/wri014252/>
- WRI 01-4253. TEXAS. Computed and estimated pollutant loads, West Fork Trinity River, Fort Worth, Texas, 1997, by P. W. McKee and H. C. McWreath. Prepared in cooperation with the Trinity River Authority. 2001. 16 p. (NC, Da, M.) \$4.
- WRI 01-4257. ARIZONA. Characteristics of shallow deposits beneath Rillito Creek, Pima County, Arizona, by J. P. Hoffmann, M. A. Ripich and K. M. Ellett. Prepared in cooperation with the Arizona Department of Water Resources. 2002. 51 p., 3 over-size sheets. (NC, Da, M.) \$4.
- WRI 01-4261. PENNSYLVANIA. Evaluation of borehole geophysical logging, aquifer-isolation tests, distribution of contaminants,

- and water-level measurements at the North Penn Area 5 Superfund Site, Bucks and Montgomery counties, Pennsylvania, by P. H. Bird and R. W. Conger. Prepared in cooperation with the U.S. Environmental Protection Agency. 2002. 79 p. (NC, Da, M.) Available on the web at <http://pa.water.usgs.gov/reports/wrir01-4261.pdf>
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- of Geol. & Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645; U.S. Dep. of Interior, Alaska Resources Library, 3150 C St. #100, Anchorage, AK 99503-3916.) Available on the web at  
<http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-02-0139/>
- OF 02-0142. Post-glacial inflation-deflation cycles, tilting, and faulting in the Yellowstone Caldera based on Yellowstone Lake shorelines, by K. L. Pierce, K. P. Cannon, G. A. Meyer, M. J. Trebesch and R. D. Watts. 30 p. (NC, M, Da; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071.) Available on the web at  
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- OF 02-0144. Methods of installing United States National Seismographic Network (USNSN) stations; a construction manual, by J. R. McMillan. 23 p. (NC, Da, M.) Available on the web at  
<http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-02-0144/>
- OF 02-0149. Asbestos, by R. L. Virta. 35 p. (NC, Da, M.) \$9.
- OF 02-0158. Molokai fieldtrip guidebook; selected aspects of the geology, geography, and coral reefs of Molokai, by S. A. Cochran, L. M. Roberts and K. R. Evans. 55 p. (NC, Da, M.) Available on the web at  
<http://geopubs.wr.usgs.gov/open-file/of02-158/>
- OF 02-0161. Thermodynamic data for modeling acid mine drainage problems; compilation and estimation of data for selected soluble iron-sulfate minerals, by B. S. Hemingway, R. R. Seal, II and I-Ming Chou. 13 p. (NC, Da, M.) \$5. Available on the web at  
<http://pubs.usgs.gov/of/2002/of02-161/>
- OF 02-0162. CALIFORNIA. Multibeam mapping of the Los Angeles, California margin, by J. V. Gardner and Peter Dartnell. (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 on the web at  
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- OF 02-0165. Molybdenum recycling in the United States in 1998, by J. W. Blossom. 10 p. (NC, Da, M.) \$5. Available on the web at  
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- OF 02-0166. GPR data processing computer software for the PC, by J. E. Lucius and M. H. Powers. 101 p. (NC, M, Da.) Available on the web at  
<http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-02-0166/>
- OF 02-0171. Use's guide to HYPOINVERSE-2000, a Fortran program to solve for earthquake locations and magnitudes, by F. W. Klein. 123 p. (NC, Da, M.) Available on the web at  
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- OF 02-0174. WYOMING, MONTANA. Quality of economically extractable coal beds in the Gillette coal field as compared with other Tertiary coal beds in the Powder River basin, Wyoming and Montana, by M. S. Ellis. 20 p. (NC, M, Da; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071; Montana Bur. of Mines & Geol., Montana Coll. of Mineral Sci. & Technol., Butte, MT 59701.) Available on the web at  
<http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-02-0174/>
- OF 02-0176. Pick\_sw; a program for interactive picking of S-wave data, version 2.0, by Karl Ellefsen. 9 p. (NC, M, Da.) Available on the web at  
<http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-02-0176/>
- OF 02-0177. ALASKA. Magnetotelluric data along the Tangle Lakes profile, Alaska, by J. A. Sampson and B. D. Rodriguez. 145 p. (NC, M, Da, A; Div. of Geol. & Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645; U.S. Dep. of Interior, Alaska Resources Library, 3150 C St. #100, Anchorage, AK 99503-3916.) Available on the web at  
<http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-02-0177/>
- OF 02-0180. WYOMING. Evaluation of economically extractable coal resources in the Gillette coal field, Powder River basin, Wyoming, by M. S. Ellis, C. L. Molnia, L. M. Osmonson, A. M. Ochs, T. J. Rohrbacher, Tracy Mercier and L. N. R. Roberts. 48 p. (NC, M, Da; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071.) Available on the web at  
<http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-02-0180/>
- OF 02-0183. Experiments in seismometer azimuth determination by comparing the sensor signal outputs with the signal output of an oriented sensor, by G. L. Holcomb. 205 p. (NC, M, Da.) Available on the web at  
<http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-02-0183/>
- OF 02-0184. MISSOURI, SOUTH CAROLINA. Modified Mercalli intensities (MMI) for large earthquakes near New Madrid, Missouri, in 1811-1812 and near Charleston, South Carolina, in 1886, by W. H. Bakun, A. C. Johnston and M. G. Hopper. 31 p. (NC, Da, M.) Available on the web at  
<http://geopubs.wr.usgs.gov/open-file/of02-184/>
- OF 02-0189. Rare earth element mines, deposits, and occurrences, by G. J. Orris and R. I. Grauch. 167 p. (NC, Da, M.) Available on the web at  
<http://geopubs.wr.usgs.gov/open-file/of02-189/>
- OF 02-0195. Progress on geoenvironmental models for selected mineral deposit types, edited by R. R. Seal, II and N. K. Foley. 213 p. (NC, Da, M.) Available on the web at  
<http://pubs.usgs.gov/of/2002/of02-195/>
- A. Introduction to geoenvironmental models of mineral deposits, by R. R. Seal, II, N. K. Foley and R. B. Wanty. p. 1-7. Available on the web at  
<http://pubs.usgs.gov/of/2002/of02-195/OF02-195A.pdf>
- B. Geochemical and mineralogic characterization of solids and their effects on waters in metal-mining environments, by J. M. Hammarstrom and K. S. Smith. p. 8-54. Available on the web at  
<http://pubs.usgs.gov/of/2002/of02-195/OF02-195B.pdf>
- C. Toolkit for the rapid screening and characterization of waste piles on abandoned mine lands, by K. S. Smith, D. L. Campbell, G. A. Desborough, P. L. Hageman, R. W. Leinz, M. R. Stanton, S. J. Sutley, G. A. Swayze and D. B. Yager. p. 55-64. Available on the web at  
<http://pubs.usgs.gov/of/2002/of02-195/OF02-195C.pdf>
- D. Environmental behavior of two molybdenum porphyry systems, by M. L. Tuttle, R. B. Wanty and B. R. Berger. p. 65-86. Available on the web at  
<http://pubs.usgs.gov/of/2002/of02-195/OF02-195D.pdf>



- E. Environmental geochemistry of platform carbonate-hosted sulfide deposits, by N. K. Foley. p. 87-100. Available on the web at <http://pubs.usgs.gov/of/2002/of02-195/OF02-195E.pdf>
- F. VIRGINIA. A geoenvironmental lifecycle model; the Austinville platform carbonate deposit, Virginia, by N. K. Foley. p. 101-107. Available on the web at <http://pubs.usgs.gov/of/2002/of02-195/OF02-195F.pdf>
- G. A geoenvironmental mineral deposit model for the New World polymetallic replacement/skarn deposit, by L. B. Kirk and A. R. Kirk. p. 108-114. Available on the web at <http://pubs.usgs.gov/of/2002/of02-195/OF02-195G.pdf>
- H. Environmental geochemistry of skarn and polymetallic carbonate-replacement deposit models, by J. M. Hammarstrom. p. 115-142. Available on the web at <http://pubs.usgs.gov/of/2002/of02-195/OF02-195H.pdf>
- I. COLORADO, NEVADA. A geoenvironmental model for polymetallic vein deposits; a case study in the Coeur d'Alene mining district and comparisons with drainage from mineralized deposits in the Colorado mineral belt and Humboldt Basin, Nevada, by L. S. Balistrieri, S. E. Box and A. A. Bookstrom. p. 143-160. Available on the web at <http://pubs.usgs.gov/of/2002/of02-195/OF02-195I.pdf>
- J. Mercury geoenvironmental models, by J. J. Rytuba. p. 161-175. Available on the web at <http://pubs.usgs.gov/of/2002/of02-195/OF02-195J.pdf>
- K. Geoenvironmental model for low-sulfide gold-quartz veins, by R. P. Ashley. p. 176-195. Available on the web at <http://pubs.usgs.gov/of/2002/of02-195/OF02-195K.pdf>
- L. Geoenvironmental models for seafloor massive sulfide deposits, by R. R. Seal, II, J. M. Hammarstrom, N. K. Foley and C. N. Alpers. p. 196-212. Available on the web at <http://pubs.usgs.gov/of/2002/of02-195/OF02-195L.pdf>
- Appendix; Definitions and references for aqueous geochemistry, by L. S. Balistrieri. p. 213. Available on the web at <http://pubs.usgs.gov/of/2002/of02-195/OF02-195Apx1.pdf>
- OF 02-0196. MINNESOTA. Bedrock and soil geochemistry from Voyageurs National Park, Minnesota, by L. G. Woodruff, W. F. Cannon, C. L. Dicken and Shana Pimley. 8 p., 1 over-size sheet. (NC, Da, M.) Available on the web at <http://pubs.usgs.gov/of/2002/of02-196/>
- OF 02-0199. UTAH. AVIRIS data calibration information; Wasatch Mountains and Park City region, Utah, by B. W. Rockwell, R. N. Clark, K. E. Livo, R. R. McDougal and R. F. Kokaly. (NC, M, Da; Utah Geol. Surv., 1594 West North Temple, Suite 3110, P.O. Box 146100, Salt Lake City, UT 84114-6100.) Available on the web at <http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-02-0199/>
- OF 02-0200. UTAH. AVIRIS data calibration information; Oquirrh and East Tintic mountains, Utah, by B. W. Rockwell, R. N. Clark, K. E. Livo, R. R. McDougal and R. F. Kokaly. (NC, M, Da; Utah Geol. Surv., 1594 West North Temple, Suite 3110, P.O. Box 146100, Salt Lake City, UT 84114-6100.) Available on the web at <http://greenwood.cr.usgs.gov/pub/open-file-reports/ofr-02-0200/>
- OF 02-0203. CALIFORNIA. Borehole velocity measurements at five sites that recorded the Cape Mendocino, California earthquake of 25 April, 1992, by J. F. Gibbs, J. C. Tinsley and D. M. Boore. 48 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.) \$12.50. Available on the web at <http://geopubs.wr.usgs.gov/open-file/of02-203/>
- OF 02-0206. Environmental atlas of the Lake Pontchartrain Basin, edited by Shea Penland, Andrew Beall and Jack Kindinger. (NC, Da, M.) Available on the web at <http://pubs.usgs.gov/of/2002/of02-206/>
- OF 02-0207. ALASKA. U. S. Geological Survey 2002 petroleum resource assessment of the National Petroleum Reserve in Alaska (NPRa); play maps and technically recoverable resource estimates, by K. J. Bird and D. W. Houseknecht. 18 p. (NC, Da, M, A; Alaska Resource Library Information Services [ARLIS], 3150 C St., Suite 100, Anchorage, AK 99503; Alaska Dep. of Natural Resources, Div. of Geol. & Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.) Available on the web at <http://geopubs.wr.usgs.gov/open-file/of02-207/>
- OF 02-0225. CALIFORNIA. Data from theodolite measurements of creep rates on San Francisco Bay region faults, California; 1979-2001, by J. S. Galehouse. 94 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 on the web at <http://geopubs.wr.usgs.gov/open-file/of02-225/>

### Reports Available Only Through Certain USGS Field Offices

For information on availability and price of these reports, write to the address indicated by a dagger (†) in the listing for the report.

- OF 98-0759. Sedimentation and bathymetric change in San Pablo Bay, 1856-1983, by B. E. Jaffe, R. E. Smith and L. Z. Torresan. (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.) †Posters to be supplied on demand; contact Bruce Jaffe 650-329-5155.



## THEMATIC MAPS AND CHARTS

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Maps on planimetric or topographic bases; regular and irregular areas; various scales; a wide variety of format and subject matter. The series also includes 7 1/2-minute quadrangle photogeologic maps on planimetric bases which show geology as interpreted from aerial photographs. Series also includes maps of Mars and the Moon.



I-0797. MONTANA. Geologic map of the Stillwater Complex, Montana; a digital database, compiled by N. J. Page, W. J. Nokleberg and R. J. Miller. 2002. 29 p. (Map originally published in 1974.) Available on the web at <http://geopubs.wr.usgs.gov/i-map/i797/>

### 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. Maps on planimetric or topographic bases; regular and irregular areas; various scales; a wide variety of format and subject matter. The series also includes 7 1/2-minute quadrangle photogeologic maps on planimetric bases which show geology as interpreted from aerial photographs. Series also includes maps of Mars and the Moon.

I-2645-A. UTAH. Geologic map of the central Marysvale volcanic field, southwestern Utah, by P. D. Rowley, C. G. Cunningham, T. A. Steven, J. B. Workman, J. J. Anderson and K. M. Theissen. 2002. Lat 38°15' to 38°42'30", long 112° to 112°37'30". Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 57 by 34 inches (in color). \$7. Available on the web at <http://greenwood.cr.usgs.gov/pub/i-maps/i-2645-a/>

I-2730. Geologic map of MTM-40252 and -40257 quadrangles, Reull Vallis region of Mars, by S. C. Mest and D. A. Crown. Prepared for the National Aeronautics and Space Administration. 2002. Lat -42.5° to -37.5°, long 250° to 260°. Scale 1:1,004,000 (1 mm = 1.004 km) at 255° longitude. Sheet 46 1/2 by 38 inches (in color). (Transverse Mercator projection.) \$7.

I-2746. Geologic map transecting the highland/lowland boundary zone, Arabia Terra, Mars; quadrangles 30332, 35332, 40332, and 45332, by G. E. McGill, University of Massachusetts. Prepared for the National Aeronautics and Space Administration. 2002. Lat 27.5° to 47.5°, long 330° to 335°. Scale 1:1,004,000 (1 mm = 1,004 km) at 50° latitude. Sheet 52 1/2 by 39 inches (in color). (Transverse Mercator projection.) \$7.

I-2751. CALIFORNIA. Geologic map of the Yosemite Quadrangle, central Sierra Nevada, California, by D. L. Peck. 2002. Lat 37°30' to 37°45', long 119°30' to 119°45'. Scale 1:62,500 (1 inch = about 1 mile). Sheet 45 by 31 inches (in color). \$7.

I-2762. Controlled color photomosaic map of Ganymede. Prepared for the National Aeronautics and Space Administration. 2002. Lat 180° to 180°, long -57° to 57°; lat 180° to 180°, long 55° to 90°; lat 180° to 180°, long -55° to -90°. Scale 1:15,000,000 (1 mm = 15 km) at 0° latitude, Mercator projection; 1:8,388,000 (1 mm = 8.39 km) at -56° and 56° latitude, Polar Stereographic projection; 1:9,172,068 (1 mm = 9.17 km) at -90° and 90° latitude, Polar Stereographic projection. Sheet 46 by 40 inches (in color). \$7.

This controlled color photomosaic map of Ganymede was created using the best image quality and moderate resolution coverage (from 20 km/pixel for gap fill to as much as 180 m/pixel) supplied by Galileo SSI and Voyager 1 and 2. This map uses the most recent geometric control network for Ganymede, which was computed by the RAND Corporation in November 1999. Prominent features visible on the map are labeled with names approved by the International Astronomical Union.

### 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-2344. CALIFORNIA. Geologic map of the Sheep Hole Mountains 30' × 60' quadrangle, San Bernardino and Riverside counties, California, by K. A. Howard. 2002. Two sheets. Lat 34° to 34°30', long 115° to 116°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 1, 57 by 32 inches; sheet 2, 46 by 31 inches (both in color). (Map-on-demand.) \$40. Available on the web at <http://geopubs.wr.usgs.gov/map-mf/mf2344/>

MF-2372. NEVADA, CALIFORNIA. Hydrostructural maps of the Death Valley region flow system, Nevada and California, by C. J. Potter, D. S. Sweetkind, R. P. Dickerson and M. L. Killgore. Prepared in cooperation with the U.S. Department of Energy, National Nuclear Security Administration, Nevada Operations Office. 2002. Two sheets. Lat 35° to 38°15', long 115° to 118°. Scale 1:350,000 (1 inch = about 6 miles). Both sheets 34 by 50 inches (in color). (Accompanied by 12 page text.) (Map-on-demand.) \$40. Available on the web at <http://greenwood.cr.usgs.gov/pub/mf-maps/mf-2372/>

MF-2373. CALIFORNIA. Geologic maps and structure sections of the southwestern Santa Clara Valley and southern Santa Cruz Mountains, Santa Clara and Santa Cruz counties, California, by R. J. McLaughlin, J. C. Clark, E. E. Brabb, E. J. Helley and C. J. Colón. 2001. Eight sheets. (Accompanied by 13 page text.) (Map-on-demand.) \$160. Available on the web at <http://geopubs.wr.usgs.gov/map-mf/mf2373/>

SHEET 1. Los Gatos Quadrangle, by R. J. McLaughlin, J. C. Clark, E. E. Brabb and E. J. Helley. Lat 37°07'30" to 37°15', long 121°52'30" to 122°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 21 by 31 inches (in color). Available on the web at <http://geopubs.wr.usgs.gov/map-mf/mf2373/lgmap.pdf>

SHEET 2. Laurel Quadrangle, by J. C. Clark, E. E. Brabb and R. J. McLaughlin. Lat 37° to 37°07'30", long 121°52'30" to 122°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 21 by 31 inches (in color). Available on the web at <http://geopubs.wr.usgs.gov/map-mf/mf2373/lrmap.pdf>

SHEET 3. Loma Prieta Quadrangle, by R. J. McLaughlin, J. C. Clark and E. E. Brabb. Lat 37° to 37°07'30", long 121°45' to 122°52'30". Scale 1:24,000 (1 inch = 2000 feet). Sheet 21 by 31 inches (in color). Available on the web at <http://geopubs.wr.usgs.gov/map-mf/mf2373/lpmap.pdf>

SHEET 4. Santa Teresa Hills and southwestern part of the Morgan Hill quadrangles, by R. J. McLaughlin and E. J. Helley. Lat 37°07'30" to 37°15', long 121°37'30" to 121°52'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 38 by 26 inches (in color). Available on the web at <http://geopubs.wr.usgs.gov/map-mf/mf2373/sth-mhmap.pdf>

SHEET 5. Mt. Madonna and southwestern part of the Gilroy quadrangles, by R. J. McLaughlin, E. J. Helley and C. J. Colón. Lat 37° to 37°07'30", long 121°32'45.6" to 121°45'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 31 by 30 inches (in color).



Available on the web at  
<http://geopubs.wr.usgs.gov/map-mf/mf2373/mm-glmap.pdf>

SHEET 7. Structure sections of the Los Gatos Quadrangle and structure section of the Santa Teresa Hills Quadrangle, by R. J. McLaughlin, J. C. Clark, E. E. Brabb, E. J. Helley and C. J. Colón. Sheet 36 by 43 inches (in color). Available on the web at  
<http://geopubs.wr.usgs.gov/map-mf/mf2373/scvxsec1.pdf>

SHEET 8. Structure sections of the Laurel Quadrangle and structure sections of the Loma Prieta Quadrangle, by R. J. McLaughlin, J. C. Clark, E. E. Brabb, E. J. Helley and C. J. Colón. Sheet 28 by 38 inches (in color). Available on the web at  
<http://geopubs.wr.usgs.gov/map-mf/mf2372/scvxsec2.pdf>

MF-2374. MISSOURI, KANSAS. Geologic map of the Saint Joseph area, Missouri and Kansas, by W. H. Langer, L. L. Brady, David Smith and R. A. Melick. 2001. Lat 39°30' to 40°, long 94°37'30" to 95°. Scale 1:63,360 (1 inch = 1 mile). Sheet 45 by 51 inches (in color). (Map-on-demand) \$20. Available on the web at  
<http://rockyweb.cr.usgs.gov/mod/images/MF2374p.gif>

MF-2377. COLORADO. Generalized geologic map of part of the upper Animas River watershed and vicinity, Silverton, Colorado, by D. B. Yager and D. J. Bove. 2002. Lat 37°45' to 38°, long 107°30' to 107°52'30". Scale 1:48,000 (1 inch = 4,000 feet). Sheet 49 by 30 inches (in color). (Map-on-demand.) \$20. Available on the web at  
<http://greenwood.cr.usgs.gov/pub/mf-maps/mf-2377/>

MF-2384. CALIFORNIA. Debris flows triggered by the El Niño rainstorm of February 2-3, 1998, Walpert Ridge and vicinity, Alameda County, California, by J. A. Coe and J. W. Godt. 2001. Three sheets. Sheets 1 and 3, lat 37°32'30" to 37°40', long 121°52'30" to 122°04'30". Scale 1:24,000 (1 inch = 2,000 feet). All sheets 58 by 36 inches (in color). (Map-on-demand) \$60. Available on the web at  
<http://greenwood.cr.usgs.gov/pub/mf-maps/mf-2384/>

MF-2388. COLORADO. Generalized surficial geology map of the Pueblo 1° × 2° quadrangle, Colorado, by D. W. Moore, A. W. Straub, M. E. Berry, M. L. Baker and T. R. Brandt. 2002. Lat 38° to 39°, long 104° to 106°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 56 by 24 inches (in color). (Accompanied by 25 page text.) (Map-on-demand.) \$20. Available on the web at  
<http://greenwood.cr.usgs.gov/pub/mf-maps/mf-2388/>

MF-2391. NEBRASKA, IOWA. Surficial geologic map of the greater Omaha area, Nebraska and Iowa, by R. R. Shroba, T. R. Brandt and J. C. Blossom. 2001. Lat 41° to 41°22'30", long 95°52'30" to 96°15'. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 36 by 29 inches (in color). (Map-on-demand.) \$20. Available on the web at  
<http://greenwood.cr.usgs.gov/pub/mf-maps/mf-2391/>

## HYDROLOGIC INVESTIGATIONS ATLASES

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

HA-0747. SOUTH DAKOTA. Atlas of water resources in the Black Hills area, South Dakota, by J. M. Carter, D. G. Driscoll, J. E. Williamson, U.S. Geological Survey; and V. A. Lindquist, West Dakota Water Development District. Prepared in cooperation with

the South Dakota Department of Environment and Natural Resources and the West Dakota Water Development District. 2002. 120 p. Lat 43°15' to 44°45', long 103° to 104°. All sheets 11 by 17 inches (in color). \$7.

The water resources of the Black Hills area are described, with emphasis on the Madison and Minnelusa aquifers. The quantity and quality of water from major aquifers in the Black Hills area, including the Inyan Kara, Minnekahta, Minnelusa, Madison, and Deadwood aquifers are characterized. Streamflow and surface-water quality are summarized. Precipitation data are summarized for 1931-98. Hydrologic budgets are presented for 1950-98 for ground water and surface 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.**

Abdallah Al-Zoubi\* and Uri ten Brink. Lower crustal flow and the role of shear in basin subsidence; an example from the Dead Sea basin. *Earth and Planetary Science Letters*. v. 199, no. 1-2, May 30, 2002. p. 67-79.

W. M. Alley. Some reflections on the sustainability of water resources, *in* Sustainability of energy and water through the 21st century; proceedings of the Arbor Day Farm conference. (L. C. Gerhard, editor and others). (American Association of Petroleum Geologists). 2002. p. 81-87. *Available at:* Kansas Geological Survey, Lawrence, KS, United States.

C. N. Alpers, J. L. Jambor\* and D. K. Nordstrom (editors). Sulfate minerals; crystallography, geochemistry, and environmental significance. *Reviews in Mineralogy and Geochemistry*. 40, 2000. 602 p.

Y. V. Amelin\*, E. Y. Rytsk\*, R. S. Krymskii\*, L. A. Neimark\* and S. G. Skublov. Vendian age of enderbite from a granulite complex of the Baikal-Muya ophiolite belt, northern Baikal region. *Doklady Earth Sciences*. v. 371A, no. 3, April 2000. p. 455-457.

M. P. Anderson\*, R. J. Hunt, J. T. Krohelski and Kuopo Chung\*. Using high hydraulic conductivity nodes to simulate seepage lakes. *Ground Water*. v. 40, no. 2, March 2002. p. 117-122.

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## 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.**

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