Publications of the U.S. Geological Survey, 1993

U.S. DEPARTMENT OF THE INTERIOR

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1994

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Publications of the U.S. Geological Survey

This catalog is a list of (1) books and maps[1] that were published during 1993, and (2) articles by U.S. Geological Survey personnel in non-U.S. Geological Survey journals and books that came to our attention in 1993; it supplements the permanent catalogs "Publications of the Geological Survey, 1879-1961", "Publications of the Geological Survey, 1962-1970", and "Publications of the U.S. Geological Survey, 1971 through 1981." These permanent catalogs, as well as some others, are available under the conditions indicated below from U.S. Geological Survey Map Distribution, Box 25286, MS 306, Federal Center, Denver, CO 80225. The catalogs are also available over the counter at any of the U.S. Geological Survey offices that sell books.

Permanent catalogs "Publications of the Geological Survey, 1879-1961" and "Publications of the Geological Survey, 1962-1970" may be purchased in paperback book form for $6.00 and as microfiche for $4.00.

Permanent catalog "Publications of the U.S. Geological Survey, 1971 through 1981" may be purchased in paperback book form (two volumes, publications listing and index) for $15 and as a set of microfiche for $8.00.

Supplements for 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, and 1992, may be purchased in paperback book form and are priced as follows: 1982, $3; 1983, $3; 1984, $3.25; 1985, $3.75; 1986, $4.25; 1987, $4; 1988, $3.75; 1989, $4; 1990, $4.50; 1991, $4.25; 1992, $5.

State catalogs currently available may be purchased in paperback book form and are priced as follows: Alaska, $3.50; Arkansas, $1; California, $4.75; Colorado, $3.50; Florida, $1; Massachusetts/Rhode Island/Connecticut, $1; New York, $1; Oregon, $1; Pennsylvania/New Jersey, $2.50; Utah, $3.

Copies of the monthly catalog "New Publications of the U.S. Geological Survey" may be obtained free on request.

Those wishing to be placed on a free subscription list of the monthly catalog "New Publications of the U.S. Geological Survey" should apply in writing to the U.S. Geological Survey, 582 National Center, Reston, VA 22092.

Prices of available publications, except informal reports released to the open files and through the National Technical Information Service (NTIS), are given in (1) current issues of the monthly catalog "New Publications of the U.S. Geological Survey" and (2) "Price and Availability List of U.S. Geological Survey Publications (year)." Limited quantities of circulars and publications of general interest are free. Publications listed in this catalog but not found in the price and availability list are no longer available.

Prices of reports released to the open files (including reports prefixed OF and WRI) are given in a listing "U.S. Geological Survey Open-File Reports," updated bimonthly, available in microfiche for $3.50 from USGS ESIC—Open-File Report Section, Box 25286, Denver, CO 80225.

Prices of reports released through the NTIS may be obtained by writing to the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161; please include NTIS number preceding each item.

[1]Individual topographic quadrangle maps are not listed, they are shown on State indexes to topographic maps, which are free on application to U.S. Geological Survey, Map Distribution, Box 25286, Bldg. 810, Federal Center, Denver, CO 80225, and to offices where books and maps are sold over the counter. These indexes also show commercial dealers in each State.

AVAILABILITY OF BOOKS AND MAPS BY MAIL

In ordering books give the series designation and number, such as U.S. Geological Survey Bulletin 738, and the full title. In ordering maps give name or series designation and number, such as Fairfax, Va., 7.5-minute or GQ-851. Include your full address and zip code, plainly printed. Prepayment is required and should be made by check or money order payable to U.S. Department of the Interior - USGS, except for periodicals (see below). Postage stamps are not accepted. Do not send cash. Remittances must be in United States funds.

Prices listed include cost of domestic surface transportation. For transmittal outside the U.S.A. (except to Canada and Mexico), a surcharge of 25 percent of the net bill should be included to cover surface transportation.

Books

Professional papers, bulletins, water-supply papers, Techniques of Water-Resources Investigations, circulars, single copies of Earthquakes and Volcanoes, Preliminary Determination of Epicenters, the annual catalog Publications of the U.S. Geological Survey, and some miscellaneous reports, including some from the foregoing series that have gone out of print at the Superintendent of Documents, are obtainable by mail from

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On orders of 100 copies or more of the same report to the same address, a 25-percent discount is allowed (limited quantities of circulars and publications of general interest are usually free of charge). Open-file reports and reports available only through the NTIS should be ordered according to instructions under appropriate headings in this announcement. Discount does not apply to open-file reports and reports available through the NTIS.

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Domestic remittance should be made by check or money order (payable to Superintendent of Documents) or charged to VISA or MasterCard. Please add 25 percent for mailing to countries outside the U.S. and its possessions.

Maps

For maps of all areas of the United States, address mail orders to

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Denver, CO 80225

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101 12th Ave., Box 12
Fairbanks, AK 99701

On an order amounting to $500 or more at the list price, a 50-percent discount is allowed; no other discount is applicable. The discount applies to all maps and charts distributed by the U.S. Geological Survey. A $1 postage and handling charge is applicable on orders of less than $10. Check or money order should be payable to Department of the Interior - USGS.

AVAILABILITY OF BOOKS AND MAPS OVER THE COUNTER

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Book reports and maps of the U.S. Geological Survey are available *over the counter* at the following U.S. Geological Survey offices, all of which are authorized agents of the Superintendent of Documents:

ANCHORAGE, Alaska—Rm. 101, 4230 University Dr.
LAKEWOOD, Colorado—Federal Center, Bldg. 810
MENLO PARK, California—Bldg. 3, Rm. 3128, 345 Middlefield Rd.
RESTON, Virginia—USGS National Center, Rm. 1C402, 12201 Sunrise Valley Dr.
SALT LAKE CITY, Utah—Federal Bldg., Rm. 8105, 125 South State St.
SPOKANE, Washington—U.S. Post Office Bldg., Rm. 135, 904 West Riverside Ave.
WASHINGTON, D.C.—Main Interior Bldg., Rm. 2650, 1849 C St., NW.

Maps Only

Maps may be purchased *over the counter* at the following U.S. Geological Survey offices:

FAIRBANKS, Alaska—New Federal Bldg., Rm. 126, 101 Twelfth Ave.
ROLLA, Missouri—1400 Independence Rd.
STENNIS SPACE CENTER, Mississippi—Bldg. 3101

Survey maps are also sold by some 2,800 commercial dealers throughout the United States. Prices charged are generally higher than those shown on this list. Dealers are listed in each "State Catalog of Topographic and Other Published Maps," obtainable free of charge by mail or over the counter from U.S. Geological Survey offices listed on this page.

CD-ROM's

DIGITAL DATA SERIES

The Digital Data Series distributes large amounts of digital data (up to 680MB) through the medium of Compact Disc-Read Only Memory technology. This medium takes advantage of the latest technological advances in digital mass-storage and in the internationally recognized standards (ISO-9660) for CD-ROM's. Full instructions on computer technology required to use each CD-ROM are given with each entry. CD-ROM's in the Digital Data Series are available by mail from: U.S. Geological Survey, Map Distribution, Box 25286, Bldg. 810, Federal Center, Denver, CO 80225. No discounts apply to CD-ROM's.

DDS-0001. National Geochemical Data Base; National Uranium Resource Evaluation data for the conterminous Western United States, by J. D. Hoffman, G. B. Gunnells and J. M. McNeal. 1991. One CD-ROM.

This CD-ROM was produced in accordance with the ISO 9660 standard; however, it is intended for use only on DOS-based computer systems. The minimum system requirements to use the data with the software provided on the disc are as follows: (1) an IBM or compatible personal computer with 640K RAM, (2) MS- or PC-DOS version 3.1 or later, (3) Microsoft MSCDEX version 2.1 or later, (4) CD-ROM drive with ISO 9660 software driver, and (5) hard disk drive.

DDS-0002. NEVADA. Geology of Nevada; a digital representation of the 1978 geologic map of Nevada, by R. M. Turner and W. J. Bawiec; display software by R. A. Ambroziak. 1991. One CD-ROM

The minimum system requirements to use the data with the software provided on this disc are: (1) an IBM or compatible personal computer with 640K RAM, (2) MS or PC-DOS version 3.1 or later and Microsoft MSCDEX version 2.1 or later, or OS/2 version or later, (3) CD-ROM drive with ISO 9660 software driver, (4) hard disk drive, and (5) EGA/VGA graphics system.

DDS-0003. MASSACHUSETTS. A geologic map of the sea floor in western Massachusetts Bay, constructed from digital sidescan-sonar images, photography, and sediment samples, by M. H. Bothner, C. M. Parmenter, D. C. Twichell, C. F. Polloni, and H. J. Knebel; display software by R. A. Ambroziak. 1992. One CD-ROM.

The minimum system requirements to use the data with the software provided on this disc are as follows: (1) an IBM or compatible personal computer with 640K RAM, (2) MS- or PC-DOS version 3.1 or later, (3) Microsoft MSCDEX version 2.1 or later, (4) CD-ROM drive with ISO 9660 software driver, (5) hard disk drive, and (6)EGA/VGA graphics system. A math coprocessor is highly recommended.

DDS-0005. ALASKA. National Energy Research Seismic Library; processed seismic data for 29 lines in the National Petroleum Reserve in Alaska, by F. N. Zihlman and R. A. Ambroziak. 1992. One CD-ROM.

The minimum system requirements to use the data with the software provided on this disc are as follows: (1) an IBM or compatible personal computer (preferably having an 80386 or higher numbered processor) with 640K RAM, (2) MS- or PC-DOS version 3.1 or later, (3) Microsoft MSCDEX version 2.1 or later, (4) CD-ROM drive with ISO 9660 software driver, (5) hard disk drive with a minimum of 7MB free space, and (6) EGA/VGA graphics system.

DDS-0006. Stratigraphic nomenclature databases for the United States, its possessions and territories. 1992. One CD-ROM.

The minimum system requirements to use the data with the software provided on this disc are as follows: (1) an IBM or compatible personal computer with 640K RAM, (2) MS- or PC-DOS version 4.01 or later, (3) Microsoft MSCDEX version 2.1 or later, (4) CD-ROM drive with ISO 9660 software driver, (5) hard disk drive, and (6) EGA/VGA color system.

Geologic Names Unit Lexicon (GNULEX), compiled by M. E. MacLachlan, W. A. Bryant, T. W. Judkins, E. D. Koozmin, R. C. Orndorff, M. L. Hubert, C. R. Murdock, S. W. Starrat and J. R. Le Compte.

Geologic Names of the United States (GEONAMES), compiled by C. R. Murdock and M. L. Hubert; data base designer and programmer, C. C. Abston.

DDS-0007. Digitized strong-motion accelerograms of North and Central American earthquakes 1933-1986, by L. C. Seekins, A. G. Brady, Catherine Carpenter and Nicholas Brown. 1992. One CD-ROM.

The minimum system requirements to use the catalog search software provided on this disc are as follows: (1) IBM or compatible personal computer with 512K RAM, (2) MS or PC-DOS version 3.1 or later, (3) Microsoft MSCDEX version 2.1 or later, (4) CD-ROM drive with ISO 9660 software driver, and (5) hard disk drive.

DDS-0008. Photographs from the U.S. Geological Survey Photographic Library (earthquakes, volcanoes, geologic hazards, and other phenomena), by J. K. McGregor and C. C. Abston. 1992. One CD-ROM.

The minimum system requirements to use this data are as follows: (1) DOS, IBM or compatible personal computer with 640K RAM, (2) MS or PC-DOS version 5.0 or later, (3) SVGA graphics card (640×480×256 colors) and SVGA color monitor, (4) Microsoft MSCDEX version 2.1 or later, (5) CD-ROM drive with ISO 9660 software driver, and (6) hard disk drive.

DDS-0009. National geophysical data grids; gamma-ray, gravity, magnetic, and topographic data for the conterminous United States, by J. D. Phillips, J. S. Duval and R. A. Ambroziak. 1993. One CD-ROM.

This CD-ROM was produced in accordance with the ISO 9660 standard and can be accessed by any computer system that has the appropriate software to read ISO 9660 discs. The menu system and other compiled programs included on the CD-ROM will work only on DOS-based computer systems. The data are available in ASCII format under the ASCII directory. The minimum system requirements to use the data with the software provided on this disc are as follows: (1) IBM or compatible personal computer with 640K RAM, (2) MS- or PC-DOS version 5.0 or later, (3) Microsoft MSCDEX version 2.1 or later, (4) CD-ROM drive with ISO 9660 software driver, (5) hard disk

drive, (6) super VGA color graphics system, and (7) math coprocessor.

DDS-0010. Modern average global sea-surface temperature, by P. N. Schweitzer. 1993. One CD-ROM.

This CD-ROM was produced in conformance with both the ISO 9660 and Macintosh HFS standards. Software is provided on the disc to retrieve the yearly sea-surface temperature profile at any oceanic location and to display the data graphically. Software is included both in source and executable formats and runs on MS-DOS, Macintosh, and UNIX computer systems. Documentation for all data and software is included on the disc in both ASCII text and PostScript format. The minimum system requirements to use the data with the software provided on the disc follow. For MS-DOS systems, an IBM or compatible personal computer with MS- or PC-DOS version 3.3 or later, Microsoft MSCDEX version 2.1 or later, and a CD-ROM drive with an ISO 9660 driver are needed. For graphical output on MS-DOS systems, an 80386 or 80486 CPU, 4MB of extended RAM, and a Super VGA graphics system are needed. For Macintosh systems, a Macintosh computer with a CD-ROM drive is needed. For graphical output on Macintosh systems, 4MB of RAM and a 256-color display are needed. For UNIX systems, an ANSI-conformant C compiler and a CD-ROM drive with an ISO 9660 driver are needed. For graphical output on UNIX systems, 8MB of RAM and X Window System v. 11, r3 or later are needed.

DDS-0015. CD-ROM atlas of the deepwater parts of the U.S. Exclusive Economic Zone in the Atlantic Ocean, the Gulf of Mexico, and the eastern Caribbean Sea, by D. C. Twichell and C. F. Polloni; display software by R. A. Ambroziak; software documentation by C. A. Cook. 1993. One CD-ROM.

This CD-ROM was produced in accordance with the ISO 9660 standard and can be accessed by any computer system that has the appropriate software to read ISO 9660 discs; however, the disc is intended for use in a DOS environment. Users who do not have access to DOS will have to provide software to read and manipulate the data. The C source code for the DOS software and documentation are provided on this disc in the \SOURCE and \DOCFILES subdirectories. The minimum system requirements to use the data with the software provided on the disc are as follows: (1) IBM or compatible personal computer, (2) 640K RAM (at least 540K free memory), (3) math coprocessor, (4) MS- or PC-DOS version 5.0 or later, (5) Microsoft MSCDEX version 2.1 or later, (6) CD-ROM drive with ISO 9660 software driver, (7) hard disk drive (5MB free), (8) Super VGA graphics card (640×480 pixels with 256 colors), and (9) VGA color monitor.

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 0497-H. ARIZONA. Earth-fissure movements associated with fluctuations in ground-water levels near the Picacho Mountains, south-central Arizona, 1980-84, by M. C. Carpenter. 1993. p. H1-H49. (Mechanics of aquifer systems.) (Supersedes Open-file report 90-561.)

P 0870-A. IDAHO. The channel and waters of the upper Salmon River area, Idaho, by W. W. Emmett. 1975 (1992). p. A1-A116. (Hydrologic evaluation of the upper Salmon River area, Idaho.) (Reprint.)

P 1177-B. NORTH CAROLINA. The Outer Banks of North Carolina, by Robert Dolan and H. F. Lins. Prepared in cooperation with the National Park Service. 1986 (1993). 47 p. (Reprint.)

P 1240-B. Facing geologic and hydrologic hazards; earth-science considerations, edited by W. W. Hays. 1981 (1992). p. B1-B108. (Reprint.)

Introduction, by W. W. Hays and C. F. Shearer. p. B1-B3.

Ground shaking, by W. W. Hays. p. B6-B15.

Surface faulting, by M. G. Bonilla. p. B16-B22.

Earthquake-induced ground failures, by T. L. Youd and D. K. Keefer. p. B23-B31.

Tsunamis, by W. W. Hays. p. B32-B37.

Floods, by G. W. Edelen, Jr. p. B39-B53.

Landslides, by R. L. Schuster, D. J. Varnes and R. W. Fleming. p. B55-B65.

Expansive soils, by R. L. Schuster. p. B66-B72.

Subsidence, by Susan Lee and D. R. Nichols. p. B73-B85.

Volcanic eruptions, by D. R. Mullineaux. p. B87-B100.

Suggestions for improving decisionmaking to face geologic and hydrologic hazards, by W. W. Hays and C. F. Shearer. p. B103-B108.

P 1386-E. Glaciers of Europe, edited by R. S. Williams, Jr., and J. G. Ferrigno, U.S. Geological Survey. 1993. p. E1-E164. (Satellite image atlas of glaciers of the world, edited by R. S. Williams, Jr., and J. G. Ferrigno.)

Glaciers of the Alps; the Austrian Alps, by Helmut Rott, University of Innsbruck. p. E6-E13.

Glaciers of the Alps; the Swiss Alps, by K. E. Scherler, Swiss Federal Institute of Technology. p. E14-E22.

Glaciers of the Alps; the French Alps, by Louis Reynaud, Laboratoire de Glaciologie, St. Martin d'Hères. p. E23-E36.

Glaciers of the Alps; the Italian Alps, by R. S. Barbero, CNR; and Giorgio Zanon, University of Padua. p. E37-E48.

Glaciers of the Pyrenees, Spain and France, by David Serrat, University of Barcelona; and Josep Ventura, Cartographic Institute of Catalunya. p. E49-E61.

Glaciers of Norway, by Gunnar Ostrem and Nils Haakensen, Norwegian Water Resources and Energy Administration. p. E63-E107.

Glaciers of Sweden, by Valter Schytt (deceased), Stockholm University. p. E111-E125.

Glaciers of Svalbard, Norway, by Olav Liestol, Norwegian Polar Research Institute. p. E127-E151.

Glaciers of Jan Mayen, Norway, by Olav Orheim, Norwegian Polar Research Institute. p. E153-E164.

P 1404-G. Hydrogeologic framework of the northern Atlantic Coastal Plain in parts of North Carolina, Virginia, Maryland, Delaware, New Jersey, and New York, by Henry Trapp, Jr. 1992. p. G1-G59. 13 plates in separate case. (Regional Aquifer-System Analysis; northern Atlantic Coastal Plain.)

P 1405-B. Hydrogeology of the Cambrian-Ordovician aquifer system in the northern Midwest, United States, by H. L. Young, *with a section on* Ground-water quality by D. I. Siegel. 1992. p. B1-B99. 1 plate in pocket. (Regional Aquifer-System Analysis; northern Midwest.)

P 1405-C. Simulation of regional ground-water flow in the Cambrian-Ordovician aquifer system in the northern Midwest, United States, by R. J. Mandle and A. L. Knotis. 1992. p. C1-C97. (Regional Aquifer-System Analysis; northern Midwest.) (Supersedes Open-file report 87-689.)

P 1407-C. NEW MEXICO, TEXAS. Geohydrology and simulation of ground-water flow in the Mesilla Basin, Doña Ana County, New Mexico, and El Paso County, Texas, by P. F. Frenzel and C. A. Kaehler, *with a section on* Water quality and geochemistry by S. K. Anderholm. 1992. p. C1-C105. 5 plates in pocket. (Regional Aquifer-System Analysis, Southwest alluvial basins, New Mexico and adjacent states.) (Supersedes Open-file report 88-305.)

P 1408-F. IDAHO. Hydrology and digital simulation of the regional aquifer system, eastern Snake River plain, Idaho, by S. P. Garabedian. 1992. p. F1-F102. 10 plates in separate case. (Regional Aquifer-System Analysis; Snake River plain, Idaho.) (Supersedes Open-file report 87-237.)

P 1410-G. MISSISSIPPI, ALABAMA. Hydrogeology of the Southeastern Coastal Plain aquifer system in parts of eastern Mississippi and western Alabama, by M. J. Mallory. 1993. p. G1-G57. (Regional Aquifer-System Analysis; Southeastern Coastal Plain.)

P 1416-C. Geohydrologic units of the coastal lowlands aquifer system, south-central United States, by J. S. Weiss. 1992. p. C1-C32. 16 plates in separate case. (Regional Aquifer-System Analysis; Gulf Coastal Plain.) (Supersedes Open-file report 90-173.)

P 1497-C. ALASKA. Distribution, facies, ages, and proposed tectonic associations of regionally metamorphosed rocks in east- and south-central Alaska, by Cynthia Dusel-Bacon, Bela Csejtey, Jr., H. L. Foster, E. O. Doyle, W. J. Nokleberg and George Plafker. Prepared in cooperation with the Alaska Department of National Resources, Division of Geological and Geophysical Surveys. 1993. p. C1-C72. 2 plates in pocket. (Regionally metamorphosed rocks of Alaska.)

P 1506-D. WYOMING. Description and correlation of Eocene rocks in stratigraphic reference sections for the Green River and Washakie basins, Southwest Wyoming, by H. W. Roehler. 1992. p. D1-D83. 2 plates in pocket. (Geology of the Eocene Wasatch, Green River, and Bridger (Washakie) formations, greater Green River basin, Wyoming, Utah, and Colorado.)

P 1506-F. WYOMING, UTAH, COLORADO. Eocene climates, depositional environments, and geography, greater Green River basin, Wyoming, Utah, and Colorado, by H. W. Roehler. 1993. p. F1-F74. (Geology of the Eocene Wasatch, Green River, and Bridger (Washakie) formations, greater Green River basin, Wyoming, Utah, and Colorado.)

P 1519. UTAH. Applications of research from the U.S. Geological Survey program, assessment of regional earthquake hazards and risk along the Wasatch Front, Utah, edited by P. L. Gori, U.S. Geological Survey. 1993. 167 p. (Supersedes Open-file report 90-225.)

Interactive workshops; essential elements of the earthquake hazards research and reduction program in the Wasatch Front, Utah, by P. L. Gori, U.S. Geological Survey. p. 1-15.

Reducing earthquake hazards in Utah; the crucial connection between researchers and practitioners, by W. J. Kockelman, U.S. Geological Survey. p. 16-74.

Public preceptions of the implementation of earthquake mitigation policies along the Wasatch Front in Utah, by G. E. Madsen, L. R. Anderson, Utah State University; J. H. Barnes, Salt Lake County Planning Division; and Genevieve Atwood, Utah Geological Survey. p. 75-81.

A data base designed for urban seismic hazards studies, by A. C. Tarr, U.S. Geological Survey. p. 82-90.

A mapping of ground-shaking intensities for Salt Lake County, Utah, by P. C. Emmi, University of Utah. p. 91-113.

Wasatch Front County Hazards Geologist Program, by G. E. Christenson, Utah Geological Survey. p. 114-120.

Surface-fault rupture; a guide for land-use planning, Utah and Juab counties, Utah, by R. M. Robison, Utah County Planning Department. p. 121-128.

Landslide hazards; a guide for land-use planning, Davis County Utah, by R. M. Robison, Utah County Planning Department; and Mike Lowe, Davis County Planning Department. p. 129-137.

Rockfall hazards; a guide for land-use planning, Salt Lake County, Utah, by C. V. Nelson, Delta Geotechnical Consultants. p. 138-142.

Debris-flow hazards; a guide for land-use planning, Davis County, Utah, by Mike Lowe, Davis County Planning Department. p. 143-150.

Liquefaction hazards, a guide for land-use planning, Davis County, Utah, by Mike Lowe, Davis County Planning Department. p. 151-157.

Tectonic subsidence hazard; a guide for land-use planning, Utah and Juab counties, Utah, by R. M. Robison, Utah County Planning Department. p. 158-162.

Hazards from earthquake-induced ground failure in sensitive clays, vibratory settlement, and flooding due to seiches, surface-drainage disruptions, and increased ground-water discharge, Davis County, Utah, by Mike Lowe, Davis County Planning Department. p. 163-167.

P 1520. WYOMING. New stratigraphic subdivisions and redefinition of subdivisions of late Archean and early Proterozoic

metasedimentary and metavolcanic rocks of the Sierra Madre and Medicine Bow Mountains, southern Wyoming, by R. S. Houston, K. E. Karlstrom, P. J. Graff and A. J. Flurkey. Prepared in cooperation with the U.S. Department of Energy, Wyoming Geological Survey, and Geology Department of the University of Wyoming. 1992. 50 p. 1 plate in pocket.

P 1521. OREGON, CALIFORNIA. Stratigraphy of the Cretaceous Hornbrook Formation, southern Oregon and Northern California, by T. H. Nilsen. 1993. 89 p. 1 plate in pocket.

P 1524. MONTANA. Geology of the Libby thrust belt of northwestern Montana and its implications to regional tectonics, by J. E. Harrison and E. R. Cressman. 1993. 42 p. 2 plates in pocket.

P 1527. Seismicity of the United States, 1568-1989 (revised), by C. W. Stover and J. L. Coffman. 1993. 418 p.

P 1530-A. MINNESOTA. Field observations, preliminary model analysis, and aquifer thermal efficiency, by R. T. Miller and G. N. Delin. Prepared in cooperation with the University of Minnesota and the Minnesota Geological Survey. 1993. p. A1-A55. (Cyclic injection, storage, and withdrawal of heated water in a sandstone aquifer at St. Paul, Minnesota.)

P 1532. WYOMING. Stratigraphy of the Upper Cretaceous Fox Hills Sandstone and adjacent parts of the Lewis Shale and Lance Formation, east flank of the Rock Springs Uplift, Southwest Wyoming, by H. W. Roehler. 1993. 57 p. 5 plates in pocket.

P 1533. The Upper Cretaceous dimorphic pachydiscid ammonite *Menuites* in the Western Interior of the United States, by W. A. Cobban, U.S. Geological Survey; and W. J. Kennedy, Oxford University. 1993. 14 p.

P 1536. INDIANA, ILLINOIS. Liquefaction evidence for one or more strong Holocene earthquakes in the Wabash Valley of southern Indiana and Illinois, with a preliminary estimate of magnitude, by S. F. Obermeier, U.S. Geological Survey; J. R. Martin, Virginia Polytechnic Institute and State University; A. D. Frankel, U.S. Geological Survey; T. L. Youd, Brigham Young University; P. J. Munson, C. A. Munson, Indiana University; and E. C. Pond, Virginia Polytechnic Institute and State University. 1993. 27 p. (Supersedes Open-file report 92-406.)

P 1537. COLORADO. Mineralogy, mineral chemistry, and paragenesis of gold, silver, and base-metal ores of the North Amethyst vein system, San Juan Mountains, Mineral County, Colorado, by N. K. Foley, S. W. Caddey, C. B. Byington and D. M. Vardiman. 1993. 39 p.

P 1542. Allostratigraphy of the U.S. middle Atlantic continental margin; characteristics, distribution, and depositional history of principal unconformity-bounded upper Cretaceous and Cenozoic sedimentary units, by C. W. Poag, U.S. Geological Survey; and L. W. Ward, Virginia Museum of Natural History. 1993. 81 p.

P 1550-C. CALIFORNIA. The Loma Prieta, California, earthquake of October 17, 1989; preseismic observations, edited by M. J. S. Johnston, U.S. Geological Survey. 1993. p. C1-C85. (Earthquake occurrence; coordinated by W. H. Bakun and W. H. Prescott.)

Seismicity in the southern Santa Cruz Mountains during the 20-year period before the earthquake, by J. A. Olson and D. P. Hill, U.S. Geological Survey. p. C3-C16.

Analysis of low-frequency-electromagnetic-field measurements near the epicenter, by A. C. Fraser-Smith, Arman Bernardi, R. A. Helliwell, P. R. McGill, and O. G. Villard, Jr., Stanford University. p. C17-C25.

Seismomagnetic effects, by R. J. Mueller and M. J. S. Johnston, U.S. Geological Survey. p. C27-C30.

Near-source short- to intermediate-period ground motions, by R. A. White and W. L. Ellsworth, U.S. Geological Survey. p. C31-C46.

A reported streamflow increase, by E. A. Roeloffs, U.S. Geological Survey. p. C47-C51.

Near-field high-resolution strain measurements, by M. J. S. Johnston, U.S. Geological Survey; and A. T. Linde, Carnegie Institution of Washington. p. C53-C58.

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Meeting demand for maps in storm's wake, by H. L. Zohn. p. 7-8.

PERIODICALS

EARTHQUAKES AND VOLCANOES

For a complimentary copy write to Earthquakes and Volcanoes, U.S. Geological Survey, 904 National Center, Reston, VA 22092.

Earthquakes and Volcanoes, v. 23, no. 1. 1992. p. 1-48.

Earthquakes and Volcanoes, v. 23, no. 2. 1992. p. 49-88.

Earthquakes and Volcanoes, v. 23, no. 3. 1992. p. 89-148.

Earthquakes and Volcanoes, v. 23, no. 4. 1992. p. 149-192.

Earthquakes and Volcanoes, v. 23, no. 5. 1992. p. 193-240.

Earthquakes and Volcanoes, v. 23, no. 6. 1992. p. 241-288.

PRELIMINARY DETERMINATION OF EPICENTERS

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Single copies of monthly issues may be purchased only from USGS ESIC—Open-File Report Section, Box 25286, Mail Stop 517, Denver, CO 80225.

Preliminary determination of epicenters. Monthly listing for June 1992. 36 p.

Preliminary determination of epicenters. Monthly listing for July 1992. 44 p.

Preliminary determination of epicenters. Monthly listing for August 1992. 40 p.

Preliminary determination of epicenters. Monthly listing for September 1992. 36 p.

Preliminary determination of epicenters. Monthly listing for October 1992. 36 p.

Preliminary determination of epicenters. Monthly listing for November 1992. 36 p.

Preliminary determination of epicenters. Monthly listing for December 1992. 32 p.

Preliminary determination of epicenters. Monthly listing for January 1993. 40 p.

Preliminary determination of epicenters. Monthly listing for February 1993. 28 p.

Preliminary determination of epicenters. Monthly listing for March 1993. 36 p.

Preliminary determination of epicenters. Monthly listing for April 1993. 32 p.

Preliminary determination of epicenters. Monthly listing for May 1993. 44 p.

INFORMAL REPORTS

WATER-RESOURCES INVESTIGATIONS REPORTS

"Water-Resources Investigations Reports" (WRI) in this listing is applied to reports that are of an interpretative nature made available to the public outside the formal USGS publications series. WRI's are not reproduced and distributed in quantity as are formal USGS publications, but are available for public inspection at the indicated depositories.

The following WRI reports are available from: USGS ESIC—Open-File Report Section, Box 25286, Mail Stop 517, Denver, CO 80225 (telephone 303-236-7476). For specific ordering instructions, please refer to "Reports Available Only Through USGS ESIC—Open-File Report Section" under "Open-File Reports." When ordering, use the WRI number preceding each item, and do not mix orders for WRI reports and open-file reports with orders for other U.S. Geological Survey products.

In the water-resources investigations report and the open-file report listings that follow, offices where reports may be inspected 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. 4A100, National Center, 12201 Sunrise Valley Dr., Reston, VA 22092.
S	Earth Science Information Center, Rm. 135, U.S. Courthouse, West 920 Riverside Ave., Spokane, WA 99201.
U	Earth Science Information Center, Rm. 8105, Federal Bldg., 125 South State St., Salt Lake City, UT 84138.
Wa	Earth Science Infromation Center, U.S. Department of the Interior, Rm. 2650, 1849 C St., NW, Washington, DC 20240.
Wb	U.S. Department of the Interior, Natural Resources Library, Gifts and Exchange Section, 1849 C St., NW, Washington, DC 20240.

WRI 85-4267. CONNECTICUT. Water quality of Lake Waramaug and surrounding watershed, Litchfield County, Connecticut, by K. P. Kulp and David Grason. Prepared in cooperation with the Northwest Connecticut Regional Planning Agency, Lake Waramaug Task Force. 1992. 97 p. (NC, Da, M, Wb.)

WRI 87-4144. CONNECTICUT. Hydrogeology, ground-water availability, and water quality in the Titicus River valley, Ridgefield, Connecticut, by S. J. Grady, M. F. Weaver and J. W. Bingham. Prepared in cooperation with the Town of Ridgefield. 1992. 50 p., 5 over-size sheets. (NC, Da, M, Wb; USGS, WRD, Abraham A. Ribicoff Federal Bldg., 450 Main St., Room 525, Hartford, CT 06103.)

WRI 88-4127. NEW YORK. Geohydrology and 1985 ground-water levels on Manhasset Neck, Long Island, New York, by R. N. Casson. Prepared in cooperation with the Nassau County Department of Public Works. 1992. 29 p., 2 over-size sheets. (NC, Da, M, Wb; USGS, WRD, P.O. Box 1669, Albany, NY 12201.)

WRI 88-4208. OKLAHOMA, TEXAS. Simulation of ground-water flow in the Antlers Aquifer in southeastern Oklahoma and northeastern Texas, by R. B. Morton. Prepared in cooperation with the U.S. Army Corps of Engineers. 1992. 22 p., 7 over-size sheets, scale 1:500,000 (1 inch = about 8 miles). (NC, Da, M, Wb; USGS, WRD, Broadway Executive Park, Bldg. 7, 202 NW 66th, Oklahoma City, OK 73116.)

WRI 90-4011. PENNSYLVANIA. Water quality of the upper West Branch Susquehanna River and tributary streams between Curwensville and Renovo, Pennsylvania, May and July 1984, by R. A. Hainly and J. L. Barker. 1993. 61 p. (NC, Da, M, Wb; USGS, WRD, 840 Market St., Lemoyne, PA 17043-1586.)

WRI 90-4056. SOUTH CAROLINA. Simulation of the effects of proposed construction of Twelfth Street extension and of flood-plain reforestation on flood elevations, Congaree River near Columbia, South Carolina, by R. E. Schuck-Kolben and S. T. Benedict. Prepared in cooperation with the South Carolina Department of Highways and Public Transportation. 1992. 37 p., 11 over-size sheets. (NC, Da, M, Wb.)

WRI 90-4085. WASHINGTON, OREGON. Ground-water pumpage from the Columbia Plateau, Washington and Oregon, by D. R. Cline and C. A. Collins. Prepared in cooperation with the State of Washington Department of Ecology. 1992. 31 p., 5 over-size sheets, scale 1:1,250,000 (1 inch = about 19 miles). (NC, Da, M, Wb, S; USGS, WRD, 1201 Pacific Ave., Suite 600, Tacoma, WA 98402.)

WRI 90-4105. UTAH, ARIZONA. Simulation of ground-water flow and water-level declines that could be caused by proposed withdrawals, Navajo Sandstone, southwestern Utah and northwestern Arizona, by V. M. Heilweil and G. W. Freethey. Prepared in cooperation with the National Park Service. 1992. 51 p., 3 over-size sheets, scale 1:250,000 (1 inch = about 4 miles). (NC, Da, M, Wb, U.)

WRI 90-4124. WISCONSIN. Sediment transport, particle sizes, and loads in lower reaches of the Chippewa, Black, and Wisconsin rivers in western Wisconsin, by W. J. Rose. Prepared in cooperation with the U.S. Army Corps of Engineers. 1992. 38 p. (NC, Da, M, Wb; USGS, WRD, 6417 Normandy Lane, Madison, WI 53719-1133.)

WRI 90-4125. PUERTO RICO. Elevation of water table and hydrologic conditions in the Rio Lapa to Rio Majada area, Puerto Rico, for December 1988, and April, July, and October 1989, by Orlando Ramos-Gines. 1990. (NC, Da, M, Wb; USGS, WRD, P.O. Box 364424, San Juan, PR 00936.) Available only from USGS, WRD, P.O. Box 364424, San Juan, PR 00936.

WRI 90-4126. WISCONSIN. Hydrology and water quality of Powers Lake, southeastern Wisconsin, by S. J. Field. Prepared in cooperation with the Powers Lake Management District. 1993. 36 p. (NC, Da, M, Wb; USGS, WRD, 6417 Normandy Lane, Madison, WI 53719-1133.)

WRI 90-4131. PENNSYLVANIA. Evaluation of agricultural best-management practices in the Conestoga River headwaters, Pennsylvania; description and water quality of the Little Conestoga Creek headwaters prior to the implementation of nutrient management, by D. K. Fishel, M. J. Brown, K. M. Kostelnik and M. A. Howse. Prepared in cooperation with the Pennsylvania Department of Environmental Resources. 1992. 68 p. (NC, Da, M, Wb; USGS, WRD, 840 Market St., Lemoyne, PA 17043.)

WRI 90-4150. MINNESOTA. Simulation of ground-water flow in the St. Peter Aquifer in an area contaminated by coal-tar derivatives, St. Louis Park, Minnesota, by D. L. Lorenz and J. R. Stark. Prepared in cooperation with the U.S. Environmental Protection Agency. 1990. 37 p. (NC, Da, M, Wb; USGS, WRD, 2280 Woodall Dr., Mounds View, MN 55112.)

WRI 90-4151. NEW JERSEY. Geohydrology of, and simulation of ground-water flow in, the valley-fill deposits in the Ramapo River valley, New Jersey, by M. C. Hill, G. P. Lennon, G. A. Brown, C. S. Hebson and S. J. Rheaume. Prepared in cooperation with the New Jersey Department of Environmental Protection and Energy. 1992. 92 p., 4 over-size sheets, scale 1:24,000 (1 inch = 2000 feet). (NC, Da, M, Wb; USGS, WRD, Mountain View Office Park, 810 Bear Tavern Rd., Suite 206, West Trenton, NJ 08628.)

WRI 90-4154. WYOMING. Assessment of the hydrologic system and hydrologic effects of uranium exploration and mining in the Southern Powder River Basin Uranium District and adjacent areas, Wyoming, 1983, by M. E. Lowry, P. B. Daddow and S. J. Rucker, IV. Prepared in cooperation with the Wyoming State Engineer and the Wyoming Department of Environmental Quality. 1993. 42 p., 2 over-size sheets, scale 1:100,000 (1 inch = about 1.6 miles). (NC, Da, M, Wb, U; USGS, WRD, 2617 East Lincolnway, Suite B, Cheyenne, WY 82001.)

WRI 90-4161. NEW HAMPSHIRE. Geohydrology and water quality of stratified-drift aquifers in the Bellamy, Cocheco, and Salmon Falls River basins, southeastern New Hampshire, by T. J. Mack and S. M. Lawlor. Prepared in cooperation with the New Hampshire Department of Environmental Services, Water Resources Division. 1992. 89 p., 3 over-size sheets, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, Wb.)

WRI 90-4182. NEW YORK. Ground-water quality in the Bethpage-Hicksville-Levittown area, Long Island, New York, with emphasis on volatile organic compounds, by S. M. Feldman, D. A. Smolensky and J. P. Masterson. Prepared in cooperation with the Nassau County Department of Health. 1992. 51 p. (NC, Da, M, Wb; USGS, WRD, P.O. Box 1669, Albany, NY 12201.)

WRI 90-4205. NEW YORK. Base flow of 10 south-shore streams, Long Island, New York, 1976-85, and the effects of urbanization on base flow and flow duration, by A. G. Spinello and D. L. Simmons. Prepared in cooperation with the Nassau County Department of Public Works and the Suffolk County Department of Health Services. 1992. 34 p. (NC, Da, M, Wb; USGS, WRD, 5 Aerial Way, Syosset, NY 11791.)

WRI 91-4012. NEW YORK. Rates of water movement through the floors of selected stormwater basins in Nassau County, Long Island, New York, by H. F. Ku and D. B. Aaronson. Prepared in cooperation with the Nassau County Department of Public Works. 1992. 121 p., 1 over-size sheet. (NC, Da, M, Wb; USGS, WRD, P.O. Box 1669, Albany, NY 12201.)

WRI 91-4024. OHIO. Geohydrology and quality of water in aquifers in Lucas, Sandusky, and Wood counties, northwestern Ohio, by K. J. Breen and D. H. Dumouchelle. Prepared in cooperation with Lucas County, Sandusky County Department of Public Health, Wood County, and the cities of Maumee, Oregon, Sylvania, and Toledo, Ohio. 1991. 234 p., 11 over-size sheets. (NC, Da, M, Wb.)

WRI 91-4025. NEW HAMPSHIRE. Geohydrology and water quality of stratified-drift aquifers in the lower Merrimack and coastal river basins, southeastern New Hampshire, by P. J. Stekl and S. M. Flanagan. Prepared in cooperation with the New Hampshire Department of Environmental Services, Water Resources Division. 1992. 93 p., 7 over-size sheets, scale 1:24,000

(1 inch = 2,000 feet). (NC, Da, M, Wb; USGS, WRD, 525 Clinton St., Bow, NH 03304.)

WRI 91-4030. NEW YORK. Estimated thickness and potential well yield of stratified-drift in selected areas of northern Westchester County, New York, by R. F. Snow and S. W. Wolcott. Prepared in cooperation with the Westchester County Water Agency. 1992. 6 over-size sheets, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, Wb; WRD, USGS, P.O. Box 1669, Albany, NY 12201.)

WRI 91-4033. NEW MEXICO. Hydrogeology and ground-water chemistry of the San Andres-Glorieta Aquifer in the Acoma Embayment and eastern Zuni Uplift, west-central New Mexico, by J. A. Baldwin and S. K. Anderholm. Prepared in cooperation with New Mexico State Engineer Office, Pueblo of Acoma, Pueblo of Laguna, and the U.S. Bureau of Indian Affairs. 1992. 304 p., 2 over-size sheets. (NC, Da, M, Wb, U; USGS, WRD, Pinetree Corporate Centre, Suite 200, 4501 Indian School Rd. NE, Albuquerque, NM 87110.)

WRI 91-4044. WYOMING. Water resources of Washakie County, Wyoming, by D. D. Susong, M. L. Smalley and E. R. Banta. Prepared in cooperation with the Wyoming State Engineer. 1993. 82 p., 2 over-size sheets, scale 1:500,000 (1 inch = about 8 miles). (NC, Da, M, Wb, U; USGS, WRD, 2617 East Lincolnway, Suite B, Cheyenne, WY 82001.)

WRI 91-4063. OREGON. Urban storm runoff in the Roseburg area, Oregon, as related to urban flood characteristics of the Willamette Valley, by L. E. Hubbard. Prepared in cooperation with the Water Resources Survey, Douglas County, Oregon. 1992. 28 p. (NC, Da, M, Wb, S; USGS, WRD, 1201 Pacific Ave., Suite 600, Tacoma, WA 98402; USGS, Library, 5400 MacArthur, Vancouver, WA 98661.)

WRI 91-4065. NEW MEXICO. Isostatic residual gravity anomalies of New Mexico, by C. E. Heywood. Prepared in cooperation with the New Mexico State Engineer Office. 1992. 27 p. (NC, Da, M, Wb, U; USGS, WRD, Pinetree Corporate Ctr., Suite 200, 4501 Indian School Rd. NE, Albuquerque, NM 87110.)

WRI 91-4073. WASHINGTON. Surface-water-quality assessment of the Yakima River basin, Washington; areal distribution of fecal-indicator bacteria, July 1988, by S. S. Embrey. 1992. 34 p., 2 over-size sheets, scale 1:250,000 (1 inch = about 4 miles). (NC, Da, M, Wb, S; USGS, WRD, 1201 Pacific Ave., Suite 600, Tacoma, WA 98402; USGS Library, Room 656, West 920 Riverside Ave., Spokane, WA 99201.)

WRI 91-4087. OREGON. Summary appraisal of water resources of the Umatilla Indian Reservation, Oregon, by J. B. Gonthier and E. L. Bolke. 1993. 54 p., 1 over-size sheet, scale 1:250,000 (1 inch = about 4 miles). (NC, Da, M, Wb, S; USGS, WRD, Library, 5400 McArthur, Vancouver, WA 98661.)

WRI 91-4095. COLORADO. Assessment of effects of military maneuvers on the streamflow, water quality, and sediment yields at the U.S. Army Pinon Canyon Maneuver Site, Las Animas County, Colorado, by Paul von Guerard, R. S. Parker and R. G. Dash. Prepared in cooperation with the U.S. Department of the Army, Fort Carson Military Reservation. 1993. 84 p., 1 over-size sheet, scale 1:100,000 (1 inch = about 1.6 miles). (NC, Da, M, Wb, U; USGS, WRD, Box 25046, Mail Stop 415, Denver Federal Ctr., Denver, CO 80225.)

WRI 91-4108. WYOMING. Surface- and ground-water quality in the Owl Creek basin, north-central Wyoming, by K. M. Ogle. Prepared in cooperation with the Northern Arapaho Tribe. 1992. 65 p., 1 over-size sheet, scale 1:100,000 (1 inch = about 1.6 miles). (NC, Da, M, Wb., USGS, WRD, 2617 East Lincolnway, Suite B, Cheyenne, WY 82001.)

WRI 91-4109. LOUISIANA. Generalized potentiometric surfaces of the Red River alluvial aquifer, Pool 1, Red River waterway area, central Louisiana, by C. W. Smoot and Angel Martin, Jr. Prepared in cooperation with the U.S. Army Corps of Engineers and the U.S. Soil Conservation Service. 1991. 7 over-size sheets, scale 1:62,500 (1 inch = about 1 mile). (NC, Da, M, Wb.)

WRI 91-4110. Feasibility of using portable, noninvasive pipe flowmeters and time totalizers for determining water use, by U.S. Geological Survey. Prepared in cooperation with the Indiana Department of Natural Resources, Division of Water. 1992. 65 p. (NC, Da, M, Wb; USGS, WRD, 5957 Lakeside Blvd., Indianapolis, IN 46278-1996.)

WRI 91-4115. FLORIDA. Hydrologic conditions in the Nassau River basin, northeastern Florida, 1982-89, by J. E. Coffin, P. S. Hampson and Joel Steward. Prepared in cooperation with the Saint Johns River Water Management District. 1992. 112 p. (NC, Da, M, Wb; USGS, WRD, Suite B-5, 4710 Eisenhower Blvd., Tampa, FL 33614.)

WRI 91-4116. ALABAMA. Geohydrology of the principal aquifers in Butler County, Alabama, by J. C. Scott and R. H. Cobb. Prepared in cooperation with the Butler County Water Authority and Greenville Waterworks Board. 1992. 34 p. (NC, Da, M, Wb; USGS, WRD, 520 19th Ave., Tuscaloosa, AL 37501; and P.O. Box 210337, Montgomery, AL 36121-0337.)

WRI 91-4117. UTAH. Salt budget for West Pond, Utah, April 1987 to April 1988, by K. M. Waddell, J. W. Gwynn, C. B. Burden and S. R. Wold. 1992. 29 p. (NC, Da, M, Wb, U.)

WRI 91-4119. CALIFORNIA. Spatial distribution of selenium and other inorganic constituents in ground water underlying a drained agricultural field, western San Joaquin Valley, California, by D. A. Leighton, S. J. Deverel and J. K. Macdonald. Prepared in cooperation with the San Joaquin Valley Drainage Program. 1992. 73 p. (NC, Da, M, Wb; USGS, WRD, Federal Bldg., Room W-2233, 2800 Cottage Way, Sacramento, CA 95825; and 5735 Kearny Villa Rd., Suite O, San Diego, CA 92123.)

WRI 91-4120. MICHIGAN. Hydrologic provinces of Michigan, by S. J. Rheaume. Prepared in cooperation with the Michigan Department of Natural Resources, Geological Survey Division. 1991. 73 p., 1 over-size sheet. (NC, Da, M, Wb; USGS, WRD, 6520 Mercantile Way, Suite 5, Lansing, MI 48911.)

WRI 91-4121. ALABAMA. Geohydrology and ground-water availability in western Marshall and eastern Morgan counties, Alabama, by C. R. Bossong. Prepared in cooperation with the City of Arab Waterworks Board. 1992. 30 p. (NC, Da, M, Wb; USGS, WRD, 520 19th Ave., Tuscaloosa, AL 35401; and P.O. Box 210337, Montgomery, AL 36121-0337.)

WRI 91-4123. FLORIDA. Factors that affect public-supply water use in Florida, with a section on projected water use to the year 2020, by R. L. Marella. Prepared in cooperation with the Florida Department of Environmental Regulation. 1992. 35 p. (NC, Da, M, Wb; USGS, WRD, Suite 107, 9100 NW 36 St., Miami, FL

33178; Suite 222, 3728 Phillips Hwy., Jacksonville, FL 32207; Suite B-5, 4710 Eisenhower Blvd., Tampa, FL 33634-6381; and Suite 3015, 227 North Bronough St., Tallahassee, FL 32301.)

WRI 91-4126. NEW JERSEY. Water resources of the unconfined aquifer system of the Great Egg Harbor River basin, New Jersey, 1989-90, by M. K. Watt and M. L. Johnson. Prepared in cooperation with the New Jersey Department of Environmental Protection and Energy. 1991. 5 over-size sheets. (NC, Da, M, Wb; USGS, WRD, Mountain View Office Park, 810 Bear Tavern Rd., Suite 206, West Trenton, NJ 08628.)

WRI 91-4133. MICHIGAN. Hydrogeology of Huron County, Michigan, by M. J. Sweat. Prepared in cooperation with Huron County and the Michigan Department of Natural Resources. 1992. 76 p., 1 over-size sheet. (NC, Da, M, Wb; USGS, WRD, 6520 Mercantile Way, Suite 5, Lansing, MI 48911.)

WRI 91-4142. CALIFORNIA. Evaluation of a ground-water flow and transport model of the upper Coachella Valley, California, by E. G. Reichard and J. K. Meadows. Prepared in cooperation with the California Regional Water Quality Control Board, Colorado River Basin Region. 1992. 101 p. (NC, Da, M, Wb; USGS, WRD, Federal Bldg., Room W-2233, 2800 Cottage Way, Sacramento, CA 95825; and Suite O, 5735 Kearny Villa Rd., San Diego, CA 92123.)

WRI 91-4148. CALIFORNIA. Simulation of freshwater and saltwater flow in the coastal aquifer system of the Purisima Formation in the Soquel-Aptos Basin, Santa Cruz County, California, by H. I. Essaid. 1992. 35 p. (NC, Da, M, Wb; USGS, WRD, Federal Bldg., Room W-2233, 2800 Cottage Way, Sacramento, CA 95825; and 5735 Kearny Villa Rd., Suite O, San Diego, CA 92123.)

WRI 91-4149. Properties and chemical constituents in ground water from the Mississippi River valley alluvial aquifer and permeable zone A (Holocene-upper Pleistocene deposits), south-central United States, by R. A. Pettijohn, J. F. Busby and J. D. Beckman. 1992. 5 over-size sheets, scale 1:3,500,000 (1 inch = about 55 miles). (NC, Da, M, Wb; USGS, WRD, GC RASA, 8011 Cameron Rd., Bldg. 1, Austin, TX 78753.)

WRI 91-4150. Properties and chemical constituents in ground water from the Upper Claiborne Aquifer, Gulf Coast regional aquifer systems, south-central United States, by R. A. Pettijohn, J. F. Busby and T. B. Layman. 1993. 5 over-size sheets, scale 1:3,500,000 (1 inch = about 55 miles). (NC, Da, M, Wb; USGS, WRD, RASA, 8011 Cameron Rd., Bldg. B, Austin, TX 78754-3898.)

WRI 91-4151. Properties and chemical constituents in ground water from permeable zone C (lower Pliocene-upper Miocene deposits), coastal lowlands aquifer system, south-central United States, by R. A. Pettijohn, J. F. Busby and M. A. Cervantes. 1993. 5 over-size sheets, scale 1:3,500,000 (1 inch = about 55 miles). (NC, Da, M, Wb; USGS, WRD, RASA, 8011 Cameron Rd., Bldg. B, Austin, TX 78754-3898.)

WRI 91-4152. Properties and chemical constituents in ground water from permeable zone B (lower Pleistocene-upper Pliocene deposits), coastal lowlands aquifer system, south-central United States, by R. A. Pettijohn, J. F. Busby and T. B. Layman. 1993. 5 over-size sheets, scale 1:3,500,000 (1 inch = about 55 miles). (NC, Da, M, Wb; USGS, WRD, RASA, 8011 Cameron Rd., Bldg. B, Austin, TX 78754-3898.)

WRI 91-4155. NEW MEXICO, TEXAS. Simulation of ground-water flow in the Mesilla Basin, Dona Ana County, New Mexico, and El Paso County, Texas, by P. F. Frenzel. Prepared in cooperation with the U.S. Section, International Boundary and Water Commission, United States and Mexico. 1992. 157 p. (NC, Da, M, Wb, U; USGS, WRD, Pinetree Corporate Ctr., Suite 200, 4501 Indian School Rd. NE, Albuquerque, NM 87110.) (Supplement to Open-file report 88-305.)

WRI 91-4167. NEVADA. Lithologic properties of carbonate-rock aquifers at five test wells in the Coyote Spring Valley area, southern Nevada, as determined from geophysical logs, by D. L. Berger. Prepared in cooperation with the State of Nevada, the Las Vegas Valley Water District, and the U.S. Bureau of Reclamation. 1992. 27 p. (NC, Da, M, Wb, U; USGS, WRD, 6770 South Paradise, Las Vegas, NV 89119; and 333 West Nye Lane, Carson City, NV 89706.)

WRI 91-4168. FLORIDA. A preliminary approach to the use of borehole data, including television surveys, for characterizing secondary porosity of carbonate rocks in the Floridan aquifer system, by P. S. Safko and J. J. Hickey. 1992. 69 p. (NC, Da, M, Wb; USGS, WRD, Suite B-5, 4710 Eisenhower Blvd., Tampa, FL 33634.)

WRI 91-4169. NEW JERSEY. Hydrologic conditions in the upper Rockaway River basin, New Jersey, 1984-86, by F. L. Schaefer, P. T. Harte, J. A. Smith and B. A. Kurtz. Prepared in cooperation with the New Jersey Department of Environmental Protection and Energy. 1993. 103 p., 2 over-size sheets, scale 1:48,000 (1 inch = 4,000 feet). (NC, Da, M, Wb; USGS, WRD, Mountain View Office Park, 810 Bear Tavern Rd., Suite 206, West Trenton, NJ 08628.)

WRI 91-4173. TENNESSEE. Hydrogeology, ground-water quality, and potential for water-supply contamination near the Shelby County landfill in Memphis, Tennessee, by W. S. Parks and J. E. Mirecki. Prepared in cooperation with the Shelby County Department of Public Works. 1992. 79 p. (NC, Da, M, Wb; USGS, WRD, Room A-413 Federal Bldg., Nashville, TN 37203; 1013 North Broadway, Knoxville, TN 37917; and AgriCenter International, 7777 Walnut Grove Rd., Suite LLB2, Memphis, TN 38119.)

WRI 91-4176. COLORADO. Water-quality variations and trends in Monument and Fountain creeks, El Paso and Pueblo counties, Colorado, water years 1976-88, by B. C. Ruddy. Prepared in cooperation with the Colorado Springs Department of Utilities. 1993. 66 p. (NC, Da, M, Wb, U; USGS, WRD, Box 25046, Mail Stop 415, Denver Federal Ctr., Denver, CO 80225.)

WRI 91-4177. NEW HAMPSHIRE. Geohydrology of, and simulation of ground-water flow in, the Milford-Souhegan glacial-drift aquifer, Milford, New Hampshire, by P. T. Harte and T. J. Mack. Prepared in cooperation with the U.S. Environmental Protection Agency. 1992. 104 p. (NC, Da, M, Wb; USGS, WRD, 525 Clinton St., Bow, NH 03304.)

WRI 91-4178. GEORGIA. Evaluation of the hydrogeology and contamination in the vicinity of an abandoned manufactured gas plant in Albany, Georgia, by M. J. Chapman. Prepared in cooperation with the City of Albany, Water, Gas, and Light Commission. 1991. 36 p. (NC, Da, M, Wb; USGS, WRD, Peachtree Business Ctr., Suite 130, 3039 Antwiler Rd., Doraville, GA 30360-2824.)

WRI 91-4179. MARYLAND. Water withdrawal and use in Maryland, 1988-89, by J. C. Wheeler. Prepared in cooperation with the Maryland Water Resources Administration and the Maryland Geological Survey. 1992. 40 p. (NC, Da, M, Wb; USGS, WRD, 208 Carroll Bldg., 8600 La Salle Rd., Towson, MD 21204.)

WRI 91-4180. FLORIDA. Hydrogeologic setting and preliminary data analysis for the hydrologic-budget assessment of Lake Barco, an acidic seepage lake in Putnam County, Florida, by L. A. Sacks, T. M. Lee and A. B. Tihansky. Prepared in cooperation with the Florida Department of Environmental Regulation. 1992. 28 p. (NC, Da, M, Wb; USGS, WRD, Suite B-5, 4710 Eisenhower Blvd., Tampa, FL 33634.)

WRI 91-4181. FLORIDA. Effects of effluent spray irrigation and sludge disposal on ground water in a karst region, Northwest Pinellas County, Florida, by J. T. Trommer. Prepared in cooperation with Pinellas County, Florida. 1992. 32 p. (NC, Da, M, Wb; USGS, WRD, Suite B-5, 4710 Eisenhower Blvd., Tampa, FL 33614.)

WRI 91-4182. PENNSYLVANIA. Altitude and configuration of the potentiometric surface in the crystalline and metasedimentary rocks, northeastern Chester County, Pennsylvania, May through October 1990, by B. C. McManus. Prepared in cooperation with the Chester County Water Resources Authority. 1992. 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, Wb; USGS, WRD, Great Valley Corporate Ctr., 111 Great Valley Pkwy., Malvern, PA 19355.)

WRI 91-4185. NEVADA, ARIZONA. Geohydrologic reconnaissance of Lake Mead National Recreation Area; Virgin River, Nevada, to Grand Wash Cliffs, Arizona, by J. T. Bales and R. L. Laney. Prepared in cooperation with the U.S. National Park Service. 1992. 29 p., 1 over-size sheet. (NC, Da, M, Wb; USGS, WRD, 375 South Euclid Ave., Tucson, AZ 85719-6644; 1545 West University Dr., Tempe, AZ 85281; 2255 North Gemini Dr., Flagstaff, AZ 86001; and 1940 South 3rd Ave., Yuma, AZ 85364.)

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WRI 92-4117. TEXAS. Evaluation of the use of remote-sensing data to identify crop types and estimate irrigated acreage, Uvalde and Medina counties, Texas, 1989, by L. H. Raymond, G. M. Nalley and P. L. Rettman. Prepared in cooperation with the Edwards Underground Water District. 1992. 21 p. (NC, Da, M, Wb; USGS, WRD, 8011 Cameron Rd., Bldg. 1, Austin, TX 78753.)

WRI 92-4118. MISSOURI. Discharge ratings for tainter and roller gates at lock and dam No. 25 on the Mississippi River near Winfield, Missouri, by T. W. Alexander. Prepared in cooperation with the U.S. Army Corps of Engineers. 1992. 20 p. (NC, Da, M, Wb; USGS, WRD, 1400 Independence Rd., Mail Stop 200, Rolla, MO 65401.)

WRI 92-4120. ARKANSAS. Water-level maps of the Mississippi River valley alluvial aquifer in eastern Arkansas, 1989, by P. W. Westerfield and G. J. Gonthier. Prepared in cooperation with the Arkansas Geological Commission, Arkansas Soil and Water Conservation Commission, local conservation districts, and the U.S. Soil Conservation Service. 1992. 1 over-size sheet. (NC, Da, M, Wb; USGS, WRD, 2301 Federal Office Bldg., 700 West Capitol Ave., Little Rock, AR 72201.)

WRI 92-4123. Data encapsulation using Fortran-77 modules; a first step toward object-oriented programming in water resources, by D. B. Thompson, L. L. DeLong and J. M. Fulford. 1992. 67 p. (NC, Da, M, Wb; USGS, WRD, Suite 3015, 227 North Bronough St., Tallahassee, FL 32301.)

WRI 92-4124. Finite-difference interblock transmissivity for unconfined aquifers and for aquifers having smoothly varying transmissivity, by D. J. Goode and C. A. Appel. 1992. 79 p. (NC, Da, M, Wb.)

WRI 92-4126. ARKANSAS. Scour around bridge piers on streams in Arkansas, by R. E. Southard. Prepared in cooperation with the Arkansas State Highway and Transportation Department. 1992. 29 p. (NC, Da, M, Wb; USGS, WRD, 2301 Federal Office Bldg., 700 West Capitol Ave., Little Rock, AR 72201.)

WRI 92-4129. NORTH CAROLINA. Selected water-quality and biological characteristics of streams in some forested basins of North Carolina, 1985-88, by W. S. Caldwell. Prepared in cooperation with the North Carolina Department of Environment, Health, and Natural Resources. 1992. 114 p. (NC, Da, M, Wb; USGS, WRD, P.O. Box 30728, Raleigh, NC 27622.)

WRI 92-4130. OHIO. Distribution and variability of fecal-indicator bacteria in Scioto and Olentangy rivers in the Columbus, Ohio, area, by D. N. Myers. Prepared in cooperation with the City of Columbus, Ohio, Division of Sewerage and Drainage. 1992. 61 p. (NC, Da, M, Wb.)

WRI 92-4131. TENNESSEE. Hydrology of Melton Valley at Oak Ridge National Laboratory, Tennessee, by Patrick Tucci. Prepared in cooperation with the U.S. Department of Energy. 1992. 76 p. (NC, Da, M, Wb; USGS, WRD, Room A-413 Federal Bldg., Nashville, TN 37203; 1013 North Broadway, Knoxville, TN 37917; and AgriCenter International, 7777 Walnut Grove Rd., Suite LLB2, Memphis, TN 38119.)

WRI 92-4132. ALASKA. Glacier runoff and sediment transport and deposition, Eklutna Lake basin, Alaska, by T. P. Brabets. Prepared in cooperation with the Municipality of Anchorage. 1992. 47 p., 1 over-size sheet, scale 1:63,360 (1 inch = 1 mile). (NC, Da, M, Wb; USGS, WRD, 4230 University Dr., Suite 201, Anchorage, AK 99508-4664; 800 Yukon Dr., Fairbanks, AK 99775; and P.O. Box 21568, Juneau, AK 99802.)

WRI 92-4133. ARIZONA. Soil moisture and remotely sensed spectral data in a partial canopy cotton field at the Maricopa Agricultural Center, Pinal County, Arizona, 1988, by S. J. Owen-Joyce. Prepared in cooperation with the Arizona Department of Water Resources. 1992. 26 p. (NC, Da, M, Wb; USGS, WRD, 375 South Euclid Ave., Tucson, AZ 85719-6644; 1545 West University Dr., Tempe, AZ 85281; 2255 North Gemini Dr., Flagstaff, AZ 86001; and 1940 South 3rd Ave., Yuma, AZ 85364.)

WRI 92-4136. OREGON. Preliminary evaluation of water-quality conditions of Johnson Creek, Oregon, by T. K. Edwards and D. A. Curtiss. Prepared in cooperation with the City of Portland, Bureau of Environmental Services. 1993. 15 p. (NC, Da, M, Wb, S; USGS, Library, 5400 McArthur, Vancouver, WA 98661; and USGS, WRD, 1201 Pacific Ave., Suite 600, Tacoma, WA 98402.)

WRI 92-4137. KANSAS. Ground- and surface-water interaction between the Kansas River and associated alluvial aquifer, northeastern Kansas, by R. J. Wolf and J. O. Helgesen. Prepared in cooperation with the U.S. Bureau of Reclamation. 1993. 49 p. (NC, Da, M, Wb; USGS, WRD, 4821 Quail Crest Pl., Lawrence, KS 66049; and 206 Fulton Terrace, Garden City, KS 67846.)

WRI 92-4138. KENTUCKY. Contamination of soil, soil gas, and ground water by hydrocarbon compounds near Greear, Morgan County, Kentucky, by A. G. Alexander, D. D. Zettwoch, M. D. Unthank and R. B. Burns. Prepared in cooperation with the Kentucky Natural Resources and Environmental Protection Cabinet, Division of Waste Management. 1992. 37 p. (NC, Da, M, Wb.)

WRI 92-4140. FLORIDA. Water withdrawals, use, and trends in Florida, 1990, by R. L. Marella. Prepared in cooperation with the Florida Department of Environmental Regulation, Northwest Florida Water Management District, St. Johns River Water Management District, South Florida Water Management District, Southwest Florida Water Management District, and the Suwannee River Water Management District. 1992. 38 p. (NC, Da, M, Wb; USGS, WRD, Suite 3015, 227 North Bronough St., Tallahassee, FL 32301.)

WRI 92-4147. Effectiveness of highway edgedrains, by H. H. Jeffcoat, F. A. Kilpatrick, J. B. Atkins and J. L. Pearman. Prepared for the U.S. Department of Transportation. 1992. 79 p. (NC, Da, M, Wb.)

WRI 92-4149. ILLINOIS. Floods of September 26-October 4, 1986, and August 14-17, 1987, in Illinois, by G. O. Balding and A. L. Ishii. Prepared in cooperation with the Illinois Department of Transportation, Division of Water Resources. 1993. 105 p., 1 over-size sheet. (NC, Da, M, Wb, Wa; USGS, WRD, 102 East Main St., 4th Floor, Urbana, IL 61801.)

WRI 92-4150. KENTUCKY. Water quality of selected streams in Jefferson County, Kentucky, 1988-91, by R. D. Evaldi, R. J. Burns and B. L. Moore. Prepared in cooperation with the Louisville and Jefferson County Metropolitan Sewer District. 1993. 177 p. (NC, Da, M, Wb.)

WRI 92-4153. CALIFORNIA. Summary of ground-water data and evaluation of ground-water monitoring networks for eastern Merced County, California, by S. N. Hamlin. Prepared in cooperation with the City of Merced. 1993. 14 p. (NC, Da, M, Wb; USGS, WRD, Federal Bldg., Room W-2233, 2800 Cottage Way, Sacramento, CA 95825.)

WRI 92-4155. Documentation of finite-element mesh generation programs using a geographic information system, by R. A. Lowther and E. L. Kuniansky. 1992. 188 p. (NC, Da, M, Wb; USGS, WRD, 8011 Cameron Rd., Bldg. 1, Austin, TX 78753.) (Software information available from E. L. Kuniansky, USGS, WRD, Austin, TX 78753.)

WRI 92-4160. UTAH. Maps showing recharge areas and quality of ground water for the Navajo Aquifer, western Washington County, Utah, by G. W. Freethey. 1993. 1 over-size sheet, scales 1:240,000 (1 inch = about 3.8 miles) and 1:375,000 (1 inch = about 6 miles). (NC, Da, M, Wb, U.)

WRI 92-4162. MONTANA. Hydrology of valley fill and potential for additional ground-water withdrawals along the north flank of the Little Rocky Mountains, Fort Belknap Indian Reservation, north-central Montana, by D. W. Briar, P. K. Christensen and D. J. Oellermann. Prepared in the cooperation with the U.S. Bureau of Indian Affairs and the Fort Belknap Community Council. 1993. 86 p., 2 over-size sheets. (NC, Da, M, Wb, U, S; USGS, WRD, 301 South Park Ave., Room 428, Federal Bldg., Helena, MT, 59626-0076; USGS, Field Headquarters, Eastern Montana Coll., 1500 North 30th, Billings, MT 59101.)

WRI 92-4163. MONTANA. Lithologic logs of observation wells and test holes drilled in 1987 in valley fill along the north flank of the Little Rocky Mountains, Fort Belknap Indian Reservation, north-central Montana, by D. W. Briar and P. K. Christensen. Prepared in cooperation with the U.S. Bureau of Indian Affairs and the Fort Belknap Community Council. 1993. 41 p. (NC, Da, M, Wb, U, S; USGS, WRD, Room 428 Federal Bldg., 301 South Park Ave., Helena, MT 59626-0076; USGS, Field Headquarters, Eastern Montana Coll., 1500 North 30th, Billings, MT 59101.)

WRI 92-4165. TENNESSEE. Flood frequency of streams in rural basins of Tennessee, by J. D. Weaver and C. R. Gamble. Prepared in cooperation with the Tennessee Department of Transportation. 1993. 38 p. (NC, Da, M, Wb; USGS, WRD, 810 Broadway, Suite 500, Nashville, TN 37203; 1013 North Broadway, Knoxville, TN 37917; and AgriCenter International, 7777 Walnut Grove Rd., Suite LLB2, Memphis, TN 38119.)

WRI 92-4167. MISSOURI. Effects of reclamation on water quality and geochemical processes in lakes in an abandoned surface coal mine in Henry County, Missouri; August 1988-May 1990, by D. W. Blevins and A. C. Ziegler. Prepared in cooperation with the Missouri Department of Natural Resources, Land Reclamation Commission. 1992. 65 p. (NC, Da, M, Wb; USGS, WRD, 1400 Independence Rd., Mail Stop 200, Rolla, MO 65401.)

WRI 92-4168. HAWAII. Geohydrology and possible transport routes of polychlorinated biphenyls in Haiku Valley, Oahu, Hawaii, by S. K. Izuka, B. R. Hill, P. J. Shade and G. W. Tribble. Prepared in cooperation with the U.S. Coast Guard, Civil Engineering Unit, Honolulu. 1993. 48 p. (NC, Da, M, Wb.)

WRI 92-4169. KANSAS. Hydrogeology and ground-water-quality conditions at the Reno County landfill, south-central Kansas, 1990-91, by B. A. Heck, N. C. Myers and D. A. Hargadine. Prepared in cooperation with Reno County, Kansas. 1992. 56 p. (NC, Da, M; USGS, WRD, 4821 Quail Crest Pl., Lawrence, KS 66049; 206 Fulton Terrace, Garden City, KS 67846.)

WRI 92-4172. CALIFORNIA. Changes in water-quality conditions in Lexington Reservoir, Santa Clara County, California, following a large fire in 1985 and flood in 1986, by M. J. Taylor, J. M. Shay and S. N. Hamlin. Prepared in cooperation with the Santa Clara Valley Water District. 1993. 23 p. (NC, Da, M, Wb; USGS, WRD, Federal Bldg., Room W-2233, 2800 Cottage Way, Sacramento, CA 95825; and 5735 Kearny Villa Rd., Suite O, San Diego, CA 92123.)

WRI 92-4175. VIRGINIA. Quality of ground water in the Coastal Plain physiographic province of Virginia, by M. J. Focazio, G. K. Speiran and M. E. Rowan. Prepared in cooperation with the Hampton Roads Planning District Commission and Virginia Water Control Board. 1992. 20 p., 5 over-size sheets. (NC, Da, M, Wb; USGS, WRD, 603 Morris St., Charleston, WV 25301; 208 Carroll Bldg., 8600 La Salle Rd., Towson, MD 21204; and 300 South New St., Federal Bldg., Room 1201, Dover, DE 19901.)

WRI 92-4177. KANSAS. Hydrogeology and ground-water-quality conditions at the Sumner County landfill, south-central Kansas, 1989-90, by N. C. Myers, B. A. Heck and D. A. Hargadine. Prepared in cooperation with Sumner County, Kansas. 1993. 52 p. (NC, Da, M, Wb; USGS, WRD, 4821 Quail Crest Pl., Lawrence, KS 66049; and 206 Fulton Terrace, Garden City, KS 67846.)

WRI 92-4183. PENNSYLVANIA. Altitude and configuration of the potentiometric surface in Springfield Township, Bucks

County, Pennsylvania, April 1991 through October 1991, by C. L. Schreffler. Prepared in cooperation with New Hope Borough and Bridgeton, Buckingham, Nockamixon, Plumstead, Solebury, Springfield, Tinicum, and Wrightstown townships, Bucks County, Pennsylvania. 1993. 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, Wb; USGS, WRD, 111 Great Valley Pkwy., Malvern, PA 19355.)

WRI 92-4184. IDAHO. Geophysical logging studies in the Snake River Plain Aquifer at the Idaho National Engineering Laboratory; wells 44, 45, and 46, by R. H. Morin, Warren Barrash, F. L. Paillet and T. A. Taylor. 1993. 44 p. (NC, Da, M, Wb.)

WRI 92-4185. MONTANA. Water-surface profile and flood boundaries for the computed 100-year flood, Porcupine Creek, Fort Peck Indian Reservation and adjacent area, Montana, by R. J. Omang. Prepared in cooperation with the Fort Peck Tribes. 1993. 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, Wb, U, S; USGS, WRD, Room 428 Federal Bldg., 301 South Park Ave., Helena, MT 59626-0076; and Eastern Montana Coll., 1500 North 30th, Billings, MT 59101.)

WRI 92-4190. TEXAS. Ground-water conditions in Pecos County, Texas, 1987, by T. A. Small and G. B. Ozuna. Prepared in cooperation with the City of Fort Stockton, Texas. 1993. 63 p., 9 over-size sheets. (NC, Da, M, Wb; USGS, WRD, 8011 Cameron Rd., Bldg. A., Austin, TX 78754-3898.)

WRI 92-4193. NEW MEXICO. Ground-water-level fluctuations in the Cochiti Dam-Peña Blanca area, Sandoval County, New Mexico, 1976-89, by P. J. Blanchard. Prepared in cooperation with the U.S. Army Corps of Engineers. 1993. 72 p. (NC, Da, M, Wb; USGS, WRD, 4501 Indian School Rd. NE, Suite 200, Albuquerque, NM 87110-3929.)

WRI 92-4194. PENNSYLVANIA. Altitude and configuration of the potentiometric surfaces of the upper and lower aquifer systems in Bridgeton, Nockamixon, and Tinicum townships, Bucks County, Pennsylvania, April 1991 through April 1992, by B. C. McManus and C. J. Rowland. Prepared in cooperation with New Hope Borough and Bridgeton, Buckingham, Nockamixon, Plumstead, Solebury, Springfield, Tinicum, and Wrightstown townships, Bucks County, Pennsylvania. 1993. 1 over-size sheet. (NC, Da, M, Wb; USGS, WRD, 111 Great Valley Pkwy., Malvern, PA 19355.)

WRI 92-4195. KENTUCKY. Use of dye tracing to define the direction of ground-water flow from a Superfund waste-disposal site in karst terrane, near Auburn, Kentucky, by D. S. Mull. Prepared in cooperation with the U.S. Environmental Protection Agency. 1993. 28 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, Wb.)

WRI 92-4196. IDAHO. Statistical summaries of streamflow data for selected gaging stations on and near the Idaho National Engineering Laboratory, Idaho, through September 1990, by M. A. Stone, L. J. Mann and L. C. Kjelstrom. Prepared in cooperation with the U.S. Department of Energy. 1993. 35 p. (NC, Da, M, Wb; USGS, WRD, 230 Collins Rd., Boise, ID 83702.)

WRI 93-4001. IDAHO. Effects of well discharges on hydraulic heads in and spring discharges from the geothermal aquifer system in the Bruneau area, Owyhee County, southwestern Idaho, by C. E. Berenbrock. Prepared in cooperation with the U.S. Fish and Wildlife Service. 1993. 58 p. (NC, Da, M, Wb.)

WRI 93-4002. FLORIDA. Hydrology and water quality of unmined and reclaimed basins in phosphate-mining areas, west-central Florida, by B. R. Lewelling and R. W. Wylie. Prepared in cooperation with the Florida Institute of Phosphate Research. 1993. 93 p. (NC, Da, M, Wb; USGS, WRD, Suite B-5, 4710 Eisenhower Blvd., Tampa, FL 33634.)

WRI 93-4007. COLORADO, NEW MEXICO. Methane-concentration and methane-isotope data for ground water and soil gas in the Animas River valley, Colorado and New Mexico, 1990-91, by D. T. Chafin, D. M. Swanson and D. W. Grey. Prepared in cooperation with the Colorado Oil and Gas Conservation Commission, La Plata County, and the Southern Ute Tribal Council. 1993. 86 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, Wb; USGS, WRD, Bldg. 53, Denver Federal Ctr., Mail Stop 415, Box 25046, Lakewood, CO 80225; Federal Bldg., Room 210, PO Box 3367, 701 Camino Del Rio, Durango, CO 81302.) (Interim report.)

WRI 93-4011. Documentation of a computer program (STREAMLINK) to represent direct-flow connections in a coupled ground-water and surface-water model, by E. D. Swain. Prepared in cooperation with the South Florida Water Management District. 1993. 62 p. (NC, Da, M, Wb; Suite 107, 9100 NW 36th St., Miami, FL 33178.)

WRI 93-4012. MISSOURI. Surface-water and sediment quality in the Old Lead Belt, southeastern Missouri; 1988-89, by B. J. Smith and J. G. Schumacher. Prepared in cooperation with the Missouri Department of Natural Resources, Land Reclamation Commission. 1993. 92 p. (NC, Da, M, Wb; USGS, WRD, 1400 Independence Rd., Mail Stop 200, Rolla, MO 65401.)

WRI 93-4013. ARKANSAS. Regionalization of low-flow characteristics of Arkansas streams, by A. H. Ludwig and G. D. Tasker. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 26 p., 1 over-size sheet, scale 1:1,000,000 (1 inch = 16 miles); one 3 1/2 inch DS/HD diskette. (NC, Da, M, Wb; USGS, WRD, 2301 Federal Office Bldg., 700 West Capitol Ave., Little Rock, AR 72201.)

A 3 1/2-inch floppy disk containing the Fortran program is included in the report. The program is compatible with the MS DOS operating system.

WRI 93-4015. VIRGINIA. Documentation of geographic-information-system coverages and data-input files used for analysis of the geohydrology of the Virginia coastal plain, by M. J. Focazio and T. B. Samsel, III. Prepared in cooperation with the Hampton Roads Planning District Commission and the Virginia Water Control Board. 1993. 53 p. (NC, Da, M, Wb; USGS, WRD, 603 Morris St., Charleston, WV 25301; 208 Carroll Bldg., 8600 La Salle Rd., Towson, MD 21204; and 300 South New St., Federal Bldg., Room 1201, Dover, DE 19901.)

WRI 93-4016. GEORGIA. Techniques for estimating magnitude and frequency of floods in rural basins of Georgia, by T. C. Stamey and G. W. Hess. Prepared in cooperation with the Georgia Department of Transportation. 1993. 69 p. (NC, Da, M, Wb; USGS, WRD, Peachtree Business Ctr., Suite 130, 3039 Amwiler Rd., Doraville, GA 30360-2824.)

WRI 93-4030. CALIFORNIA. Application of a hydrochemical model and a multivariate soil-solution mixing model to alpine watersheds in the Sierra Nevada, California, by R. P. Hooper and N. E. Peters. Prepared in cooperation with the California Air

Resources Board. 1993. 58 p. (NC, Da, M, Wb; USGS, WRD, 3039 Amwiler Rd., Peachtree Business Ctr., Suite 130, Atlanta, GA 30360-2824.)

WRI 93-4031. NORTH CAROLINA. Bathymetry of Lake Michie, Durham County, North Carolina, 1990-92, by J. C. Weaver. Prepared in cooperation with the City of Durham Department of Water Resources and the North Carolina Department of Environment, Health and Natural Resources. 1993. 1 over-size sheet, scale 1:4,800 (1 inch = 400 feet). (NC, Da, M, Wb; USGS, WRD, 3916 Sunset Ridge Rd., Raleigh, NC 27607; and Spalding Woods Office Park, 3850 Holcomb Bridge Rd., Suite 160, Norcross, GA 30092.)

WRI 93-4036. KANSAS. Hydrogeology and ground-water-quality conditions at the Harvey County landfill, south-central Kansas, 1990, by J. O. Helgesen, B. A. Heck and D. A. Hargadine. Prepared in cooperation with Harvey County, Kansas. 1993. 44 p. (NC, Da, M, Wb; USGS, WRD, 4821 Quail Crest Pl., Lawrence, KS 66049; and 206 Fulton Terrace, Garden City, KS 67846.)

WRI 93-4038. GEORGIA. Ground-water quality of the upper Floridan Aquifer near an abandoned manufactured gas plant in Albany, Georgia, by M. J. Chapman. Prepared in cooperation with the Albany Water, Gas, and Light Commission. 1993. 19 p. (NC, Da, M, Wb; USGS, WRD, 3039 Amwiler Rd., Peachtree Business Ctr., Suite 130, Atlanta, GA 30360-2824.)

WRI 93-4047. OHIO. Hydrogeology, simulated ground-water flow, and ground-water quality, Wright-Patterson Air Force Base, Ohio, by D. H. Dumouchelle, C. W. Schalk, G. L. Rowe and J. T. de Roche. Prepared in cooperation with Wright-Patterson Air Force Base. 1993. 152 p. (NC, Da, M, Wb.)

WRI 93-4054. IDAHO. Age dating ground water by use of chlorofluorocarbons (CCl_3F and CCl_2F_2), and distribution of chlorofluorocarbons in the unsaturated zone, Snake River Plain Aquifer, Idaho National Engineering Laboratory, Idaho, by Eurybiades Busenberg, E. P. Weeks, L. N. Plummer and R. C. Bartholomay. Prepared in cooperation with the U.S. Department of Energy. 1993. 47 p. (NC, Da, M, Wb; USGS, WRD, 230 Collins Rd., Boise, ID 83702.)

WRI 93-4060. WASHINGTON. Long-term effects of irrigation with imported water on water levels and water quality, by B. W. Drost, J. C. Ebbert and S. E. Cox. Prepared in cooperation with the State of Washington Department of Ecology. 1993. 19 p. (NC, Da, M, Wb.)

WRI 93-4076. Hydro-Climatic Data Network (HCDN) streamflow data set, 1874-1988, by J. R. Slack, A. M. Lumb and J. M. Landwehr. 1993. One CD-ROM. (NC, Da, M, Wb.)

All of the data are present in ASCII files readable on any system supporting ISO 9660 standard CD-ROMs. Minimum system requirements for using the software: IBM PC compatible; 540K RAM free, MS-DOS 3.1 or higher; Microsoft MSCDEX 2.1 or higher; CD-ROM reader with ISO 9660 driver; and hard disk with at least 1MB free space.

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Open-file reports are also available for reference only, **not for purchase**, at additional locations indicated in each open-file listing. Symbols for these locations are defined above for Water-Resources Investigations Reports.

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Microfiche and (or) black and white paper copies of most reports may be obtained from: USGS ESIC—Open-File Report Section, Box 25286, Mail Stop 517, Federal Center, Denver, CO 80225 (telephone 303-236-7476). When ordering, please use the open-file number and full title. *Do not mix orders for open-file reports with orders for other Geological Survey products.* Prices for duplicate slides and color photographs can be obtained on request. Check or money order, in exact amount for open-file reports ordered, should be payable to Department of the Interior—USGS. Prepayment is required. No discount is applicable. For transmittal outside the U.S.A. (except Canada and Mexico), a surcharge of 25 percent of the bill should be included to cover surface transportation.

OF 85-0642. PUERTO RICO. Agua subterranea en Puerto Rico [Ground water in Puerto Rico], by Ferdinand Quiñones-Marquez and José Alicea-Ortiz. 1985. 6 p. (NC, Da, M, Wb; USGS, WRD, GPO Box 4424, San Juan, PR 00936.)

OF 89-0450-C. CALIFORNIA. Petroleum geology of the Santa Maria Basin assessment province, California for the 1987 national assessment of undiscovered oil and gas resources, by C. M. Isaacs. 1992. 43 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 89-0450-D. CALIFORNIA. Petroleum geology of the Central Coastal Basins assessment province, California, for the 1987 national assessment of undiscovered oil and gas resources, by C. M. Isaacs. 1992. 49 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 89-0583. NEW HAMPSHIRE. Geohydrologic, ground-water-quality, and streamflow data for the stratified-drift aquifers in the Bellamy, Cocheco, and Salmon Falls River basins, southeastern New Hampshire, by S. M. Lawlor and T. J. Mack. Prepared in cooperation with the New Hampshire Department of Environmental Services, Water Resources Division. 1992. 137 p., 3 over-size sheets, scale 1:48,000 (1 inch = 4,000 feet). (NC, Da, M, Wb.)

OF 90-0110. MISSISSIPPI. Channel and bank stability of Wolf Creek, and a tributary at U.S. Highway 45 near Wheeler, Prentiss County, Mississippi, by K. V. Wilson, Jr. and D. P. Turnipseed. Prepared in cooperation with the Mississippi State Highway Department. 1992. 18 p. (NC, Da, M, Wb; USGS, WRD, 100 West Capitol St., Suite 710; Jackson, MS 39269.)

OF 90-0130. County-level estimates of nitrogen and phosphorus fertilizer use in the United States, 1945 to 1985, by R. B. Alexander and R. A. Smith. 1990. 12 p. (NC, Da, M, Wb.)

OF 90-0153. NEVADA. Hydrologic data for east-central Nevada, water years 1982-88, by C. S. Savard and E. J. Crompton. Prepared in cooperation with the Nevada Division of Water Resources. 1993. 128 p. (NC, Da, M, Wb, U; USGS, WRD, 333 West Nye Lane, Carson City, NV 89701; and 1500 East Tropicana, Suite 201, Las Vegas, NV 89119.)

OF 90-0194. A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems; Part 1, Model description and user's manual, by L. J. Torak. 1992. 153 p. (NC, Da, M, Wb; USGS, WRD, 6481-B Peachtree Industrial Blvd., Doraville, GA 30360.)

OF 90-0369. NEVADA. Geohydrologic data from test holes UE-25 UZ #4 and UE-25 UZ #5, Yucca Mountain, Nye County, Nevada, by C. L. Loskot and D. P. Hammermeister. 1992. 56 p. (NC, Da, M, Wb; USGS, WRD, Box 25046, Mail Stop 421, Denver Federal Ctr., Denver, CO 80225.)

OF 90-0381. NEVADA. Water-resources data for the Devils Hole area, Nye County, Nevada, July 1978-September 1988, by C. L. Westenberg. Prepared in cooperation with the National Park Service. 1993. 13 p. (NC, Da, M, Wb, U; USGS, WRD, Room 224, Federal Bldg., 705 North Plaza St., Carson City, NV 89701; and 1500 East Tropicana, Suite 201, Las Vegas, NV 89119.)

OF 90-0506. OREGON. Analytical results and sample locality map of stream-sediment, heavy-mineral-concentrate, rock, vegetation, lake-sediment, and evaporite samples from the Diablo Mountain Wilderness Study Area(OR-001-058), Lake County, Oregon, by B. M. Adrian, D. L. Fey, H. D. King and P. L. Hageman. 1993. 42 p., 1 over-size sheet, scale 1:48,000 (1 inch = 4,000 feet). (NC, Da, M, S; Oregon Dep. of Geol. and Mineral Industries, Suite 965, 800 NE Oregon St. #28, Portland, OR 97232-2162.)

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OF 90-0677. CALIFORNIA. Measurement of structural response characteristics of full-scale buildings; selection of structures, by R. D. Marshall, L. T. Phan and Mehmet Celebi. National Institute of Standards and Technology, Interagency Rep. 90-4511. 1990. 16 p. (NC, Da, M.)

OF 91-0014. Joint Education Initiative, JEdI, 1990 teacher activities book, edited by J. D. Sproull. 1991. 76 p. (NC, Da, M.)

The 1990 Joint Education Initiative (JEdI); an agent of change for education, by J. D. Sproull. p. 1-3.

CD-ROM, by E. J. McFaul. p. 4.

Digital image processing summary, by Jet Propulsion Laboratory. p. 5.

JEdI disc descriptions, by D. K. Traudt. p. 6-7.

JEdI activities summary, by J. D. Sproull. p. 8.

Developing a physiographic map of North America, by M. C. Horn and Dana Van Burgh. p. 9-15.

Modeling coastal flooding, by J. D. Sproull. p. 16-19.

Biomes; detecting vegetation through remote sensing, by Barclay Anderson and Rebecca McDonnell. p. 20-22.

Changing ozone levels in the Earth's atmosphere, by Anthony Marcino, William Miller and JoAnn Mulvany. p. 23-27.

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Temperature/salinity profiles of the Pacific Ocean, by Donald Hyatt and Richard Knight. p. 38-41.

Identifying atoms and molecules in comets, by A. M. Stowe. p. 42-51.

Antarctica; three views, by Jeanne Endrikat and Keith Franklin. p. 52-58.

Enhancing Voyager images, by Gary Purinton. p. 59-67.

Sea floor features; analyzing and mapping the ocean floor, by P. F. Corro. p. 68-72.

OF 91-0032. CALIFORNIA. Short-term earthquake hazard assessment for the San Andreas Fault in Southern California, chaired by L. M. Jones, K. E. Sieh, D. C. Agnew, C. R. Allen, Roger Bilham, Mark Ghilarducci, B. H. Hager, Egill Hauksson, K. W. Hudnut, D. D. Jackson and A. G. Sylvester. 1991. 42 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; State Office Bldg., 107 Broadway, Los Angeles, CA 90012.)

Prediction probabilities from foreshocks, by D. C. Agnew and L. M. Jones. 13 p.

OF 91-0098. IDAHO, OREGON. Summary of the Snake River plain Regional Aquifer-System Analysis in Idaho and eastern Oregon, by G. F. Lindholm. 1993. 62 p., 1 over-size sheet, scale 1:1,000,000 (1 inch = about 16 miles). (NC, Da, M, Wb; USGS, WRD, 230 Collins Rd., Boise, ID 83702.)

OF 91-0180. NEW YORK. Ground-water quality in five areas of differing land use in Nassau and Suffolk counties, Long Island, New York, 1987-88, by C. E. LeaMond, R. J. Haefner, S. J. Cauller and P. E. Stackelberg. 1992. 67 p. (NC, Da, M, Wb; USGS, WRD, 5 Aerial Way, Syosset, NY 11791.)

OF 91-0366-A. MacH_2O; a computer interface to calculate the thermodynamic and transport properties of pure water, by R. J. Rosenbauer. 1991. 65 p. (NC, Da, M.)

OF 91-0366-BC. MacH_2O; a computer interface to calculate the thermodynamic and transport properties of pure water, by R. J. Rosenbauer. 1991. Two 3 1/2 inch diskettes. (NC, Da, M.)

Requirements: Apple-Macintosh computer; minimum 512K RAM; math coprocessor.

OF 91-0435. CALIFORNIA. Preliminary geologic map of the East Mojave National Scenic Area, California, compiled by D. M.

Miller, R. J. Miller, J. E. Nielson, H. G. Wilshire, K. A. Howard and Paul Stone. 1991. 8 p., 1 over-size sheet. (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 91-0441-T. WASHINGTON. Evaluation of liquefaction potential, Seattle, Washington, by W. P. Grant, W. J. Perkins and T. L. Youd. 1992. 44 p., 1 over-size sheet. (NC, Da, M, S; Geol. and Earth Resources Div., Dep. of Natural Resources, Olympia WA 98504; David A. Johnston Cascade Volcano Observatory, 5400 MacArthur Blvd., Vancouver, WA 98661; Dep. of Geol. and Mineral Industries, 910 State Office Bldg., Portland, OR 97201-5528.)

OF 91-0449-A. REMAPP-PC; remote sensing image processing software for MS-DOS personal computers, version 2.00, by K. E. Livo and A. J. Gallagher. 1991. 83 p. (Documentation.) (NC, Da, M.) (Supersedes OF 90-88-A.)

OF 91-0449-B. REMAPP-PC; remote sensing image processing software for MS-DOS personal computers, version 2.00, by K. E. Livo and A. J. Gallagher. 1991. One 5 1/4 inch diskette. (Installation and executable programs.) (NC, Da, M.) (Supersedes OF 90-88 B-E.)

Requirements: IBM PC or compatible; minimum 640K RAM; VGA graphics board (SuperVGA not supported). Diskette is 5 1/4 inch, high density, MS-DOS format.)

OF 91-0449-C. REMAPP-PC; remote sensing image processing software for MS-DOS personal computers, version 2.00, by K. E. Livo and A. J. Gallagher. 1991. One 5 1/4 inch diskette. (Executable programs and source code.) (NC, Da, M.) (Supersedes OF 90-88 B-E.)

Requirements: IBM PC or compatible; minimum 640K RAM; VGA graphics board (SuperVGA not supported). Diskette is 5 1/4 inch, high density, MS-DOS format.

OF 91-0449-D. REMAPP-PC; remote sensing image processing software for MS-DOS personal computers, version 2.00, by K. E. Livo and A. J. Gallagher. 1991. One 5 1/4 inch diskette. (Documentation and Landsat MSS test images; Canon City, Colorado.) (NC, Da, M.) (Supersedes OF 90-88 B-E.)

Requirements: IBM PC or compatible; minimum 640K RAM; VGA graphics board (SuperVGA not supported). Diskette is 5 1/4 inch, high density, MS-DOS format.

OF 91-0449-E. REMAPP-PC; remote sensing image processing software for MS-DOS personal computers, version 2.00, by K. E. Livo and A. J. Gallagher. 1991. One 5 1/4 inch diskette. (Landsat 4 TM text images (TM Disk 1 of 2); Canon City and Central City, Colorado.) (NC, Da, M.) (Supersedes OF 90-88 B-E.)

Requirements: IBM PC or compatible; minimum 640K RAM; VGA graphics board (SuperVGA not supported). Diskette is 5 1/4 inch, high density, MS-DOS format.

OF 91-0449-F. REMAPP-PC; remote sensing image processing software for MS-DOS personal computers, version 2.00, by K. E. Livo and A. J. Gallagher. 1991. One 5 1/4 inch diskette. (Landsat 4 TM text images (TM Disk 2 of 2); Canon City and Central City, Colorado.) (NC, Da, M.) (Supersedes OF 90-88 B-E.)

Requirements: IBM PC or compatible; minimum 640K RAM; VGA graphics board (SuperVGA not supported). Diskette is 5 1/4 inch, high density, MS-DOS format.

OF 91-0449-G. REMAPP-PC; remote sensing image processing software for MS-DOS personal computers, version 2.00, by K. E. Livo and A. J. Gallagher. 1991. One 5 1/4 inch diskette. (AVIRIS (NASA) imaging spectrometry test data; Globe Hill-Cripple Creek, Colorado.) (NC, Da, M.) (Supersedes OF 90-88 B-E.)

Requirements: IBM PC or compatible; minimum 640K RAM; VGA graphics board (SuperVGA not supported). Diskette is 5 1/4 inch, high density, MS-DOS format.)

OF 91-0453. WASHINGTON. Surface-water-quality assessment of the Yakima River basin, Washington; analysis of available water-quality data through 1985 water year, by J. F. Rinella, S. W. McKenzie and G. J. Fuhrer. 1992. 244 p., 1 over-size sheet, scale 1:250,000 (1 inch = about 4 miles). (NC, Da, M, Wb.)

Water-resource development, by O. J. Perala. p. 30-38.

Bed sediment, by T. L. Fries and J. L. Ryder. p. 142-147.

Fish and other aquatic biological communities, by S. S. Embrey and B. D. Watson. p. 163-176.

OF 91-0454. WASHINGTON. Executive summary; surface-water-quality assessment of the Yakima River basin, Washington; analysis of available water-quality data through 1985 water year, by J. F. Rinella, S. W. McKenzie and G. J. Fuhrer. 1992. 15 p. (NC, Da, M, Wb.)

OF 91-0455. NEW MEXICO, TEXAS. Listing of model input values for the simulation of ground-water flow in the Mesilla Basin, Dona Ana County, New Mexico, and El Paso County, Texas, by P. F. Frenzel. 1992. 7 p., two 5 1/4 inch DS/DD IBM compatible diskettes. (NC, Da, M, Wb; USGS, WRD, 4501 Indian School Rd. NE, Suite 200, Albuquerque, NM 87110.) (Supplement to WRI 91-4155 and OF 88-305.)

OF 91-0458. ALASKA. Water-quality and soil assessment at 28 exploratory wellsites in the National Petroleum Reserve in Alaska, 1989-90, by J. O. Brunett, G. L. Solin, M. R. Carr, R. L. Glass, G. L. Nelson and R. C. Buchmiller. 1991. 127 p., thirteen 5 1/4 inch diskettes. (NC, Da, M, Wb.)

The data for the report are on thirteen 5 1/4 inch, 1.2MB diskettes that can be used on an IBM PC or compatible. The data are in 132-column ASCII format.

OF 91-0471. A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems; Part 3, Design philosophy and programming details, by L. J. Torak. 1992. 261 p. (NC, Da, M, Wb; USGS, WRD, 6481-B Peachtree Industrial Blvd., Doraville, GA 30360.)

OF 91-0478. NEVADA. Simulated water-level declines caused by withdrawals from wells J-13 and J-12 near Yucca Mountain, Nevada, by J. B. Czarnecki. Prepared in cooperation with U.S. Department of Energy. 1992. 20 p. (NC, Da, M, Wb.)

OF 91-0483. SOUTH CAROLINA. Saltwater movement in the upper Floridan Aquifer beneath Port Royal Sound, South Carolina, by B. S. Smith. Prepared in cooperation with the South Carolina Water Resources Commission. 1993. 64 p. (NC, Da, M, Wb; USGS; WRD, Stephenson Ctr., Suite 129, 720 Gracern Rd., Columbia, SC 29210-7651.)

OF 91-0485. Hydrologic and sedimentologic data collected during three cruises at low water on the Mississippi River and some of its tributaries, July 1987-June 1988, by J. A. Moody and R. H. Meade. 1992. 143 p. (NC, Da, M, Wb.)

OF 91-0493. NEVADA. Water levels in continuously monitored wells in the Yucca Mountain area, Nevada, 1985-88, by R. R. Luckey, D. H. Lobmeyer and D. J. Burkhardt. Prepared in cooperation with the U.S. Department of Energy. 1993. 252 p. (NC, Da, M, Wb; USGS, WRD, Bldg. 53, Denver Federal Ctr., Mail Stop 415, Box 25046, Lakewood, CO 80225.)

OF 91-0513. Membrane-micelle model for humus in soils and sediments and its relation to humification, by R. L. Wershaw. 1992. 64 p. (NC, Da, M, Wb.)

OF 91-0533. WYOMING. Physical, chemical, and biological data for detailed study of irrigation drainage in the Kendrick Reclamation Project area, Wyoming, 1988-90, by R. B. See, D. A. Peterson and Pedro Ramirez, Jr. Prepared in cooperation with the U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, and the Wyoming Department of Environmental Quality. 1992. 272 p. (NC, Da, M, Wb, U; USGS, WRD, 2617 East Lincolnway, Suite B, Cheyenne, WY 82001.)

OF 91-0535. CALIFORNIA. Numerical simulation of ground-water flow in the central part of the western San Joaquin Valley, California, by K. R. Belitz, S. P. Phillips and J. M. Gronberg. Prepared in cooperation with the San Joaquin Valley Drainage Program. 1992. 71 p. (NC, Da, M, Wb; USGS, WRD, Federal Bldg., Room W-2234, 2800 Cottage Way, Sacramento, CA 95825; and 5735 Kearny Villa Rd., Suite O, San Diego, CA 92123.)

OF 91-0573. MISSOURI. Total intensity magnetic anomaly map of Missouri, by T. G. Hildenbrand and R. P. Kucks. 1991. 1 over-size sheet, scale 1:500,000 (1 inch = about 8 miles). (NC, Da, M; Department of Natural Resources, Div. of Geol. and Land Surv., 111 Fairgrounds Rd., PO Box 250, Rolla, MO 65401.)

OF 91-0600-D. Preliminary determination of epicenters; monthly listing October-December 1991, by National Earthquake Information Center. 1991. 92 p. (NC, Da, M.)

OF 91-0623. NEVADA. Photogeologic and kinematic analysis of lineaments at Yucca Mountain, Nevada; implications for strike-slip faulting and oroclinal bending, by J. M. O'Neill, J. W. Whitney and M. R. Hudson. Prepared in cooperation with the U.S. Department of Energy. 1992. 24 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088.)

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OF 92-0008-A. ALASKA. Analytical results and sample locality maps of rock samples from the eastern Goodnews Bay Quadrangle, Southwest Alaska, by J. E. Gray, B. M. Adrian, P. L. Hageman and J. E. Kilburn. 1992. 21 p. (NC, Da, M, A, S; Alaska Div. of Geol. and Geophys. Surv., P.O. Box 7028, Anchorage, AK 99510; U.S. Dep. of Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513.)

OF 92-0008-B. ALASKA. Analytical results and sample locality maps of rock samples from the eastern Goodnews Bay Quadrangle, Southwest Alaska, by J. E. Gray, B. M. Adrian, P. L. Hageman and J. E. Kilburn. 1992. One 5 1/4 inch diskette. (NC, Da, M, A, S; Alaska Div. of Geol. and Geophys. Surv., P.O. Box 7028, Anchorage, AK 99510; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513.)

Requirements: IBM compatible computer using MS DOS with a 5 1/4 inch, 360K drive.

OF 92-0009. Methods for separation and total stable isotope analysis of alunite, by M. D. Wasserman, R. O. Rye, P. M. Bethke and Antonio Arribas, Jr. 1992. 20 p. (NC, Da, M.)

OF 92-0020-B. ALASKA. Ophiolitic and other mafic-ultramafic metallogenic provinces in Alaska; west of the 141st meridian, by J. Y. Foley. 1992. 55 p., 1 over-size sheet, scale 1:2,500,000 (1 inch = about 40 miles). (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 92-0020-E. ALASKA. Ophiolitic complexes and associated rocks near the Border Ranges fault zone, south central Alaska, by L. E. Burns. 1992. 7 p., 1 over-size sheet. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 92-0020-G. ALASKA. Ophiolitic terranes of East-Central and Southwestern Alaska, by W. W. Patton, Jr. and S. E. Box. 1992. 13 p., 2 over-size sheets. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 92-0026. WISCONSIN. Data on water quality, lake sediment, and lake-level fluctuation, St. Croix Indian Reservation, Wisconsin, 1981-87, by D. P. Krabbenhoft and J. T. Krohelski. Prepared in cooperation with the St. Croix Indian Tribe of Wisconsin. 1992. 53 p. (NC, Da, M, Wb; USGS, WRD, 6417 Normandy Lane, Madison, WI 53719-1133.)

OF 92-0027. IOWA. The ground-water level monitoring network in Iowa, by R. B. Lambert. Prepared in cooperation with the Iowa Department of Natural Resources. 1992. 31 p. (NC, Da, M, Wb; USGS, WRD, P.O. Box 1230, 400 South Clinton, Room 269, Iowa City, IA 52244.)

OF 92-0028. NEVADA. Borehole and geohydrologic data for test hole USW UZ-6, Yucca Mountain, Nye County, Nevada, by M. S. Whitfield, Jr., C. M. Cope and C. L. Loskot. Prepared in cooperation with the U.S. Department of Energy. 1993. 36 p. (NC, Da, M, Wb; USGS, WRD, Yucca Mountain Project Branch, Room H-2726, Bldg. 53, Mail Stop 421, Denver Federal Ctr., Denver, CO 80225-0046.)

OF 92-0052. Sensitivity of water resources in the Delaware River basin to climate variability and change, by M. A. Ayers, D. M. Wolock, G. J. McCabe, Jr., L. E. Hay and G. D. Tasker. 1993. 68 p. (NC, Da, M, Wb; USGS, WRD, Suite 206, 810 Bear Tavern Rd., West Trenton, NJ 08628.)

Water supply and water use, by D. J. Phelan and M. A. Ayers. p. 28-29.

Effects of climate, topography, and soils on hydrologic characteristics, by D. M. Wolock and C. V. Price. p. 29-30.

Effects on estuary salinity, by R. A. Walters and M. A. Ayers. p. 48-53.

Effects on coastal aquifers, by W. H. Werkheiser and M. A. Ayers. p. 53-54.

OF 92-0055. INDIANA. Ground-water levels and directions of flow in the vicinity of a pumping well field, Elkhart, Indiana, December 1989, by R. F. Duwelius and L. R. Watson. Prepared in cooperation with the U.S. Environmental Protection Agency. 1992. 24 p. (NC, Da, M, Wb; USGS, WRD, 5957 Lakeside Blvd., Indianapolis, IN 46278.)

OF 92-0065. WEST VIRGINIA. Flow and solute-transport models for the New River in the New River Gorge National River, West Virginia, by J. B. Wiley. Prepared in cooperation with the National Park Service. 1992. 53 p. (NC, Da, M, Wb; USGS, WRD, 603 Morris St., Charleston, WV 25301.)

OF 92-0083. Accounting system for water use by vegetation in the lower Colorado River valley, by S. J. Owen-Joyce. 1992. 2 p. (NC, Da, M, Wb, A, S.) (Water fact sheet.)

OF 92-0085. IOWA, MINNESOTA. Agricultural chemical interchange between ground water and surface water, Cedar River basin, Iowa and Minnesota; a study description, by P. J. Squillace, M. J. Liszewski and E. M. Thurman. 1993. 26 p. (NC, Da, M, Wb; USGS, WRD, Room 269, Federal Bldg., 400 South Clinton St., Iowa City, IA 52244.)

OF 92-0094. IOWA. Floods of 1986 and 1990 in the Raccoon River basin, west-central Iowa, by R. W. Baebenroth and B. D. Schaap. Prepared in cooperation with the Iowa Department of Transportation, Highway Research Advisory Board. 1992. 144 p. (NC, Da, M, Wb; USGS, WRD, 400 South Clinton St., Iowa City, IA 52244; Federal Bldg., Room 250, 8 South 6th St., Council Bluffs, IA 51502; and Federal Bldg., Room 456, 205 South 8th St., Fort Dodge, IA 50501.)

OF 92-0095. NEW HAMPSHIRE. Geohydrologic and ground-water-quality data for stratified-drift aquifers in the Exeter, Lamprey, and Oyster River basins, southeastern New Hampshire, by R. B. Moore. Prepared in cooperation with the New Hampshire State Department of Environmental Services, Water Resources Division. 1992. 136 p., 4 over-size sheets, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, Wb; USGS, WRD, 525 Clinton St., Bow, NH 03304.)

OF 92-0105. Documentation of a computer program for data retrieval from U.S. Geological Survey National Water-Data Storage and Retrieval System, by J. E. Morris. 1992. 64 p., one 5 1/4 inch diskette. (NC, Da, M, Wb; USGS, WRD, 1400 Independence Rd., Rolla, MO 65401.)

Requirements: IBM PC or compatible computer using DOS 3.0 or higher; a minimum of 425K of random access memory (RAM), a hard disk, a 5 1/4 inch floppy disk drive, and a Hayes compatible modem. The quantity of disk space needed on the hard disk for PC-WATSTORE is less than 400K. Additional space will be required when the results of the retrievals are stored on the personal computer. PC-WATSTORE was written to use KERMIT and the modem to dial the Amdahl computer. Remote job entry software and a synchronous modem also may be used. PC-WATSTORE was developed using the C programming language.

OF 92-0108. ARKANSAS. A user's guide to the Arkansas Rural Water-Delivery Network Geographic Information System (GIS) software, by J. E. Monical. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1992. 22 p. (NC, Da, M, Wb; USGS, WRD, 700 West Capitol Ave., 2301 Federal Office Bldg., Little Rock, AR 72201.)

OF 92-0113. GEORGIA. Annual peak discharges and stages for gaging stations in Georgia through September 1990, by G. W. Hess and T. C. Stamey. Prepared in cooperation with the Georgia Department of Transportation, Highway Division. 1993. 277 p. (NC, Da, M, Wb.)

OF 92-0114. MICHIGAN. Ground-water data for Michigan, 1990, by G. C. Huffman and C. R. Whited. Prepared in cooperation with the Michigan Department of Natural Resources, Geological Survey Division. 1993. 51 p. (NC, Da, M, Wb; USGS, WRD, 6520 Mercantile Way, Suite 5, Lansing, MI 48911.)

OF 92-0120. OHIO. Streamflow, water-quality, and biological data on streams in an area of longwall coal mining, southern Ohio, water years 1987-89, by A. W. Coen, III. Prepared in cooperation with the Ohio Department of Natural Resources, Division of Reclamation. 1992. 71 p. (NC, Da, M, Wb; USGS, WRD, 975 West Third Ave., Columbus, OH 43212.)

OF 92-0122. COLORADO. Climatologic, soil-water, ground-water, geologic, surface-water, and water-quality data for a surface coal mine in northwestern Colorado, by R. S. Williams, Jr., G. M. Clark and N. E. Spahr. Prepared in cooperation with the U.S. Bureau of Land Management and the Colorado Department of Natural Resources, Mined Land Reclamation Division. 1993. 218 p. (NC, Da, M, Wb.)

OF 92-0123. NORTH CAROLINA. An interim report on flows in the lower Roanoke River, and water quality and hydrodynamics of Albemarle Sound, North Carolina, October 1989-April 1991, by J. D. Bales, A. G. Strickland and R. G. Garrett. Prepared in cooperation with the Albemarle-Pamlico Estuarine Study, Division of Water Resources of the North Carolina Department of Environment, Health, and Natural Resources, U.S. Army Corps of Engineers. 1993. 133 p. (NC, Da, M, Wb; USGS, WRD, 3916 Sunset Ridge Rd., Raleigh, NC 27607.)

OF 92-0124. UTAH. Records of wells in sandstone and alluvial aquifers and chemical data for water from selected wells in the Navajo Aquifer in the vicinity of the Greater Aneth oil field, San Juan County, Utah, by L. E. Spangler. Prepared in cooperation with the Utah Division of Oil, Gas, and Mining, and the U.S. Environmental Protection Agency. 1992. 44 p. (NC, Da, M, Wb, U.)

OF 92-0129. Hydro-Climatic Data Network (HCDN); a U.S. Geological Survey stream-discharge data set for the United States for the study of climate variation, 1874-1988, by R. J. Slack and J. M. Landwehr. 1992. 193 p. One 5 1/4 inch DS/HD IBM compatible diskette. (NC, Da, M, Wb.)

The files on the disk are written in ASCII character type mode.

OF 92-0134. New pressure-based water-level sensor used by the U.S. Geological Survey, by V. J. Latkovich. 1992. 6 p. (NC, Da, M, Wb.)

OF 92-0135. TENNESSEE. Well-construction, water-level, geophysical, and water-quality data for ground-water monitoring wells for Arnold Air Force Base, Tennessee, by C. J. Hough, E. N. Mahoney and J. A. Robinson. Prepared in cooperation with the U.S. Air Force, Arnold Air Force Base. 1992. 88 p. (NC, Da, M, Wb; USGS, WRD, 810 Broadway, Suite 500, Nashville, TN 37203.)

OF 92-0138. A coupled surface-water and ground-water flow model for simulation of stream-aquifer interaction, by E. D. Swain and E. J. Wexler. Prepared in cooperation with the South Florida Water Management District. 1993. 162 p. (NC, Da, M, Wb; USGS, WRD, Suite 3015, 227 North Bronough St., Tallahassee, FL 32301; Suite 107, 9100 NW 36th St., Miami, FL 33178; Suite 1006, 224 West Central Pkwy., Altamonte Springs, FL 32714; and Suite B-5, 4710 Eisenhower Blvd., Tampa, FL 33634.)

OF 92-0143. MASSACHUSETTS. A study of ground-water flow beneath the Massachusetts Military Reservation, Cape Cod, Massachusetts, by P. M. Barlow and D. R. LeBlanc. Prepared in cooperation with the National Guard Bureau. 1992. 2 p. (NC, Da, M, Wb; USGS, WRD, 28 Lord Rd., Suite 280, Marlborough, MA 01752.)

OF 92-0144. Determination of error in individual discharge measurements, by V. B. Sauer and R. W. Meyer. 1992. 21 p. (NC, Da, M, Wb.)

OF 92-0146. Methods of analysis by the U.S. Geological Survey National Water Quality Laboratory; determination of total phosphorus by a Kjeldahl digestion method and an automated colorimetric finish that includes dialysis, by C. J. Patton and E. P. Truitt. 1992. 39 p. (NC, Da, M, Wb.)

OF 92-0150. PUERTO RICO. Research plan for the investigation of water, energy, and biogeochemical budgets in the Luquillo Mountains, Puerto Rico, by M. C. Larsen, P. D. Collar and R. F. Stallard. 1993. 19 p. (NC, Da, M, Wb; USGS, WRD, Hwy. 28 km 7.2, Bldg. 652, GSA Ctr., Guaynabo, PR 00657.)

OF 92-0153. NEW JERSEY. Water-quality reconnaissance of the perimeter of the Rolling Knoll Landfill near Green Village, New Jersey, and electromagnetic survey of the parts of the landfill within the Great Swamp National Wildlife Refuge, 1989, by K. S. Turner, M. A. Hardy and R. J. Tapper. Prepared on behalf of the U.S. Fish and Wildlife Service. 1993. 38 p. (NC, Da, M, Wb; USGS, WRD, Mountain View Office Park, 810 Bear Tavern Rd., Suite 206, West Trenton, NJ 08628.)

OF 92-0154. IOWA. Summary of water-resources activities of the U.S. Geological Survey in Iowa, fiscal year 1992, compiled by R. A. Karsten. 1992. 108 p. (NC, Da, M, Wb; USGS, WRD, 400 South Clinton St., Iowa City, IA 52244; Federal Bldg., Room 250, 8 South 6th St., Council Bluffs, IA 51502; and Federal Bldg., Room 456, 205 South 8th St., Fort Dodge, IA 50501.)

OF 92-0156. IDAHO. Chemical constituents in water from wells in the vicinity of the Naval Reactors Facility, Idaho National Engineering Laboratory, Idaho, 1989-90, by L. L. Knobel, R. C. Bartholomay, S. J. Wegner and D. D. Edwards. Prepared in cooperation with the U.S. Department of Energy. 1992. 38 p. (NC, Da, M, Wb; USGS, WRD, 230 Collins Rd., Boise, ID 83702; and Idaho National Engineering Laboratory, CF-690, Room 164, Idaho Falls, ID 83403.)

OF 92-0157. MICHIGAN. Water resources activities in Michigan, 1991, compiled by R. M. Corey. Prepared in cooperation with State and Federal agencies. 1992. 82 p. (NC, Da, M, Wb; USGS, WRD, 6520 Mercantile Way, Suite 5, Lansing, MI 48911.)

OF 92-0160. TEXAS. Summary of hydrologic data for the San Gabriel River basin and Edwards Aquifer, Georgetown area, Texas, water year 1990, by W. E. Reeves and L. F. Land. Prepared in cooperation with the City of Georgetown. 1992. 1 over-size sheet. (NC, Da, M, Wb; USGS, WRD, 8011 Cameron Rd., Austin, TX 78753.)

OF 92-0161. Water Resources Research Grant Program project descriptions, fiscal year 1991, compiled by Melvin Lew and P. D. Murray. 1992. 163 p. (NC, Da, M, Wb.)

OF 92-0163. Summary of the U.S. Geological Survey National Field Quality Assurance Program from 1979 through 1989, by D. L. Stanley, W. J. Shamine and L. J. Schroder. 1992. 14 p. (NC, Da, M, Wb; USGS, WRD, Suite 3015, 227 North Bronough St., Tallahassee, Fl 32301; Suite 107, 9100 NW 36 St., Miami, FL 33178; Suite 1006, 224 West Central Pkwy., Altamonte Springs, FL 32714; and Suite B-5, 4710 Eisenhower Blvd., Tampa, FL 33634.)

OF 92-0165. PENNSYLVANIA. Evaluation of nutrient quality-assurance data for Alexanders and Mount Rock Spring basins, Cumberland County, Pennsylvania, by E. C. Witt, III, D. J. Hippe and R. M. Giovannitti. Prepared in cooperation with the Pennsylvania Department of Environmental Resources, Bureau of Water-Quality Management. 1992. 31 p. (NC, Da, M, Wb; USGS, WRD, 840 Market St., Lemoyne, PA 17043.)

OF 92-0166. TENNESSEE. Construction, lithologic, and hydrologic data for test wells in the Cedar Grove area, Carroll County, Tennessee, by S. E. Johnson and J. K. Carmichael. Prepared in cooperation with the Cedar Grove Utility District. 1993. 14 p. (NC, Da, M, Wb; USGS, WRD, 810 Broadway, Suite 500, Nashville, TN 37203.)

OF 92-0167. IOWA. Management Systems Evaluation Area; Iowa, Walnut Creek watershed, by P. J. Soenksen, J. L. Hatfield and J. L. Baker. 1992. 2 p. (NC, Da, M, Wb, A, S, U.) (Water fact sheet.)

OF 92-0168. MARYLAND. Acid rain and its effect on streamwater quality on Catoctin Mountain, Maryland, by K. C. Rice and O. P. Bricker. 1992. 2 p. (NC, Da, M, Wb, A, S, U.) (Water fact sheet.)

OF 92-0173. UTAH, IDAHO. Selected hydrologic data for Cache Valley, Utah and Idaho, 1969-91, by D. M. Roark and K. M. Hanson. Prepared in cooperation with the Utah Department of Natural Resources. 1992. 65 p., 1 over-size sheet. (NC, Da, M, Wb, U.)

OF 92-0174. IDAHO. Purgeable organic compounds in ground water at the Idaho National Engineering Laboratory, Idaho; 1990 and 1991, by M. J. Liszewski and L. J. Mann. Prepared in cooperation with the U.S. Department of Energy. 1992. 19 p. (NC, Da, M, Wb; USGS, WRD, 230 Collins Rd., Boise, ID 83702; and Idaho National Engineering Laboratory, CF-690, Room 164, Idaho Falls, ID 83403.)

OF 92-0175. IDAHO. Compilation of selected data for thermal-water wells and springs in Idaho, 1921 through 1991, by D. J.

Parliman and H. W. Young. 1992. 201 p. (NC, Da, M, Wb; USGS, WRD, 230 Collins Rd., Boise, ID 83702.)

OF 92-0198. ARIZONA. Preliminary geologic map of the Mohon Mountains volcanic field, Mohave and Yavapai counties, Arizona, by A. M. Simmons and A. W. Ward. 1992. 2 over-size sheets, scale 1:50,000 (1 inch = about 4,200 feet). (NC, Da, M, U; Arizona Bur. of Geol. and Mineral Technol., 845 North Park Ave., Tucson, AZ 85719.)

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OF 92-0210-A. CALIFORNIA. Analytical results and sample locality map of rock samples from the Hayfork 30′ × 1° Quadrangle (northwest quarter of the Redding 1° × 2° Quadrangle), Humboldt and Trinity counties, California, by J. R. Hassemer, M. L. Silberman and R. T. Hopkins. 1992. 74 p., 1 over-size sheet, scale 1:100,000 (1 inch = about 1.6 miles). (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 92-0210-B. CALIFORNIA. Analytical results and sample locality map of rock samples from the Hayfork 30′ × 1° Quadrangle (northwest quarter of the Redding 1° × 2° Quadrangle), Humboldt and Trinity counties, California, by J. R. Hassemer, M. L. Silberman and R. T. Hopkins. 1992. One 5 1/4 inch diskette. (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

This report contains digital geochemical data and text documentation on a 5 1/4 inch, 360K distribution diskette. The text and data files are in standard ASCII format. Requirements: an IBM PC or compatible computer using PC/MS DOS, and a floppy disk drive capable of reading a 5 1/4 inch, 360K diskette.

OF 92-0262. Palynomorph census data from Pliocene strata of the U.S. Atlantic Coastal Plain (Massachusetts to Central Florida), by R. J. Litwin and V. A. Andrle. 1992. 25 p. (NC, Da, Wa; South Carolina Geol. Surv., 5 Geology Rd., Columbia, SC 29210-9998; Div. of Land Resources, Dep. of Environment, Health, and Natural Resources, P.O. Box 27687, Raleigh, NC 27611; Virginia Div. of Mineral Resources, Natural Resources Bldg., Alderman and McCormick Rds., P.O. Box 3667, Charlottesville, VA 22903; Georgia Geol. Surv., 19 Martin Luther King Jr. Dr. SW, Room 400, Atlanta, GA 30334.)

OF 92-0263. Modern palynomorph and weather census data from the U.S. Atlantic coast (Continental Margin Program samples and selected NOAA weather stations), by R. J. Litwin and V. A. Andrle. 1992. 31 p. (NC, Da, Wa; Connecticut Geol. and Natural History Surv., 165 Capitol Ave., Room 553, Hartford, CT 06106; Georgia Geol. Surv., 19 Martin Luther King Jr. Dr. SW, Room 400, Atlanta, GA 30334; Div. of Land Resources, Dep. of Environment, Health, and National Resources, P.O. Box 27687, Raleigh, NC 27611; New York State Geol. Surv., 3136 Cultural Education Ctr., Empire State Plaza, Albany, NY 12230; South Carolina Geol. Surv., 5 Geology Rd., Columbia, SC 29210-9998; Virginia Div. of Mineral Resources, Natural Resources Bldg., Alderman and McCormick Rds., P.O. Box 3667, Charlottesville, VA 22903.)

OF 92-0268. SOUTH CAROLINA. Geochemical data for 85 heavy-mineral concentrates from selected areas in Greenville and Laurens counties, South Carolina, by semi-quantitative emission spectrography, by J. C. Jackson, B. M. Adrian and R. T. Hopkins. 1992. 11 p. (NC, Da, M; South Carolina. Surv., 5 Geology Rd., Columbia, SC 29210-9998.)

OF 92-0281. Measured sections from the the Bara, Lakhra, and Laki formations in Sindh, Pakistan; a progress report, by Christopher Wnuk, J. R. SanFilipo, Mohammad Fariduddin, S. F. Fatmi, S. A. Khan and A. H. Chandio. 1992. 89 p. (NC, Da, M.)

OF 92-0282-A. VERMONT. Preliminary bedrock geologic map of the Mount Holly Quadrangle and portions of the Ludlow Quadrangle, Rutland and Windsor counties, Vermont, by N. M. Ratcliffe. Prepared in cooperation with the State of Vermont. 1992. 16 p., 2 over-size sheets, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da.)

OF 92-0315. ALASKA. Analytical results, sample locality map, and descriptions of rock samples from the Bethel and southern part of the Russian Mission 1° × 3° quadrangles, Southwest Alaska, by T. P. Frost, L. A. Bradley, R. M. O'Leary and J. M. Motooka. 1992. 229 p., 1 over-size sheet, scale 1:250,000 (1 inch = about 4 miles). (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 92-0316-A. CALIFORNIA. Analytical results and sample locality map of rock samples from the Garberville 30′ × 1° Quadrangle (southwest quarter of the Redding 1° × 2° Quadrangle), Humboldt, Trinity, Shasta, Tehama, and Mendocino counties, California, by J. R. Hassemer, M. L. Silberman and R. T. Hopkins. 1992. 67 p., 1 over-size sheet, scale 1:100,000 (1 inch = about 1.6 miles). (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 92-0316-B. CALIFORNIA. Analytical results and sample locality map of rock samples from the Garberville 30′ × 1° Quadrangle (southwest quarter of the Redding 1° × 2° Quadrangle), Humboldt, Trinity, Shasta, Tehama, and Mendocino counties, California, by J. R. Hassemer, M. L. Silberman and R. T. Hopkins. 1992. One 5 1/4 inch diskette. (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

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OF 92-0340. NEVADA, CALIFORNIA. Seismicity and focal mechanisms for the southern Great Basin of Nevada and California in 1991, by S. C. Harmsen. 1992. 100 p. (NC, Da, M, U; Cali-

fornia Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 185 Berry St., Suite 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088.)

OF 92-0343. NEVADA. Gravity and magnetic data of Fortymile Wash, Nevada Test Site, Nevada, by D. A. Ponce, S. B. Kohrn and Sandra Waddell. 1993. 33 p. (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada, Reno, NV 89557-0088.)

OF 92-0345. The preparation of plant material and determination of weight percent ash, by T. R. Peacock. 1992. 9 p. (NC, Da, M.)

OF 92-0346. ALASKA. Geologic map of the lower Beluga-Chuitna area, Tyonek A-3 and A-4 quadrangles, south-central Alaska, by H. R. Schmoll and L. A. Yehle. 1992. 27 p. (NC, Da, M, A, S; Alaska Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645; U.S. Dep. of Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513.)

OF 92-0369-A. NPBAS; a BASIC program for nonparametric comparisons of two or more independent groups of data, by M. L. Millgate. 1992. 40 p. (NC, Da, M.)

OF 92-0369-B. NPBAS; a BASIC program for nonparametric comparisons of two or more independent groups of data, by M. L. Millgate. 1992. One 5 1/4 inch DS/DD diskette. (NC, Da, M.)

The program is designed to run on IBM and compatible personal computers (640K available memory). The report is contained on a 5 1/4 inch, 360K floppy diskette.

OF 92-0377-A. U.S. Geological Survey 1:2,000,000-scale map of shoreline erosion and accretion of the Mid-Atlantic coast, by Robert Dolan and Judith Peatross. 1992. 1 over-size sheet (30 inches × 30 inches), scale 1:2,000,000 (1 inch = about 32 miles). (M, Da, NC.)

OF 92-0377-B. U.S. Geological Survey 1:2,000,000-scale map of shoreline erosion and accretion of the Mid-Atlantic coast; data supplement, by Robert Dolan and Judith Peatross. 1992. 114 p. (M, Da, NC.)

OF 92-0379-A. ALASKA. Analytical results of stream-sediment samples from the Bethel and southern part of the Russian Mission 1° × 3° quadrangles, Southwest Alaska, by T. P. Frost, E. A. Bailey, L. A. Bradley, R. M. O'Leary and J. M. Motooka. 1992. 119 p. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 92-0379-B. ALASKA. Analytical results of stream-sediment samples from the Bethel and southern part of the Russian Mission 1° × 3° quadrangles, Southwest Alaska, by T. P. Frost, E. A. Bailey, L. A. Bradley and R. M. O'Leary. 1992. One 3 1/2 inch diskette. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

Requirements: IBM 286, 386, or 486 PC or compatible; floppy disk drive able to read 3 1/2 inch 1.44MB diskette; PC or MS DOS operating system or Macintosh II series computer equipped with a 20MB (minimum) hard drive, operating system 6.03 or greater, and a Macintosh Superdrive (1.44MB floppy disk drive). For use of data in .WK1 format, any data manipulation program that can read .WK1 files.

OF 92-0380-A. ALASKA. Analytical results of non-magnetic heavy-mineral-concentrate sample data from the Bethel and southern part of the Russian Mission 1° × 3° quadrangles, Southwest Alaska, by T. P. Frost, E. A. Bailey, L. A. Bradley, R. M. O'Leary and J. M. Motooka. 1992. 98 p. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 92-0380-B. ALASKA. Analytical results of non-magnetic heavy-mineral-concentrate sample data from the Bethel and southern part of the Russian Mission 1° × 3° quadrangles, Southwest Alaska, by T. P. Frost, E. A. Bailey, L. A. Bradley, R. M. O'Leary and J. M. Motooka. 1992. One 3 1/2 inch diskette. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska, Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

Requirements: IBM 286, 386, or 486 PC or compatible, floppy disk drive able to read 3 1/2 inch 1.44MB diskette, PC or MS DOS operating system; or Macintosh II series computer equipped with a 20MB (minimum) hard drive, operating system 6.03 or greater, and a Macintosh Superdrive (1.44MB floppy disk drive). For use of data in .WK1 format, any data manipulation program that can read .WK1 files.

OF 92-0381. Well log evaluation of natural gas hydrates, by T. S. Collett. 1992. 28 p. (NC, Da, M.)

OF 92-0382. Current patterns over the shelf and slope adjacent to the Gulf of the Farallones; executive summary, by M. A. Noble, S. R. Ramp and K. L. Kinoshita. 1992. 26 p. (NC, Da, M.)

OF 92-0383. CALIFORNIA. Abundances of major elements and sedimentary components in cuttings from the Repetto, Sisquoc, and Monterey formations, OCS P-0188 H-1 and H-2 wells, Hondo oil field, offshore Santa Barbara-Ventura Basin, Southern California, by C. M. Isaacs, J. H. Tomson, K. C. Stewart and L. L. Jackson. 1992. 46 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 92-0384. IDAHO. Analytical results and sample locality map of stream-sediment and heavy-mineral-concentrate samples from the Mallard-Larkins Wilderness–Proposed, Clearwater and St. Joe national forests, Clearwater and Shoshone counties, Idaho, by H. N. Barton, R. T. Hopkins, B. H. Roushey and P. H. Briggs. 1992. 30 p., one 5 1/4 inch diskette, 1 over-size sheet, scale 1:125,000 (1 inch = about 2 miles). (NC, Da, M, U, S; Idaho Geol. Surv., Univ. of Idaho Campus, Morrill Hall, Room 332, Moscow, ID 83843.)

One 5 1/4 inch DS/DD IBM compatible diskette. MS-DOS 2.0 or greater, coprocessor required for the conversion program (included on the diskette).

OF 92-0385. UTAH. Preliminary geologic map of the Stockton 7 1/2-minute Quadrangle, Tooele County, Utah, by E. W. Tooker and R. J. Roberts. 1992. 22 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Utah Geol. Surv., 2363 Foothill Dr., Salt Lake City, UT 84109-1491.)

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Requirements: MS-DOS, high density, ASCII format.

OF 92-0388. WYOMING. Joint-history summary and orientation data for Upper Cretaceous sandstones, Rawlings and Rock Springs uplifts, Washakie Basin, southern Wyoming, by M. A. Grout and E. R. Verbeek. 1992. 30 p. (NC, Da, M, U; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071.)

OF 92-0389. Composite geophysical model for continental volcanic-hosted epithermal mineralization; Cox and Singer mineral deposit models numbered 25b, 25c, 25d, and 25e, by D. P. Klein and Viki Bankey. 1992. 15 p. (NC, Da, M.)

OF 92-0390-A. Bibliography of well-log application; cumulative edition, to September 30, 1992, by S. E. Prensky. 1992. Three 3 1/2 inch diskettes. (NC, Da, M.)

Macintosh version consisting of three text files on three 3 1/2 inch 1.44MB disks. Formatted in Microsoft Word, version 5.0.

OF 92-0390-B. Bibliography of well-log application; cumulative edition, to September 30, 1992, by S. E. Prensky. 1992. Three 3 1/2 inch diskettes. (NC, Da, M.)

IBM-PC, or compatible, version, consisting of three text files on three 3 1/2 inch 1.44MB disks. Formatted in WordPerfect, version 5.1.

OF 92-0391. Abstracts of the U.S. Geological Survey, central region, 1992 poster review, compiled by C. E. Barker and A. B. Coury. 1992. 35 p. (NC, Da, M.)

Geoscience imagery hazards; identification and application of preservation techniques by U.S. Geological Survey field records and photographic libraries, by C. G. MacDonald, J. K. McGregor, C. A. Edwards and I. L. Hopkins. p. 1.

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OF 92-0565. YoNav; your own integrated navigation system for DOS platforms, by J. T. Gann. 1992. 62 p., two 3 1/2 inch DS/HD IBM compatible diskettes. (NC, Da, M.)

Requirements: IBM AT or compatible microcomputer, VGA graphics board capable of 640 × 480 graphics resolution, at least one serial port and at least 2MB extended or expanded memory.

OF 92-0566. Maps showing the distribution of juvenile cod in relation to the sedimentary environment of eastern Georges Bank, by R. G. Lough, P. C. Valentine, C. L. Brown and W. L. Michaels. 1992. 1 over-size sheet. (NC, Da, M; USGS, Gosnold Laboratory, Quissett Campus, Woods Hole Rd., Woods Hole, MA 02543, telephone 508-457-2239.)

OF 92-0567. PUERTO RICO. Mineral resource assessment of Puerto Rico; field trip, June 25, 1992, edited by J. N. Weaver; and led by R. A. Harris, J. H. Schellekens, G. E. McKelvey and D. P. Cox. 1992. 43 p. (NC, Da, M; Serv. Geol. de Puerto Rico, Dep. de Recursos Naturales, Apartado 5887, Puerta de Tierra, San Juan, PR 00906.)

OF 92-0568. PENNSYLVANIA. Field trip guidebook; the anthracite basins of eastern Pennsylvania, by J. R. Levine and J. R. Eggleston. 1992. 72 p. (NC, Da, M.)

Regional physiography and geology, by J. R. Levine. p. 1-3.

Stratigraphy and depositional environments, by J. R. Eggleston. p. 4-8.

Structural geology and tectonics, by J. R. Eggleston, J. R. Levine and E. J. Daniels. p. 9-12.

Mineralogy of coal and shale in the anthracite region, by E. J. Daniels. p. 13-18.

Coalification, diagenesis, and burial/thermal history of the anthracite region, by J. R. Levine. p. 19-27.

Reflectance anisotropy of coals from the anthracite region, by J. R. Levine. p. 28-32.

Paleobotany, by Christopher Wnuk. p. 33-34.

Economic geology, by J. R. Eggleston. p. 34-38.

Mining and labor history, by D. C. Glick. p. 39-41.

Cultural and physical geography of the field trip route, by D. C. Glick and J. R. Levine. p. 42-47.

OF 92-0569. Data acquisition system for magnetotellurics, by T. P. Grover. 1992. 29 p. (NC, Da, M.)

OF 92-0570. CALIFORNIA. Data report for 1991 active-source seismic profiles in the San Francisco Bay area, California, by J. M. Murphy, R. D. Catchings, W. M. Kohler, G. S. Fuis and Donna Eberhart-Phillips. 1992. 45 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 92-0571. CALIFORNIA. Rock-Eval pyrolysis and vitrinite reflectance results from outcrop samples of the Rincon Shale (lower Miocene) collected at the Tajiguas Landfill, Santa Barbara County, California, by R. G. Stanley, Z. C. Valin and M. J. Pawlewicz. 1992. 27 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 92-0572. NEVADA. Assessment of geophysical logs from borehole USW G-2, Yucca Mountain, Nevada, by P. H. Nelson and Ulrich Schimschal. Prepared in cooperation with the U.S. Department of Energy. 1993. 34 p. (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088.)

OF 92-0573-A. ALASKA. Magnetic media file of analytical results and geochemical signatures of lode gold, placer gold, and heavy-mineral concentrates from mining districts in central, western, and northern Alaska, by J. B. Cathrall, George VanTrump, J. C. Antweiler and E. L. Mosier. 1992. 17 p. (NC, Da, M, A, S; Alaska Div. of Geol. and Geophys. Surv., P.O. Box 7028, Anchorage, AK 99510; U.S. Dep. of Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513.)

OF 92-0573-B. ALASKA. Magnetic media file of analytical results and geochemical signatures of lode gold, placer gold, and heavy-mineral concentrates from mining districts in central, western, and northern Alaska, by J. B. Cathrall, George VanTrump, J. C. Antweiler and E. L. Mosier. 1992. One 5 1/4 inch diskette. (NC, Da, M, A, S; Alaska Div. of Geol. and Geophys. Surv., P.O. Box 7028, Anchorage, AK 99510; U.S. Dep. of Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513.)

The magnetic media is a double density (360K), 5 1/4 inch floppy disk with the data written in an ASCII format for use with an IBM PC or compatible personal computer.

OF 92-0575. CALIFORNIA. The Cape Mendocino earthquakes of April 25 and 26, 1992, by B. G. Reagor and L. R. Brewer. 1992. 27 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 92-0576. Potential for the occurrence of thick lignite deposits in the Thar Desert and adjacent lower Indus Plain, Sindh Province, Pakistan, by J. R. SanFilipo, Christopher Wnuk, Mohammad Fariduddin, Mujeeb Ahmad, S. A. Khan, Mehtab-ur-Rahman, A. H. Chandio and R. A. Khan. Prepared jointly by the Geological Survey of Pakistan and the U.S. Geological Survey under the auspices of the U.S. Agency for International Development. 1992. 131 p. (NC.)

OF 92-0577. CALIFORNIA. LEAP; local earthquake analysis program on VAX-VMS for Southern California Seismic Network data, by L. A. Wald and L. M. Jones. 1992. 49 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 92-0578. PUERTO RICO. Copper resources in secondary enrichment blankets at Tanamá, Puerto Rico, by D. P. Cox. 1992. 5 p., 2 over-size sheets. (NC, Da, M.)

OF 92-0579-A. Bibliography of well-log applications annual update; October 1, 1991 to September 30, 1992, by S. E. Prensky. 1992. 122 p. (NC, Da, M.)

OF 92-0579-B. Bibliography of well-log applications annual update; October 1, 1991 to September 30, 1992, by S. E. Prensky. 1992. One 3 1/2 inch diskette. (NC, Da, M.)

Macintosh version consisting of one text file on one 3 1/2 inch 800K disk. Formatted in Microsoft Word, version 5.0.

OF 92-0579-C. Bibliography of well-log applications annual update; October 1, 1991 to September 30, 1992, by S. E. Prensky. 1992. One 3 1/2 inch diskette. (NC, Da, M.)

IBM-PC, or compatible, version, consisting of one 3 1/2 inch 1.44MB disk. Formatted in WordPerfect, version 5.1.

OF 92-0580. NEVADA. Preliminary geologic map of the Mount Ichabod area, Elko County, Nevada, by K. B. Ketner, B. L. Murchey, R. G. Stamm and B. R. Wardlaw. 1992. 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088.)

OF 92-0581. WASHINGTON. Stratigraphy and sedimentology of the Raging River Formation (early? and middle Eocene), King County, Washington, by S. Y. Johnson. 1992. 38 p. (NC, Da, M, S; Geol. and Earth Resources Div., Dep. of Natural Resources, Olympia, WA 98504; David A. Johnston Cascade Volcano Observatory, 5400 MacArthur Blvd., Vancouver, WA 98661.)

OF 92-0582. ALASKA. Analytical results in digital format of rock samples from the Bethel and part of the Russian Mission 1° by 3° quadrangles, Alaska, by T. P. Frost. 1992. 6 p. One 3 1/2 inch DS/HD IBM compatible diskette. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Div. Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

Requirements: IBM 286, 386, or 486 PC or compatible; minimum 20MB hard disk; floppy disk drive able to read 3 1/2 inch 1.44MB diskette; PC or MS DOS operating system. For use of data in STATPAC format, USGS STATPAC programs (Van Trump and Miesch, 1977, Computers and Geosciences, v. 3, p. 475-488); for use in .WK1 format, any data manipulation program that can read .WK1 files.

OF 92-0583. Significant earthquakes of the world, 1990, compiled by W. J. Person and J. M. Jacobs. 1992. 9 p. (NC, Da, M.)

OF 92-0584. Significant earthquakes of the world, 1991, compiled by W. J. Person and J. M. Jacobs. 1992. 9 p. (NC, Da, M.)

OF 92-0585. Publications of the U.S. Geological Survey Branch of Atlantic Marine Geology; calendar year 1991, by M. C. Mons-Wengler and R. N. Oldale. 1992. 19 p. (NC, Da, M.)

OF 92-0586. HAWAII. Core lithology, State of Hawaii Scientific Observation Hole 4, Kilauea Volcano, Hawaii, by F. A. Trusdell, Elizabeth Novak and S. R. Evans. 1992. 72 p. (NC, Da, M.)

OF 92-0588. CALIFORNIA. Contact relations of the Ione and Valley Springs formations in the east-central Great Valley, California, by A. J. Bartow. 1992. 13 p., 1 over-size sheet. (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 92-0589. UTAH. Preliminary report and map of the geology of Smithsonian Butte Quadrangle, Washington County, Utah, by D. W. Moore and E. G. Sable. 1992. 17 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Utah Geol. Surv., 2363 Foothill Dr., Salt Lake City, UT 84109-1403.)

OF 92-0590. DUMPSEGY v1.0; a program to examine the contents of SEG-Y disk-image seismic data, by F. N. Zihlman. 1992. 30 p. 30 pgs., two 5 1/4 inch diskettes. (NC, Da, M.)

DUMPSEGY is an interactive, character-based program allowing the user to "dump" a SEG-Y format seismic data file to the

screen or an ASCII disk file. The user may use DUMPSEGY to display the EBCDIC header, binary header, individual trace headers, the SEG-Y format samples of individual traces, or those sample values converted to floating point values. DUMPSEGY will also allow the user to create SEG-Y format data files which are subsets of the original SEG-Y data file. Examples of creating SEG-Y data files are given in the documentation. DUMPSEGY is written in ANSI C and capable of being compiled on either DOS or UNIX systems supporting ANSI C. DOS environment system requirements: Intel 80286 or higher processor, DOS 3.0 or later, a hard disk drive or CD-ROM containing the input file(s), and a math coprocessor is NOT required, but will be used if available and is strongly recommended.

OF 92-0591-A. ARIZONA. Stream-sediment and panned-concentrate geochemical surveys for gold in Precambrian rock, western Grand Canyon, Arizona, by K. J. Wenrich, B. S. Van Gosen, G. H. Billingsley and J. C. Antweiler. Prepared in cooperation with the Hualapai Tribe and the U.S. Bureau of Indian Affairs. 1992. 50 p. (NC, Da, M, U; Arizona Bur. of Geol. and Mineral Technol., 845 North Park Ave., Tucson, AZ 85719.)

OF 92-0591-B. ARIZONA. Stream-sediment and panned-concentrate geochemical surveys for gold in Precambrian rock, western Grand Canyon, Arizona, by K. J. Wenrich, B. S. Van Gosen, G. H. Billingsley and J. C. Antweiler. Prepared in cooperation with the Hualapai Tribe and the U.S. Bureau of Indian Affairs. 1992. 50 p. One 5 1/4 inch diskette. (NC, Da, M, U; Arizona Bur. of Geol. and Mineral Technol., 845 North Park Ave., Tucson, AZ 85719.)

Requirements: IBM PC or compatible, WordPerfect 5.0 or higher, dBase III plus or program to read ASCII files.

OF 92-0592. SOUTH DAKOTA, NEBRASKA. A reconnaissance study of radon levels in soils developed on the Upper Cretaceous Pierre Shale just above the Sharon Springs Member in the Missouri River valley in southeastern South Dakota and northeastern Nebraska, by K. A. Dickinson. 1992. 11 p. (NC, Da, M; Dep. of Water and Natural Resources, South Dakota Geol. Surv., Sci. Ctr., Univ. of South Dakota, Vermillion, SD 57069; Conservation and Surv. Div., Inst. of Agriculture and Natural Resources, 113 Nebraska Hall, Univ. of Nebraska, Lincoln, NE 68588-0517.)

OF 92-0593. Industrial mineral deposit models; descriptive models for three lacustrine deposit types, by G. J. Orris. 1992. 14 p. (NC, Da, M.)

OF 92-0594. ALASKA. Preliminary geologic map of the Mount Hayes Quadrangle, eastern Alaska Range, Alaska, by W. J. Nokleberg, J. N. Aleinikoff, I. M. Lange, S. R. Silva, R. T. Miyaoka, C. E. Schwab, and R. E. Zehner; with contributions for selected areas from G. C. Bond, D. H. Richter, T. E. Smith, and J. H. Stout. 1992. 39 p., 1 over-size sheet, scale 1:250,000 (1 inch = about 4 miles). (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 92-0595. CALIFORNIA. Evaluation of selected metallic and nonmetallic mineral resources, West Mojave Management Area, Southern California. 1992. 89 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 92-0596. ALASKA. Bibliography of research and exploration in the Glacier Bay region, Southeastern Alaska, 1798-1992, compiled by D. L. Howe, G. P. Streveler and D. A. Brew. 1992. 70 p. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave. Suite 200, Fairbanks, AK 99709-3645.)

OF 92-0597. Descriptions of seismic array components; Part 2, Software modules for data acquisition/processing, by W. H. Lee. 1993. 316 p., one 3 1/2 inch diskette. (NC, Da, M.)

Requirements: IBM 386 or 486 PC or compatible; minimum 1MB RAM; math coprocessor; VGA graphics board and monitor; minimum 40MB hard disk; 3 1/2 inch floppy disk drive; PC or MS DOS 4.01 or later; Microsoft C, Macro Assembler, and Fortran Compilers; and plotting library modules by Small Systems Support and Symmetric Research.

OF 92-0598. Descriptions of seismic array components; Part 3, Software modules for data conversion, by W. H. Lee. 1992. 111 p., one 3 1/2 inch diskette. (NC, Da, M.)

Requirements IBM 386 or 486 PC or compatible; minimum 1MB RAM; math coprocessor, VGA graphics board and monitor; minimum 40MB hard disk; 3 1/2 inch floppy disk drive; PC or MS DOS 4.01 or later; and Microsoft C Compiler.

OF 92-0599. ARIZONA. Tabulation of N_2, O_2, CO_2, and He concentrations in soil gases collected on a regular basis for 11 months from a site at Tucson, Arizona, by M. E. Hinkle and T. F. Harms. 1992. 16 p. (NC, Da, M, U; Bur. of Geol. and Mineral Technol., 845 North Park Ave., Tucson, AZ 85719.)

OF 92-0600-A. Preliminary determination of epicenters; monthly listing January-March 1992, by National Earthquake Information Center. 1992. 96 p. (NC, Da, M.)

OF 92-0600-B. Preliminary determination of epicenters; monthly listing April-June 1992, by National Earthquake Information Center. 1992. 143 p. (NC, Da, M.)

OF 92-0600-C. Preliminary determination of epicenters; monthly listing July-September 1992, by National Earthquake Information Center. 1992. 116 p. (NC, Da, M.)

OF 92-0600-D. Preliminary determination of epicenters; monthly listing October-December 1992, by National Earthquake Information Center. 1992. 104 p. (NC, Da, M.)

OF 92-0601-A. Earthquake data report, January 1992, by National Earthquake Information Center. 1992. 340 p. (NC, Da, M.)

OF 92-0601-B. Earthquake data report, January 1992, by National Earthquake Information Center. 1992. Three 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher.

OF 92-0602-A. Earthquake data report, February 1992, by National Earthquake Information Center. 1992. 296 p. (NC, Da, M.)

OF 92-0602-B. Earthquake data report, February 1992, by National Earthquake Information Center. 1992. Three 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher.

OF 92-0603-A. Earthquake data report, March 1992, by National Earthquake Information Center. 1992. 408 p. (NC, Da, M.)

OF 92-0603-B. Earthquake data report, March 1992, by National Earthquake Information Center. 1992. Four 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher.

OF 92-0604-A. Earthquake data report, April 1992, by National Earthquake Information Center. 1992. 403 p. (NC, Da, M.)

OF 92-0604-B. Earthquake data report, April 1992, by National Earthquake Information Center. 1992. Four 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher.

OF 92-0605-A. Earthquake data report, May 1992, by National Earthquake Information Center. 1992. 437 p. (NC, Da, M.)

OF 92-0605-B. Earthquake data report, May 1992, by National Earthquake Information Center. 1992. Five 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher.

OF 92-0606-A. Earthquake data report, June 1992, by National Earthquake Information Center. 1992. 425 p. (NC, Da, M.)

OF 92-0606-B. Earthquake data report, June 1992, by National Earthquake Information Center. 1992. Five 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher.

OF 92-0607-A. Earthquake data report, July 1992, by National Earthquake Information Center. 1992. 250 p. (NC, Da, M.)

OF 92-0607-B. Earthquake data report, July 1992, by National Earthquake Information Center. 1992. Five 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher. All files are ASCII and the documentation is given in file AAREADME.DAT on the first disk.

OF 92-0608-A. Earthquake data report, August 1992, by National Earthquake Information Center. 1992. 458 p. (NC, Da, M.)

OF 92-0608-B. Earthquake data report, August 1992, by National Earthquake Information Center. 1992. Five 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher. All files are ASCII and the documentation is given in file AAREADME.DAT on the first disk.

OF 92-0609-A. Earthquake data report, September 1992, by National Earthquake Information Center. 1992. 437 p. (NC, Da, M.)

OF 92-0609-B. Earthquake data report, September 1992, by National Earthquake Information Center. 1992. Five 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher. All files are ASCII and the documentation is given in file AAREADME.DAT on the first disk.

OF 92-0610-A. Earthquake data report, October 1992, by National Earthquake Information Center. 1992. 455 p. (NC, Da, M.)

OF 92-0610-B. Earthquake data report, October 1992, by National Earthquake Information Center. 1992. Five 5 1/4 inch diskettes (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher. All files are ASCII and the documentation is given in file AAREADME.DAT on the first disk.

OF 92-0611-A. Earthquake data report, November 1992, by National Earthquake Information Center. 1992. 420 p. (NC, Da, M.)

OF 92-0611-B. Earthquake data report, November 1992, by National Earthquake Information Center. 1992. Four 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher. All files are ASCII and the documentation is given in file AAREADME.DAT on the first disk.

OF 92-0612-A. Earthquake data report, December 1992, by National Earthquake Information Center. 1992. 425 p. (NC, Da, M.)

OF 92-0612-B. Earthquake data report, December 1992, by National Earthquake Information Center. 1992. Five 5 1/4 inch diskettes. (NC, Da, M.)

The EDR data are written on 1.2MB high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher. All files are ASCII and the documentation is given in file AAREADME.DAT on the first disk.

OF 92-0613. NEVADA. Preliminary geologic map of the Pahroc Summit Pass Quadrangle and part of the Hiko SE Quadrangle, Lincoln County, Nevada, by R. B. Scott and W C Swadley. 1992. 13 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet).

(NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088.)

OF 92-0614. COLORADO. Ion exchange capture of copper, lead, and zinc in acid-rock drainages of Colorado using natural clinoptilolite; preliminary field studies, by G. A. Desborough. 1992. 16 p. (NC, Da, M, U; John W. Rold, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

OF 92-0615. MINNESOTA. Gold and spectrographic analyses of 110 outcrop and 238 B-horizon soil samples from the western Vermilion District, northeastern Minnesota, by J. B. McHugh, R. T. Hopkins, H. V. Alminas and G. T. Hill. 1992. 38 p. 38 pgs., one 5 1/4 inch diskette. (NC, Da, M; Minnesota Geol. Surv., 2642 University Ave., St. Paul, MN 55114-1057.)

This report contains digital geochemical data and text documentation on a 5 1/4 inch, 1.2MB distribution diskette. The data files on diskette are in USGS STATPAC (.STP) format. A data format conversion program, STP2DAT.EXE has been included on the diskette to provide eight additional formats into which the >STP files can be changed. The text files are in standard ASCII format.

OF 92-0626. MISSOURI. Water-resources activities of the U.S. Geological Survey in Missouri, 1991-92, compiled by K. L. Jenkins-Bartle. 1992. 78 p. (NC, Da, M, Wb.)

OF 92-0627. CALIFORNIA, NEVADA, COLORADO. Hydrologic and climatic data bases used to assess potential effects of climate change on water resources of American River, Carson River, and Truckee River basins, California-Nevada, and of Gunnison River basin, Colorado, by M. H. August, J. M. Jacoboni, A. E. Jeton, R. S. Parker, Alex Pupacko, B. C. Ruddy, J. L. Smith and K. T. Redmond. 1992. 72 p. (NC, Da, M, Wb, U; USGS, WRD, 333 West Nye Lane, Carson City, NV 89706; and 6770 South Paradise Rd., Las Vegas, NV 89119.)

OF 92-0628. COLORADO. Planning document of water, energy, and biogeochemical-budget (WEBB) research project, Loch Vale watershed, Rocky Mountain National Park, Colorado, by J. T. Turk, N. E. Spahr and D. H. Campbell. 1993. 18 p. (NC, Da, M, Wb; USGS, WRD, Room H-2101, Bldg. 53, Denver Federal Ctr., Lakewood, CO 80225.)

OF 92-0629. GEORGIA. Water-supply potential of major streams and the upper Floridan Aquifer in the vicinity of Savannah, Georgia, by Reggina Garza and R. E. Krause. Prepared in cooperation with the Chatham County-Savannah Metropolitan Planning Commission. 1992. 49 p., 19 over-size sheets. (NC, Da, M, Wb; USGS, WRD, 3039 Amwiler Rd., Suite 130, Peachtree Business Ctr., Atlanta, GA 30360-2824.)

OF 92-0632. Hydro-climatic data network (HCDN); a U.S. Geological Survey streamflow data set for the United States for the study of climate fluctuations, 1874-1988, by J. M. Landwehr and J. R. Slack. 1992. 2 p. (NC, Da, M, Wb, A, S, U.) (Water fact sheet.)

OF 92-0633. NEBRASKA. Water-resources activities of the U.S. Geological Survey in Nebraska, fiscal years 1990-91, compiled by D. J. Fitzpatrick and J. E. McKinney. 1992. 48 p. (NC, Da, M, Wb; USGS, WRD, 100 Centennial Mall North, 406 Federal Bldg., Lincoln, NE 68510; Hwy. 11 North, Ord, NE 68862; P.O. Box 787, 729 Main St., Bridgeport, NE 69336; and P.O. Box 426, 315 Nelson St., Cambridge, NE 69022.)

OF 92-0634. Methods of analysis by the U.S. Geological Survey National Water Quality Laboratory; determination of metals in water by inductively coupled plasma-mass spectrometry, by L. M. Faires. 1993. 28 p. (NC, Da, M, Wb.)

OF 92-0637. Study guide for a beginning course in ground-water hydrology; Part II, Instructor's guide, by O. L. Franke, T. E. Reilly, H. T. Buxton and D. L. Simmons. 1993. 128 p. (NC, Da, M, Wb.) (Part I, Course participants, issued as OF 90-183.)

OF 92-0638. KENTUCKY. Stormwater data for Jefferson County, Kentucky, 1991-92, by R. D. Evaldi and B. L. Moore. Prepared in cooperation with the Louisville and Jefferson County Metropolitan Sewer District. 1992. 82 p. (NC, Da, M, Wb; USGS, WRD, 2301 Bradley Ave., Louisville, KY 40217.)

OF 92-0639. NORTH CAROLINA. Simulation of unsteady flow in the Roanoke River from near Oak City to Williamston, North Carolina, by A. G. Strickland and J. D. Bales. Prepared in cooperation with the North Carolina Department of Environment, Health, and Natural Resources, and the U.S. Army Corps of Engineers. 1993. 49 p. (NC, Da, M, Wb; USGS, WRD, 3916 Sunset Ridge Rd., Raleigh, NC 27607.)

OF 92-0640. UTAH. Selected hydrologic data for Salt Lake Valley, Utah, 1990-92, with emphasis on data from the shallow unconfined aquifer and confining layers, by S. A. Thiros. Prepared in cooperation with the Utah Department of Natural Resources and the Utah Department of Environmental Quality. 1992. 60 p., 1 over-size sheet. (NC, Da, M, Wb, U.)

OF 92-0641. OKLAHOMA. Ground-water-quality assessment of the Central Oklahoma Aquifer, Oklahoma; hydrologic, water-quality, and quality assurance data 1987-90, by D. M. Ferree, S. C. Christenson, A. H. Rea and B. A. Mesander. 1992. 193 p. (NC, Da, M, Wb.)

OF 92-0643. IDAHO. Water-level data for selected wells on or near the Idaho National Engineering Laboratory, Idaho, 1983 through 1990, by D. S. Ott, D. D. Edwards and R. C. Bartholomay. Prepared in cooperation with the U.S. Department of Energy. 1992. 307 p. (NC, Da, M, Wb; USGS, WRD, 230 Collins Rd., Boise, ID 83702; and Idaho National Engineering Laboratory, CF-690, Room 164, Idaho Falls, ID 83403.)

OF 92-0644. WASHINGTON. Surface-water-quality assessment of the Yakima River basin, Washington; pesticide and other trace-organic-compound data for water, sediment, soil, and aquatic biota, 1987-91, by J. F. Rinella, S. W. McKenzie, J. K. Crawford, W. T. Foreman, P. M. Gates, G. J. Fuhrer and M. L. Janet. 1992. 154 p. (NC, Da, M, Wb.)

OF 92-0645. COLORADO. Initial findings of synoptic snowpack sampling in the Colorado Rocky Mountains, by J. T. Turk, D. H. Campbell, G. P. Ingersoll and D. A. Clow. Prepared in cooperation with the Colorado Department of Health, U.S. Forest Service, and U.S. Environmental Protection Agency. 1992. 6 p. (NC, Da, M, Wb.)

OF 92-0646. MASSACHUSETTS. Results of geophysical surveys at Hocomonco Pond, Westborough, Massachusetts, by B. P. Hansen. Prepared in cooperation with the U.S. Environmental Protection Agency, Water Management Division. 1993. 19 p.

(NC, Da, M, Wb; USGS, WRD, 28 Lord Rd., Suite 280, Marlborough, MA 01752.)

OF 92-0647. NEW HAMPSHIRE. Locations of fracture intervals inferred from borehole logs of eight wells at the Holton Circle Superfund site, Londonderry, New Hampshire, by B. P. Hansen. Prepared in cooperation with the U.S. Environmental Protection Agency, Waste Management Division. 1993. 22 p. (NC, Da, M, Wb; USGS, WRD, 28 Lord Rd., Suite 280, Marlborough, MA 01752; and 525 Clinton St., Bow, NH 03304.)

OF 92-0648. TENNESSEE. Hydrologic and hydraulic analyses at Akin Branch and Cayce Valley Branch, Columbia, Tennessee, by G. S. Outlaw. Prepared in cooperation with the City of Columbia. 1993. 56 p. (NC, Da, M, Wb; USGS, WRD, 810 Broadway, Suite 500, Nashville, TN 37203.)

OF 92-0649. MARYLAND. Acid rain induced changes in streamwater quality during storms on Catoctin Mountain, Maryland, by K. C. Rice and O. P. Bricker. 1992. 2 p. (NC, Da, M, Wb, A, S, U.) (Water fact sheet.)

OF 92-0651. Hydrologic and sedimentologic data collected during four cruises at high water on the Mississippi River and some of its tributaries, March 1989 through June 1990, by J. A. Moody and R. H. Meade. 1993. 227 p. (NC, Da, M, Wb, U.)

OF 92-0652. A data base of nitrate in ground-water samples from the conterminous United States, by K. J. Lanfear. 1992. 7 p. (NC, Da, M, Wb.)

OF 92-0653. NEW MEXICO. Rainfall and runoff data for the Albuquerque, New Mexico, metropolitan area, 1984-88, by K. D. Metzker, R. L. Gold and R. P. Thomas. Prepared in cooperation with the Albuquerque Metropolitan Arroyo Flood Control Authority and the City of Albuquerque. 1993. 388 p. (NC, Da, M, Wb, U; USGS, WRD, 4501 Indian School Rd. NE, Suite 200, Albuquerque, NM 87110.)

OF 92-0655. CALIFORNIA. Water-quality data for shallow wells in the western and southern Tulare Basin, San Joaquin Valley, California, May to August 1989, by W. C. Swain and L. F. Duell, Jr. Prepared in cooperation with the California Department of Water Resources and the San Joaquin Valley Drainage Program. 1993. 30 p. (NC, Da, M, Wb; USGS, WRD, Federal Bldg., Room W-2233, 2800 Cottage Way, Sacramento, CA 95825; and 5735 Kearny Villa Rd., Suite O, San Diego, CA 92123.)

OF 92-0659. Source code for the computer program and sample data set for the simulation of cylindrical flow to a well using the U.S. Geological Survey modular finite-difference ground-water flow model, by T. E. Reilly and A. W. Harbaugh. 1992. 12 p., one 5 1/4 inch diskette. (NC, Da, M, Wb.)

An MS-DOS compatible, 1.2MB diskette is included with this report.

OF 92-0661. Archiving data from Gulf Coast Regional Aquifer System Analysis study, by K. A. Kirkpatrick. 1993. 18 p. (NC, Da, M, Wb, S; USGS, WRD, 10615 SE Cherry Blossom Dr., Portland, OR 97216.)

OF 92-0679. LOGRAF; lognormal graph for resource assessment forecast, by R. A. Crovelli and R. H. Balay. 1992. 30 p. 30 pgs., one 5 1/4 inch diskette. (NC, Da, M.)

Requirements: IBM-PC or compatible; minimum 400K free memory; MS-DOS 3.3 or higher; VGA graphics adapter; PostScript laser printer. A numeric coprocessor is not required.

OF 92-0680. Reprocessing of reflection seismic lines R111 and R102, Risha gas field, Hashemite Kingdom of Jordan, by J. J. Miller, W. F. Agena and M. W. Lee. 1992. 29 p. (NC, Da, M.)

OF 92-0681. NEVADA. Preliminary geologic map of the Paleozoic rocks in the Arrow Canyon Quadrangle, Clark County, Nevada, by W. R. Page. 1992. 13 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088.)

OF 92-0682. INDIANA. Indiana coal and associated rock samples collected from 1975 to 1977, by C. L. Oman, W. A. Hassenmueller and L. J. Bragg. 1992. 129 p. (NC, Da, M.)

OF 92-0685. Catalog of pre-Cretaceous geologic drill-hole data from the upper Mississippi Embayment; a revision and update of Open-file report 90-260, compiled by R. L. Dart. 1992. 253 p. (NC, Da, M; Geol. Surv. of Alabama, P.O. Box 0, University Station, Tuscaloosa, AL 35486; Arkansas Geol. Commission, 3815 West Roosevelt Rd., Little Rock, AR 72204; Illinois State Geol. Surv., Natural Resources Bldg., 615 East Peabody Dr., Room 121, Champaign, IL 61820; Kentucky Geol. Surv., Univ. of Kentucky, 311 Breckinridge Hall, Lexington, KY 40506; Pirth Geol. Library, 100 Bowman Hall, Univ. of Kentucky, Lexington, KY 40506; Dep. of Natural Resources, Div. of Geol. and Land Surv., 111 Fairgrounds Rd., P.O. Box 250, Rolla, MO 65401; Bur. of Geol., Mississippi Dep. of Natural Resources, P.O. Box 5348, Jackson, MS 39216; Dep. of Conservation, Div. of Geol., Customs House, 701 Broadway, Nashville, TN 37219-5237.) (Open-file report 90-260 never released. For additional information write to R. L. Dart, USGS, Mail Stop 966, Denver, CO 80225; telephone 303-273-8637.)

OF 92-0686. HAWAII. Hawaiian Volcano Observatory; Summary 90 Part II, Deformation data, January to December 1990, by M. K. Sako, P. T. Delaney, A. J. Largo, Asta Miklius and A. T. Okamura. 1992. 64 p. (NC, Da, M.)

OF 92-0687. ARIZONA. Map of industrial mineral occurrences in the national forests of Arizona, compiled by B. B. Houser. 1992. 30 p., 1 over-size sheet. (NC, Da, M, U; Arizona Bur. of Geol. and Mineral Technol., 845 North Park Ave., Tucson, AZ 85719.)

OF 92-0689. COLORADO. Measured section of the Pennsylvanian Hermosa Group near Hermosa, Colorado, by K. J. Franczyk. 1992. 32 p. (NC, Da, M, U; John W. Rold, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

OF 92-0690. ALASKA. Map and table of mineral deposits on Annette Island, Alaska, by S. M. Karl. 1992. 57 p., 1 over-size sheet, scale 1:63,360 (1 inch = 1 mile). (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99703-3645.)

OF 92-0691. Demonstration disk for USGS-OEMG mapping software, by C. A. Cook and R. A. Ambroziak. 1992. 3 p. 3 pgs., one 5 1/4 inch DS/HD IBM compatible diskette. (NC, Da, M.)

OF 92-0693. Seismic survey of Lake Baikal, Siberia; operational technical summary for the RV Balkash and RV Titov, 15 August to 30 September 1992, by D. R. Nichols, G. K. Miller and Lyosha Akentiev. 1992. 20 p. (NC, Da, M.)

OF 92-0694. Using regional geologic information to assess relative aquifer contamination potential; an example from the central United States, by D. R. Soller and R. C. Berg. 1992. 1 over-size sheet, scale 1:1,000,000 (1 inch = about 16 miles). (NC, Da, M.)

OF 92-0695. OREGON, CALIFORNIA. Preliminary geologic map of the Carberry Creek Quadrangle, Oregon and California, by M. M. Donato. 1992. 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, S; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012; Oregon Dep. of Geol. and Mineral Industries, Suite 965, 800 Northeast Oregon St. #28, Portland, OR 97232.)

OF 92-0696. Oil and gas resource assessment areas; 1992; lower 48 states, compiled by G. L. Dolton, K. L. Varnes, D. L. Gautier and J. K. Baird. 1992. 1 over-size sheet, scale 1:5,000,000 (1 inch = about 80 miles). (NC, Da, M.)

OF 92-0697. KANSAS. Preliminary geologic map of the Bloom SE Quadrangle and part of the Simmons Creek Quadrangle, Clark County, Kansas, by M. W. Green and G. M. Fairer. Prepared in cooperation with the Kansas Geological Survey. 1993. 5 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M; Kansas Geol. Surv. 1930 Constant Ave., Campus West, Univ. of Kansas, Lawrence, KS 66046.)

OF 92-0698. KANSAS. Preliminary geologic map of the Bloom SW Quadrangle and parts of the Bloom, Minneola, and Fowler SE quadrangles, Clark County, Kansas, by G. M. Fairer and M. W. Green. Prepared in cooperation with the Kansas Geological Survey. 1993. 5 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M; Kansas Geol., Surv., 1930 Constant Ave., Campus West, Univ. of Kansas, Lawrence, KS 66046.)

OF 92-0699. ^{40}Ar-^{39}Ar dating of the Jaramillo normal subchron and the Matuyama and Brunhes geomagnetic boundary, by G. A. Izett and J. D. Obradovich. 1992. 22 p. (NC, Da, M.)

OF 92-0700-A. NEW JERSEY. Aeromagnetic gridded data for New Jersey, by S. L. Snyder. 1992. 11 p. 11 pgs., three 5 1/4 inch DS/HD IBM compatible diskettes. (NC, Da, M.)

OF 92-0701. ALASKA. $^{40}Ar/^{39}Ar$ age-spectrum data for whole rock basalts, and plagioclase and biotite from tephra; a traverse down the Porcupine River, East-Central Alaska, by M. J. Kunk and Henry Cortesini, Jr. 1992. 81 p. (NC, Da, M, A, S; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Anchorage, AK 99513.)

OF 92-0703. PUERTO RICO. Sand-sized heavy mineral distributions in the Rio Cibuco system and adjacent rivers of north-central Puerto Rico, by Gretchen Luepke and L. J. Poppe. 1993. 28 p. (NC, Da, M.)

OF 92-0704. Comparison of the Cracow-Silesian mississippi valley-type district, southern Poland, with mississippi valley-type districts in North America, by D. L. Leach and J. G. Viets. 1992. 72 p. (NC, Da, M.)

OF 92-0705. Descriptive model of stratabound sulfur and contained-sulfur model of stratabound sulfur, by K. R. Long. 1992. 8 p. (NC, Da, M.)

OF 92-0706. ALASKA. Marine geologic investigations of Disenchantment Bay, Alaska, after breakup of 1986 Hubbard Glacier ice dam; RV Karluk Cruise K1-91-YB, 21-28 June 1991, by P. R. Carlson, R. D. Powell, E. A. Cowan and D. E. Lawson. 1992. 41 p. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 92-0707. CALIFORNIA. Ca-Mg carbonate deposits, Warnick Canyon, Colusa County, California, by R. L. Oscarson, T. S. Presser and W. W. Carothers. 1992. 32 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 92-0708-A. ALASKA. Analytical data and sample locality map of stream-sediment and heavy-mineral-concentrate samples collected from the Horn Mountains area, Sleetmute Quadrangle, Southwest Alaska, by P. M. Theodorakos, J. C. Borden, J. H. Bullock, Jr., J. E. Gray and P. L. Hageman. 1992. 35 p. (NC, Da, M, S, A; Alaska Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645; U.S. Dep. of Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513.)

OF 92-0708-B. ALASKA. Analytical data and sample locality map of stream-sediment and heavy-mineral-concentrate samples collected from the Horn Mountains area, Sleetmute Quadrangle, Southwest Alaska, by P. M. Theodorakos, J. C. Borden, J. H. Bullock, Jr., J. E. Gray and P. L. Hageman. 1992. One 5 1/4 inch diskette. (NC, Da, M, S, A; Alaska Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645; U.S. Dep. of Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513.)

Requirements: IBM compatible computer using MS DOS with a 5 1/4 inch, 360K drive.

OF 92-0709. COLORADO. Analytical results and sample locality maps of stream-sediment and heavy-mineral-concentrate samples from the San Juan National Forest, Archuleta, Dolores, Hinsdale, La Plata, Mineral, Montezuma, Rio Grande, San Juan, and San Miguel counties, Colorado, by H. N. Barton, D. L. Fey, J. M. Motooka and R. T. Hopkins. 1992. 46 p., 1 over-size sheet, scale 1:250,000 (1 inch = about 4 miles), one 5 1/4 inch diskette. (NC, Da, M, U; John W. Rold, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

Requirements: one 5 1/4 inch DS/DD IBM compatible diskette. MS-DOS 2.0 or greater, coprocessor required for the conversion program (included on the diskette).

OF 92-0710. NEW MEXICO. A digital geologic map and explanation of San Antonio Mountain Quadrangle, Rio Arriba and Taos counties, New Mexico, by R. A. Thompson and P. W. Lipman. 1992. 7 p., one 5 1/4 inch diskette. (NC, Da, M, U; New Mexico Bur. of Mines and Mineral Resources, Campus Station, Socorro, NM 87801.)

The dataset is distributed on an IBM compatible, 5 1/4 inch, 1.2MB format diskette.

OF 92-0711. NEW MEXICO, COLORADO. A digital geologic map and explanation of the Los Pinos Quadrangle, Rio Arriba and Taos counties, New Mexico and Conejos County, Colorado, by R. A. Thompson and P. W. Lipman. 1992. 7 p., one 5 1/4 inch diskette. (NC, Da, M, U; New Mexico Bur. of Mines and Mineral Resources, Campus Station, Socorro, NM 87801; John W. Rold, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

The dataset is distributed on an IBM compatible, 5 1/4 inch, 1.2MB format diskette.

OF 92-0712. Palynological data from Pliocene sediments, DSDP Leg 5 Site 32, northeastern Pacific Ocean, by R. F. Fleming. 1992. 24 p. (NC, Da, M.)

OF 92-0713. IDAHO. Palynological data from a 989-ft (301-m) core of Pliocene and early Pleistocene sediments from Bruneau, Idaho, by R. S. Thompson. 1992. 28 p. (NC, Da, M, U, S; Idaho Geol. Surv., Univ. of Idaho Campus, Morrill Hall, Room 332, Moscow, ID 83843.)

OF 92-0714. Deep seismic reflection studies in the Pacific Northwest U.S., by F. N. Zihlman. Prepared in cooperation with the U.S. Department of Energy. 1992. One CD-ROM. (NC, Da, M.)

DOS environment system requirements: Intel 80286 or higher processor; DOS 3.0 or later; a math coprocessor is NOT required, but will be used if available and is strongly recommended; Microsoft MSCDEX version 2.1 or later; CD-ROM drive with ISO 9660 software driver; EGA/VGA/Hercules graphics system. Macintosh system requirements: CD-ROM drive with ISO 9660 or Macintosh HFS software driver.

OF 92-0715. WASHINGTON. Wellbore breakout analysis for determining tectonic stress orientations in Washington State, by M. E. Magee and M. L. Zoback. 1992. 56 p. (NC, Da, M, S; Washington DNR/Div. of Geol. and Earth Resources Library, 1111 Washington St. SE, Olympia, WA 98501 (mail address: PO Box 47007, Olympia, WA 98504-7007).

OF 92-0716. VIRGINIA. Geologic map of Loudoun County, Virginia, compiled by W. C. Burton, A. J. Froelich, J. S. Schindler and C. S. Southworth. Prepared in cooperation with the Department of Natural Resources, Loudoun County, Virginia. 1993. 17 p., 1 over-size sheet, scale 1:100,000 (1 inch = about 1.6 miles). (NC, Da, M, Wa; Virginia Div. of Mineral Resources, Natural Resources Bldg., Alderman and McCormick Rds., P.O. Box 3667, Charlottesville, VA 22903.)

OF 92-0717. PUERTO RICO. Progress of studies on the impact of Hurricane Hugo on the coastal resources of Puerto Rico, edited by W. C. Schwab and R. W. Rodriguez. 1992. 95 p. (NC, Da, M.)

Hurricane Hugo; a description of the storm, by R. W. Rodriguez, R. M. Webb and D. M. Bush. p. 8-14.

Historical shoreline analysis, by B. R. Richmond, E. R. Thieler and W. W. Danforth. p. 15-19.

Coastal monitoring, by B. R. Richmond, Milton Carlo, J. L. Trias and R. W. Rodriguez. p. 20-28.

Coastal hazards mapping, by D. M. Bush and B. R. Richmond. p. 29-35.

Historical shoreline analysis using digital techniques, by W. W. Danforth and E. R. Thieler. p. 36-42.

Effects of Hurricane Hugo on offshore sand deposits, by C. M. DeLorey, L. J. Poppe and R. W. Rodriguez. p. 43-59.

Insular shelf sedimentologic processes; Playa de Luquillo, by W. C. Schwab, W. W. Danforth, R. W. Rodriguez, M. H. Gowen and T. F. O'Brien. p. 60-72.

Quantitative analysis of sidescan sonar imagery, by M. H. Gowen, W. C. Schwab and W. W. Danforth. p. 73-79.

Assessment of damage to coral reefs by Hurricane Hugo, by E. A. Shinn and R. B. Halley. p. 80-91.

OF 92-0719. SEAPCONE; a seafloor piezometric cone penetrometer system, by W. J. Winters, G. K. Miller and J. S. Booth. 1992. 36 p. (NC, Da, M.)

OF 92-0720. Four AVS modules; READ.NETCDF, TOPO2IRREG, Z.SLICER, WIDE.ARROW, by E. L. Wright. 1992. 9 p. (NC, Da, M.)

OF 92-0721. Analytical results for B-horizon soil samples, from the International Falls and Roseau 1° × 2° quadrangles, Minnesota/Ontario, by G. O. Riddle, A. L. Meier, J. M. Motooka, O. Erlich, J. R. Clark, J. A. Saunders, D. L. Fey and T. Sparks. 1992. 13 p. 10 p., one 3 1/2 inch diskette. (NC, Da, M; Minnesota Geol. Surv., 2642 University Ave., St. Paul, MN 55114-1057; Minnesota Dep. of Natural Resources, Div. of Minerals, P.O. Box 567, 1525 3rd Ave. East, Hibbing, MN 55746.)

A 3 1/2 inch high-density (1.44MB) IBM-compatible diskette is included with the report, and requires 6.3MB of free disk space.

OF 92-0722. The value of barrier islands; 1, Mitigation of locally-generated wind-wave attack on the mainland, by J. H. List and M. E. Hansen. 1992. 18 p. (NC, Da, M.)

OF 92-0723. SOUTH CAROLINA. Data report for a seismic refraction/wide-angle reflection investigation of the Atlantic Coastal Plain in South Carolina, by J. H. Luetgert, H. M. Benz, E. E. Criley and Song-Lin Li. 1993. 35 p. (NC, Da, M; Norman K. Olson, State Geologist, South Carolina Geol. Surv., 5 Geology Rd., Columbia, SC 29210-9998.)

OF 92-0724. ALASKA. Magnetic susceptibility measurements and sample locations of granitic rocks from along a transect of the Coast Mountains near Juneau, Alaska, by J. L. Drinkwater, A. B. Ford and D. A. Brew. 1992. 22 p. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 92-0725. VIRGINIA. Preliminary geologic map of the Aspen and nearby areas, Virginia, by A. E. Nelson. 1993. 1 over-size sheet, scale 1:48,000 (1 inch = 4,000 feet). (NC, Da, M, Wa; Virginia Div. of Mineral Resources, Natural Resources Bldg., Alderman and McCormick Rds., P.O. Box 3667, Charlottesville, VA 22903.)

OF 93-0001-A. REPORT; a program for generating method descriptions and bibliographies of routine work performed in analytical laboratories, by J. N. Grossman and M. W. Doughten. 1993. 8 p. (NC, Da, M.)

OF 93-0001-B. Method descriptions and bibliography of routine work performed by the Branch of Geochemistry analytical laboratories, U.S. Geological Survey, by M. W. Doughten and J. N. Grossman. 1993. 16 p. (NC, Da, M.)

OF 93-0001-C. A program for generating method descriptions and bibliographies of routine work performed in analytical chemistry laboratories, by J. N. Grossman and M. W. Doughten. 1993. One 3 1/2 inch diskette. (NC, Da, M.)

Requirements: IBM PC or compatible 80486-based system, or 80386-based system with math coprocessor; minimum 570K available RAM; HP LaserJet series II or higher, or compatible printer.

OF 93-0002. WYOMING. Principal facts for 284 gravity stations in the Newcastle 1° × 2° Quadrangle, northeastern Wyoming, by Courteney Williamson and S. L. Robbins. 1992. 23 p. (NC, Da, M, U; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071.)

OF 93-0003. UTAH. Preliminary geologic map of the Parowan Quadrangle, Iron County, Utah, by Florian Maldonado and R. C. Moore. 1993. 11 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Utah Geol. Surv., 2363 Foothill Dr., Salt Lake City, UT 84109-1403.)

OF 93-0004. Geology and hydrocarbon resources of onshore basins in eastern China, by G. F. Ulmishek. 1992. 150 p. (NC, Da, M.)

OF 93-0005. Program TracePlot, version 1.1; seismic trace plotting program for the Macintosh, by J. J. Miller. 1992. 10 p., one 3 1/2 inch diskette. (NC, Da, M.)

TracePlot, version 1.1 is a Macintosh application designed to display the seismic traces contained in a SEG-Y format disk file on the CRT screen of a Macintosh micro-computer running operating system 6.0 or higher. User-controlled options are available to specify display parameters like scale, gain, plotting style, timing line annotation, plot direction, etc. Color and Monochrome monitors are supported. TraceCopy, version 1.1 is designed to copy a subset of the traces and/or a subset of the samples from the input SEG-Y format disk file to another, smaller file. Input files must be in standard SEG-Y exchange format as specified by the Society of Exploration Geophysicists (Barry, et al., 1975). Data samples must be type #1:IBM floating point (4 bytes (32 bits) per sample).

OF 93-0007. Ocean bottom seismometers operation during the seismic survey of Lake Baikal, Siberia, autumn 1992, by U. S. ten Brink, Alik Badardinov, G. K. Miller and D. F. Coleman. 1992. 24 p. (NC, Da, M.)

OF 93-0010. NEW JERSEY. Geochemical data for Jurassic basalts in the early Mesozoic Newark Basin, New Jersey; the data of G. T. Faust, by H. E. Belkin and D. F. Fiorito. 1993. 51 p. (NC, Da, M.)

OF 93-0011. The Farallones moored array data report, by K. L. Kinoshita, M. A. Noble and S. R. Ramp. 1993. 108 p. (NC, Da, M.)

OF 93-0012. A suggested rationale and selected bibliography for using rule-based expert computer systems (artificial intelligence) in recurrent petroleum resource assessments, by W. C. Butler. 1993. 126 p. (NC, Da, M.)

OF 93-0013. Program Kolor-map and section Amiga version 1.0, by A. A. Zohdy. 1993. 85 p. 85 pgs., one 3 1/2 inch diskette. (NC, Da, M.)

Requirements are an Amiga computer with a minimum of 5MB RAM (4MB Fast RAM and 1MB Chip RAM), running under AmigaDOS 1.3 or higher. A math coprocessor is recommended but not required. A program that reads files from MS-DOS diskettes into the Amiga is required (for example, CrossDOS, which is part of AmigaDOS 2.1 and higher).

OF 93-0014. ALASKA. Element concentrations and baselines for moss, lichen, spruce, and surface soils, in and near Wrangell-Saint Elias National Park and Preserve, Alaska, by J. G. Crock, K. A. Beck, D. L. Fey, P. L. Hageman, C. S. Papp and T. R. Peacock. Prepared in cooperation with the U.S. National Park Service. 1993. 98 p. (NC, Da, M, A, S; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645; U.S. Dep. of Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513.)

OF 93-0015. HAWAII. Drilling report and core logs for the 1988 drilling of Kilauea Iki lava lake, Kilauea Volcano, Hawaii, with summary descriptions of the occurrence of foundered crust and fractures in the drill core, by R. T. Helz. 1993. 57 p. (NC, Da, M.)

OF 93-0016. Analyses of Landsat thematic mapper images of the Berenguela-Charaña area, Bolivia, by B. A. Eiswerth. 1993. 18 p., 5 over-size sheets. (NC, Da, M.)

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The data referenced in this report are written on a 1.2MB, high density, 5 1/4 inch diskette, readable by an IBM PC or compatible computer running DOS, version 2.0 or higher. An executable program is provided to allow this binary file to be converted to any of 8 different formats.

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OF 93-0146. CALIFORNIA. Particulate organic matter in the San Francisco Bay estuary, California; chemical indicators of its origin and assimilation into the benthic food web, by J. E. Cloern, E. A. Canuel and S. M. Wienke. 1993. 46 p. (NC, Da, M, Wb; USGS, WRD, Federal Bldg., Room W-2233, 2800 Cottage Way, Sacramento, CA 95825.)

OF 93-0148. CALIFORNIA. Drilling, construction, and subsurface data for piezometers on Edwards Air Force Base, Antelope Valley, California, 1991-92, by D. L. Rewis. Prepared in cooperation with the U.S. Department of the Air Force. 1993. 35 p. (NC, Da, M, Wb; USGS, WRD, Federal Bldg., Room W-2233, 2800 Cottage Way, Sacramento, CA 95825; and 5735 Kearny Villa Rd., Suite O, San Diego, CA 92123.)

OF 93-0149. IDAHO. Water-resources activities of the U.S. Geological Survey in Idaho, fiscal years 1989-90, compiled by B. N. Kemp. 1993. 52 p. (NC, Da, M, Wb; USGS, WRD, 230 Collins Rd., Boise, ID 83702; and Idaho National Engineering Laboratory, CF-690, Room 164, Idaho Falls, ID 83403.)

OF 93-0150. ARKANSAS. Hydrogeologic data for Carroll County, Arkansas, by J. V. Brahana, V. A. Leidy, John Lindt and S. A. Hodge. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 32 p. (NC, Da, M, Wb.)

OF 93-0153. MISSOURI. Geochemical data for the Weldon Spring training area and vicinity property, St. Charles County, Missouri; 1990-92, by J. G. Schumacher, S. J. Sutley and J. D. Cathcart. Prepared in cooperation with the U.S. Army Corps of Engineers, Kansas City District. 1993. 80 p. (NC, Da, M, Wb; USGS, WRD, 1400 Independence Rd., Mail Stop 200, Rolla, MO 65401.)

OF 93-0154. Water Resources Research Grant Program projects descriptions, fiscal year 1992, compiled by Melvin Lew and P. D. Murray. 1993. 113 p. (NC, Da, M, Wb.)

OF 93-0162. ALASKA. Hydrologic data for the lower Copper River, Alaska, May to September 1992, by T. P. Brabets. Prepared in cooperation with the Alaska Department of Transportation and Public Facilities. 1993. 26 p. (NC, Da, M, Wb, A, S; USGS, WRD, 4230 University Dr., Suite 201, Anchorage, AK 99508-4664; 800 Yukon Dr., Fairbanks, AK 99775-5170; and 9101 Mendenhall Mall Rd., Federal Bldg. Annex, Suite 8, Juneau, AK 99802.)

OF 93-0163. NORTH CAROLINA. Water-quality and biological data for selected streams, lakes, and wells in the High Point Lake watershed, Guilford County, North Carolina, 1988-89, by M. S. Davenport. Prepared in cooperation with the City of High Point, North Carolina. 1993. 144 p. (NC, Da, M, Wb.)

OF 93-0166. ARKANSAS. Summary of reported agriculture and irrigation water use in Ashley County, Arkansas, 1991, by T. W. Holland and C. A. Manning. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 8 p. (NC, Da, M, Wb.)

OF 93-0167. ARKANSAS. Summary of reported agriculture and irrigation water use in Chicot County, Arkansas, 1991, by T. W. Holland and C. A. Manning. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 8 p. (NC, Da, M, Wb.)

OF 93-0171. ARKANSAS, OKLAHOMA. Annual yield and selected hydrologic data for the Arkansas River Basin Compact Arkansas-Oklahoma 1992 water year, by C. S. Barks, R. L. Blazs and S. T. Touschner. Prepared in cooperation with the Arkansas River Compact Commission Arkansas-Oklahoma. 1993. 42 p. (NC, Da, M, Wb.)

OF 93-0177. CALIFORNIA. Preliminary data and age-correlation for extra rock samples (KG-25 to KG 47) in the Cooperative Monterey Organic Geochemistry Study, Santa Maria and Santa Barbara-Ventura basins, California, by C. M. Isaacs, J. H. Tomson, J. A. Barron, David Bukry and M. D. Lewan. 1993. 23 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0178. PUERTO RICO. Analytical results and sample locality map of soil samples from the Río Viví porphyry copper district, municipios of Utuado and Adjuntas, Puerto Rico, by R. E. Learned, H. A. Pierce and Ileana Perez. 1992. 38 p., 1 over-size sheet. (NC, Da, M.)

OF 93-0179. PUERTO RICO. Analytical results and sample locality map of soil samples from the Tanama-Helecho porphyry copper district, municipios of Utuado and Adjuntas, Puerto Rico, by R. E. Learned, H. A. Pierce and Ileana Perez. 1992. 34 p., 1 over-size sheet. (NC, Da, M.)

OF 93-0180. CALIFORNIA. Eocene benthic foraminiferal assemblages of the Palo Alto 7-1/2′ Quadrangle, California, by Kristin McDougall. 1993. 93 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0181. Reconnaissance report on the 12 October 1992 Dahshur, Egypt, earthquake, by P. C. Thenhaus, R. V. Sharp, Mehmet Celebi, A. B. Ibrahim and Hendrik Van de Pol. 1993. 63 p. (NC, Da, M.)

OF 93-0182. CALIFORNIA. Supplementary data on diatoms and calcareous nannofossils and preliminary revised ages for rock samples (KG-1 to KG-24) in the Cooperative Monterey Organic Geochemistry Study, Santa Maria and Santa Barbara-Ventura basins, California, by C. M. Isaacs, J. A. Barron and David Bukry. 1993. 13 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0183. COLORADO. Skarn-hosted mineralization in Paleozoic rocks beneath the Idarado Mine, northwest San Juan Mountains, Colorado, by J. N. Mayor and F. S. Fisher. 1993. 16 p., 1 over-size sheet. (NC, Da, M; USGS, Room 8105 Federal Bldg., 125 South State St., Salt Lake City, UT 84138-1177; Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203.)

OF 93-0184. MONTANA. Conodont biofacies in a ramp to basin setting (latest Devonian and earliest Carboniferous) in the Rocky Mountains of southernmost Canada and northern Montana, by L. E. Savoy and A. G. Harris. 1993. 38 p. (NC, Da, M, U, S; Montana Bur. of Mines and Geol., Montana Coll. of Mineral Sci. and Technol., Butte, MT 59701.)

OF 93-0185. MASSACHUSETTS. Erosion of Nantucket Island's eastern shore, December 1922, by D. W. Folger, D. S. Blackwood, R. N. Oldale, D. S. Foster, C. L. Brown and W. N. Tiffney, Jr. 1993. One VHS video tape. (NC, Da, M.)

OF 93-0186. NEVADA. Rock-Eval pyrolysis data from well cuttings samples, eastern Nevada, collected during 1991, by C. E. Barker, R. J. Szmajter, T. A. Daws and C. N. Threlkeld. 1993. 4 p. (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088.)

OF 93-0187. A portable vacuum hammer seismic source for use in tunnel environments, by R. D. Carroll and J. E. Magner. Pre-

pared in cooperation with the U.S. Defense Nuclear Agency and the U.S. Department of Energy. 1993. 35 p. (NC, Da, M.)

OF 93-0188-A. Cartographic technical standards on the Apple Macintosh, by J. F. Vigil. 1993. 74 p. (NC, Da, M.)

OF 93-0188-B. Cartographic technical standards on the Apple Macintosh, by J. F. Vigil. 1993. Five 3 1/2 inch diskettes. (NC, Da, M.)

Requirements: The program will run on any Macintosh with at least 4MB of RAM (8MB preferred), a 20-MB hard disk, and Macintosh Operating System 6.0.5 or higher.

OF 93-0189. OREGON, WASHINGTON. The Cenozoic geology of the Oregon and Washington Coast Range; and road log for the Northwest Petroleum Association 9th annual field trip; Cenozoic geology of coastal Northwest Oregon, by P. D. Snavely, Jr., R. E. Wells and D. L. Minasian. 1993. 40 p. (NC, Da, M, S; Oregon Dep. of Geol. and Mineral Industries, Suite 956, 800 Northeast Oregon St. #28, Portland, OR 97232.)

OF 93-0190. UTAH. Preliminary geologic map of Navajo Lake Quadrangle, Kane and Iron counties, Utah, by D. W. Moore and N. L. David. 1993. 20 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U.)

OF 93-0191. CALIFORNIA. The preliminary damage and intensity survey for the Landers, California, earthquake of June 28, 1992, by L. R. Brewer. 1993. 32 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0192. WYOMING. Assessed oil and gas plays in Wyoming; generalized location maps and mean estimates of undiscovered recoverable conventional oil, gas, and natural gas liquids of plays appraised in the 1989 National assessment for oil and gas, by R. B. Powers and K. L. Varnes. 1993. 43 p. (NC, Da, Da, M, U; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071.)

OF 93-0194. Descriptive, and grade and tonnage model for gold-antimony deposits, by V. I. Berger. 1993. 24 p. (NC, Da, M.)

OF 93-0195. National Earthquake Hazards Reduction Program, summaries of technical reports; Volume XXXIV, compiled by M. L. Jacobson. Prepared by participants in the National Earthquake Hazards Reduction Program. 1993. 983 p. (In two volumes.) (NC, Da, M.)

OF 93-0196. A look at the benefits of post-processed differential GPS, by J. T. Gann. 1993. 7 p. (NC, Da, M.)

OF 93-0197-A. Movie footage of the activity of Paricutín Volcano, Michoacán, Mexico, 1945-1952, by Carl Fries, Jr., Kenneth Segerstrom, R. I. Tilling, D. E. White and R. E. Wilcox. 1993. 16 p. (NC, Da, M.)

OF 93-0197-B. Movie footage of the activity of Paricutín Volcano, Michoacán, Mexico, 1945-1952, by Carl Fries, Jr., Kenneth Segerstrom, R. I. Tilling, D. E. White and R. E. Wilcox. 1993. One 45-minute 1/2 inch VHS videotape. (NC, Da, M.)

OF 93-0198. CALIFORNIA, NEVADA. Geologic map of the New York Mountains area, California and Nevada, by D. M. Miller and J. L. Wooden. 1993. 10 p., 1 over-size sheet, scale 1:50,000 (1 inch = about 4,200 feet). (NC, Da, M, U; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012; Nevada Bur. of Mines and Geol., University of Nevada, Reno, NV 89557.)

OF 93-0199. OKLAHOMA, ARKANSAS. Annotated bibliography of graptolite references from Oklahoma, Arkansas, and adjacent areas, with a list of cited species, by Claire Carter. 1993. 22 p. (NC, Da, M.)

OF 93-0200. Modeling sand and gravel deposits; initial strategy and preliminary examples, by J. D. Bliss. 1993. 31 p. (NC, Da, M.)

OF 93-0203. UTAH. Preliminary geologic map of the Enterprise Quadrangle, Washington and Iron counties, Utah, by H. R. Blank, Jr. 1993. 33 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Utah Geol. Surv., 2363 Foothill Dr., Salt Lake City, UT 84109-1403.)

OF 93-0204. Significant earthquakes of the world, 1980-1984, compiled by W. J. Person and edited by J. M. Jacobs. 1993. 27 p. (NC, Da, M.)

OF 93-0205. CALIFORNIA. Preliminary geologic map of the Calabasas 7.5′ Quadrangle, Southern California, by R. F. Yerkes and P. K. Showalter. 1993. 11 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0206. CALIFORNIA. Preliminary geologic map of the Canoga Park 7.5′ Quadrangle, Southern California, compiled by R. F. Yerkes and R. H. Campbell. 1992. 10 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0207. MONTANA. Mineral resource assessment of the Absaroka-Beartooth study area, Custer and Gallatin national forests, Montana, edited by J. M. Hammarstrom, M. L. Zientek and J. E. Elliott. 1993. 295 p., 19 over-size sheets, scale 1:126,720 (1 inch = 2 miles). (NC, Da, M, U, S; Montana Bur. of Mines and Geol., Montana Coll. of Mineral Sci. and Technol., Butte, MT 59701.)

A. The Absaroka-Beartooth study area, by J. M. Hammarstrom, J. E. Elliott, B. S. Van Gosen and M. L. Zientek. p. A1-A22.

B. Geology of the Absaroka-Beartooth study area, by J. E. Elliott, B. S. Van Gosen, E. A. du Bray, E. J. LaRock and M. L. Zientek. p. B1-B23.

C. Geophysics of the Absaroka-Beartooth area, by D. M. Kulik. p. C1-C6.

D. Geochemistry of the Absaroka-Beartooth area, by G. K. Lee and R. R. Carlson. p. D1-D11.

E. Mineral occurrences and level of exploration, by J. M. Hammarstrom and M. L. Zientek. p. E1-E38.

F. Mineral resource appraisal for locatable minerals; the Stillwater Complex, by M. L. Zientek. p. F1-F83.

G. Mineral resource assessment for locatable minerals (exclusive of the Stillwater Complex), by J. M. Hammarstrom, M. L. Zientek, J. E. Elliott, B. S. Van Gosen, R. R. Carlson, G. K. Lee and D. M. Kulik. p. G1-G78.

H. Hydrocarbon potential of the Absaroka-Beartooth study area; a preliminary summary, by W. J. Perry, Jr. and E. J. LaRock. p. H1-H5.

I. Coal and coal bed methane resources of the Absaroka-Beartooth study area, by J. N. Weaver and J. R. Gruber, Jr. p. I1-I7.

J. Summary of estimates of undiscovered resources, by J. M. Hammarstrom and M. L. Zientek. p. J1-J6.

OF 93-0208-A. Annotated bibliography of metallogenic maps (material mostly published between 1960 and 1987), compiled by M. P. Foose and Karen Bryant. 1993. 91 p. (NC, Da, M.)

OF 93-0208-B. Annotated bibliography of metallogenic maps (material mostly published between 1960 and 1987), compiled by M. P. Foose and Karen Bryant. 1993. (NC, Da, M.)

The computer diskette presents this information in three different forms. The first is as ASCII text which can be imported by most IBM PC-compatible word processors. The second is a similar text file in Word for Windows format. The third is in Lotus 123 version 1.x format. Most IBM-PC-compatible spreadsheet programs can translate this file. This spreadsheet file enables the user to import these references into most databases and to manipulate (sort and extract) records. The requirements to access these computer files are an IBM PC or compatible computer capable of running standard word processing and spreadsheet software, and reading 5 1/4 inch 1.2MB high-density diskettes.

OF 93-0210. LOUISIANA. Louisiana Coastal Geographic Information System Network; alpha version 0.1, year three final report, by R. A. McBride, M. W. Hiland, F. W. Jones, DeWitt Braud, Jr., L. D. Wayne, H. R. Streiffer, M. C. Carpenter, A. J. Lewis, Sudish Mogli, Jay Arnold, Srinivasa Lingineni and S. J. Williams. 1993. 96 p. (NC, Da, M.)

Louisiana Coastal GIS Network; relational database design for a spatially indexed cataloging system, by M. W. Hiland, L. D. Wayne and H. R. Streiffer. p. 30-46. (NC, Da, M.)

OF 93-0211. OREGON, WASHINGTON. Aeromagnetic map of the Portland-Vancouver metropolitan area, Oregon and Washington, by S. L. Snyder, T. J. Felger, R. J. Blakely and R. E. Wells. 1993. 1 over-size sheet, scale 1:100,000 (1 inch = about 1.6 miles). (NC, Da, M, S; Washington DNR/Div. of Geol. and Earth Resources Library, 1111 Washington St. SE, Olympia, WA 98501 (mail address: PO Box 47007, Olympia, WA 98504-7007; Oregon Dep. of Geol. and Industries, Suite 965, 800 NE Oregon St. No. 28, Portland, OR 97232.)

OF 93-0212. OREGON, WASHINGTON. Characteristics of sediments from selected lakes of Oregon and Washington and their potential for obtaining high-resolution paleoclimate records, by W. E. Dean and J. P. Bradbury. 1993. 21 p. (NC, Da, M, S; Dep. of Geol. and Mineral Industries, 910 State Office Bldg., Portland, OR 97201-5528; and Earth Resources Div., Dep. of Natural Resources, Olympia, WA 98504; David A. Johnston Cascade Volcano Observatory, 5400 MacArthur Blvd., Vancouver, WA 98661.)

OF 93-0213. HAWAII. Map of debris-flow hazard in Honolulu District of Oahu, Hawaii, by S. D. Ellen, R. K. Mark, S. H. Cannon and D. L. Knifong. 1993. 28 p., 1 over-size sheet. (NC, Da, M.)

OF 93-0214. Texture of the surficial sediments in Fishers Island Sound, by L. J. Poppe, R. S. Lewis and A. M. Moffett. 1993. 28 p. (NC, Da, M.)

OF 93-0215. ALASKA. Barite deposits in the Howard Pass Quadrangle and possible relations to barite elsewhere in the northwestern Brooks Range, Alaska, by J. S. Kelley, I. L. Tailleur, R. L. Morin, K. M. Reed, A. G. Harris, J. M. Schmidt, F. M. Brown and J. M. Kurtak. 1993. 13 p., 9 over-size sheets; sheet 2, scale 1:63,360 (1 inch = 1 mile). (NC, Da, M, A, S; U.S. Dep. of Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 93-0216. Dense three-dimensional array near Garni, Armenia as part of the Joint Eurasian Seismic Studies Program (objectives, array design, archived data, and preliminary wave-slowness analysis), edited by G. N. Glassmoyer and R. D. Borcherdt. 1993. 450 p. (NC, Da, M.)

1. Summary and objectives for a dense three-dimensional array near Garni, Armenia, by J. R. Filson, R. D. Borcherdt, W. H. Lee, Edward Cranswick, C. M. Dietel, E. D. Sembera, J. J. Mori, Joe Sena, L. Hakhverdian, R. Amirbekian, V. Aharonian, K. Safarian, H. Galagian, G. Apoian and Robert Banfill. p. 1-3.

2. Site selection, array design, and recording instrumentation for the dense three-dimensional array near Garni, Armenia, by R. D. Borcherdt, J. R. Filson, W. H. Lee, Edward Cranswick, C. M. Dietel, G. N. Glassmoyer, E. D. Sembera, J. J. Mori, L. Hakhverdian, R. Amirbekian, V. Aharonian, K. Safarian, H. Galagian, G. Apoian and Robert Banfill. p. 4-16.

3. Digital GEOS data from Garni, Armenia as archived on optical disk, by G. N. Glassmoyer. p. 17-333.

4. A PC-based seismic system for Armenia, by W. H. Lee, Edward Cranswick and Robert Banfill. p. 334-415.

5. Near-surface measurements of P- and S-wave velocities from the dense three-dimensional array near Garni, Armenia, by J. J. Mori, J. R. Filson, Edward Cranswick, R. D. Borcherdt, G. N. Glassmoyer, W. H. Lee, R. Amirbekian, V. Aharonian and L. Hakhverdian. p. 416-449.

OF 93-0217-A. CALIFORNIA. Principal facts and base station descriptions for gravity data compiled for the Santa Ana 1° by 2° Quadrangle, California, by R. F. Sikora, V. E. Langenheim, Shawn Biehler, L. A. Beyer and R. H. Chapman. 1993. 63 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0217-B. CALIFORNIA. Principal facts and base station descriptions for gravity data compiled for the Santa Ana 1° by 2° Quadrangle, California, by R. F. Sikora, V. E. Langenheim, Shawn Biehler, L. A. Beyer and R. H. Chapman. 1993. One 3 1/2 inch diskette. (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

Requirements: IBM PC or compatible, DOS v.2.0 or higher, with a 3 1/2 inch high density disk drive or a Macintosh with a Super Drive and Apple File Exchange software to convert from PC to MAC. On a PC, the file should be read into and out of text editor to align columns. On a Macintosh some editing will be needed to align columns after converting from PC to MAC.

OF 93-0218. Planktic foraminifer census data from Northwind Ridge cores PI-88-AR P3, PI-88-AR P7 and PI-88-AR P9, Arctic Ocean, by K. M. Foley and R. Z. Poore. 1993. 11 p. (NC, Da, M.)

OF 93-0219. CALIFORNIA. Digital recordings of aftershocks of the April 25 and 26, 1992, Cape Mendocino, California, earthquakes, by D. L. Carver. 1993. 64 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0220. NEVADA. Preliminary geologic map of the Rowland-Bearpaw Mountain area, Elko County, Nevada, by K. B. Ketner, J. E. Repetski, B. R. Wardlaw and R. G. Stamm. 1993. 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088.)

OF 93-0221. Location of acoustic sources using seismological techniques and software, by J. C. Lahr and F. G. Fischer. 1993. 9 p. (NC, Da, M.)

OF 93-0222. VIRGINIA. Stratigraphic distribution and bibliography of fossil fish, amphibians, and reptiles from Virginia, by R. E. Weems. 1993. 49 p. (NC, Da, M, Wa; Virginia Div. of Mineral Resources, P.O. Box 3667, Charlottesville, VA 22903.)

OF 93-0223. CALIFORNIA. Preliminary maps showing Quaternary geology of the Patterson and Crows Landing 7.5-minute quadrangles, California, by J. M. Sowers, J. S. Noller and W. R. Lettis. 1993. 3 over-size sheets, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0224. CALIFORNIA. Preliminary maps showing Quaternary geology of the Solyo and Lone Tree Creek 7.5-minute quadrangles, California, by J. S. Noller, J. M. Sowers and W. R. Lettis. 1993. 3 over-size sheets, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0225. CALIFORNIA. Preliminary maps showing Quaternary geology of the Tracy and Midway 7.5-minute quadrangles, California, by J. M. Sowers, J. S. Noller and W. R. Lettis. 1993. 3 over-size sheets, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0226. Program TracePlot, version 2.0; seismic trace plotting program for the Macintosh, by J. J. Miller. 1993. 17 p., one 3 1/2 inch diskette. (NC, Da, M.) (Supersedes OF 93-5.)

Diskette is 3 1/2 inch, 800K Macintosh format.

OF 93-0227. CALIFORNIA. The Southern California Network Bulletin, January-December 1992, by L. A. Wald, Kathy Watts, J. J. Mori and Katrin Douglass. 1993. 54 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0228. Grade-tonnage data for detachment-fault related polymetallic deposits, by K. R. Long. 1993. 18 p. (NC, Da, M.)

OF 93-0230. OKLAHOMA. Porosity, depth, and thermal-maturity data for sandstones of the Anadarko Basin, Oklahoma, and other selected locations in the Northern Hemisphere, by T. C. Hester and J. W. Schmoker. 1993. 46 p. (NC, Da, M.)

OF 93-0231. VIRGINIA. Data, software, and applications for education and research in geology; Virginia, by R. A. Ambroziak, G. R. Woodwell, C. A. Cook and R. E. Wicks. 1993. One CD-ROM. (NC, Da, M, Wa; Virginia Div. of Mineral Resources, Natural Resources Bldg., Alderman and McCormick Rds., P.O. Box 3667, Charlottesville, VA 22903.)

IBM or compatible personal computer, preferably having an 80386 or higher numbered processor; 640K RAM; MS- or PC-DOS version 3.1 or later; Microsoft MSCDEX version 2.1 or later; CD-ROM drive with ISO 9660 software driver; mouse; super VGA, 156 colors, necessary for imaging, EGA/VGA minimum for mapping; and math coprocessor desirable.

OF 93-0232. CALIFORNIA. Uranium-series dates on sediments of the high shoreline of Panamint Valley, California, by J. A. Fitzpatrick and J. L. Bischoff. 1993. 15 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0233. WASHINGTON. Geologic map of surficial deposits in the Seattle 30′ × 60′ Quadrangle, by J. C. Yount, J. P. Minard and G. R. Dembroff. 1993. 2 over-size sheets; sheet 1, scale 1:100,000 (1 inch = about 1.6 miles). (NC, Da, M, S; Washington DNR, Div. of Geol. and Earth Resources Library, 1111 Washington St. SE, Olympia, WA 98501.)

OF 93-0234-A. Interactive inversion of transient electromagnetic data for a central-induction loop over layered earth models (version 1.0.), by W. L. Anderson. 1993. 33 p. (NC, Da, M.)

OF 93-0234-B. Interactive inversion of transient electromagnetic data for a central-induction loop over layered earth models (version

1.0), by W. L. Anderson. 1993. One 3 1/2 inch diskette. (NC, Da, M.)

Minimum hardware requirements: 386 IBM compatible PC; 2MB RAM; math coprocessor; EGA or VGA video adapter and monitor; hard disk with more than 3MB free space; and a 1.44MB (HD) floppy disk drive. Minimum software requirements: MS-DOS 3.0 or higher; and RSoft (TM) Inc. RPlot Scientific Graphics (version 2.05).

OF 93-0235. IDAHO. Structural analysis and ore controls in the Coeur d'Alene mining district, Idaho, by R. R. Reid, T. J. Hayden, C. S. Wavra and W. D. Bond. 1993. 66 p. (NC, Da, M, U, S; Idaho Geol. Surv., Morrill Hall, Room 332, Univ. of Idaho Campus, Moscow, ID 83843.)

OF 93-0236. MICHIGAN. Preliminary data on the lithology, bromine distribution, and insoluble minerals from the A-1 Evaporite Formation, Salina Group, in the JEM Petroleum Corporation, Bruggers 3-7 Core, Missaukee County, Michigan, by O. B. Raup and R. J. Hite. 1993. 15 p. (NC, Da, M; Geol. Surv. Div., Michigan Dep. of Natural Resources, P.O. Box 30028, Lansing, MI 48909.)

OF 93-0237. Drift ice as a geologic agent, by S. M. Wessells, Erk Reimnitz, P. W. Barnes and E. W. Kempema. 1993. One 20-minute VHS video tape. (NC, Da, M.)

OF 93-0238. ALASKA. Onshore-offshore wide-angle seismic recordings of the 1989 Alaskan EDGE profile; five-day recorder data, by T. M. Brocher and M. J. Moses. 1993. 25 p. (NC, Da, M.)

OF 93-0240-A. NURE stream sediment geochemical data indicative of prospective terranes for Ti-Zr-REE placer exploration in selected regions of the United States, by A. E. Grosz. 1993. 157 p. (NC, Da, M.)

OF 93-0240-B. NURE stream sediment geochemical data indicative of prospective terranes for Ti-Zr-REE placer exploration in selected regions of the United States, by A. E. Grosz. 1993. One 5 1/4 inch diskette. (NC, Da, M.)

Requirements: IBM PC or compatible; minimum 640K RAM. Diskette containing text and data in ASCII (DOS) format; 5 1/4 inch, 1.2MB capacity.

OF 93-0241-A. GKS-PC; a kernel graphics programming system for IBM-PC and compatible microcomputers, by R. H. Balay. 1993. 52 p. (NC, Da, M.)

OF 93-0241-B. GKS-PC; a kernel graphics programming system for IBM-PC and compatible microcomputers, by R. H. Balay. 1993. One 5 1/4 inch diskette. (NC, Da, M.)

Requirements; IBM-PC or compatible; minimum 400K free memory; MS-DOS 3.3 or higher; CGA, EGA, VGA, AT&T or Hercules graphics adapter and compatible monitor; Epson compatible dot matrix printer; (optional) Summagraphics compatible graphics tablet. A numeric coprocessor is optional, but recommended.

OF 93-0242. MudScan; PC based sidescan sonar real-time data acquisition, logging and display system, by J. T. Gann, L. D. Kooker and M. E. Boyle. 1993. 23 p. (NC, Da, M.)

OF 93-0243. NEW JERSEY. Analytical results for As species and related elements in interstitial porewater and sediment from the Maurice River and Union Lake in Vineland, New Jersey, by W. H. Ficklin, L. S. Balistrieri, P. L. Hageman, C. S. Papp, D. L. Fey and Matthew Westgate. 1993. 24 p. (NC, Da, M.)

OF 93-0244. VIRGINIA, NORTH CAROLINA. Preliminary geologic map of the South Boston 30 × 60 minute Quadrangle, Virginia and North Carolina, by J. W. Horton, Jr., J. D. Peper, J. D. Marr, Jr., W. C. Burton and P. E. Sacks. Prepared in cooperation with the Virginia Division of Mineral Resources. 1993. 20 p., 1 over-size sheet. scale 1:100,000 (1 inch = about 1.6 miles). (NC, Da, M, Wa; Virginia Div. of Mineral Resources, Natural Resources Bldg., Alderman and McCormick Rd., P.O. Box 3667, Charlottesville, VA 22903; Div. of Land Resources, Dep. of Natural Resources and Community Dev., 512 North Salisbury St., P.O. Box 27687, Raleigh, NC 27611.)

OF 93-0245. Microcrack populations associated with a propagating shear fracture in granite, by D. E. Moore. 1993. 88 p. (NC, Da, M.)

OF 93-0248. Petroleum exploration plays and resource estimates, 1989, onshore United States; Region 3, Colorado Plateau and Basin and Range, edited by R. B. Powers. 1993. 112 p. (NC, Da, M, S, U; Idaho Geol. Surv., Univ. of Idaho Campus, Morrill Hall, Room 332, Moscow, ID 83843; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088; Bur. of Geol. and Mineral Technol., 845 North Park Ave., Tucson, AZ 85719; Utah Geol. Surv., 2363 Foothill Dr., Salt Lake City, UT 84109-1403; New Mexico Bur. of Mines and Mineral Resources, Campus Station, Socorro, NM 87801; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071; John W. Rold, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

Introduction, by R. B. Powers. p. 1-8.

Geologic framework, by R. B. Powers. p. 9-10.

Eastern Basin and Range Province (082), by J. A. Peterson. p. 11-16.

Western Basin and Range Province (083), by H. E. Cook. p. 17-20.

Idaho-Snake River downwarp province (084), by J. A. Peterson. p. 21-24.

Paradox Basin province (085), by J. A. Peterson. p. 25-34.

Uinta-Piceance-Eagle basins province (086), by C. W. Spencer. p. 35-44.

Park basins province (087), by E. K. Maughan. p. 45-48.

San Juan Basin province (088), by A. C. Huffman, Jr. p. 49-65.

Albuquerque-Santa Fe-San Luis Rift basins province (089), by C. M. Molenaar. p. 66-73.

Wyoming-Utah-Idaho thrust belt province (090), by R. B. Powers. p. 74-92.

North Arizona province (091), by W. C. Butler. p. 93-98.

South-central New Mexico province (092), by W. C. Butler. p. 99-102.

Southern Arizona-southwestern New Mexico province, by W. C. Butler. p. 103-106.

OF 93-0249. NEVADA. Quantitative geochemistry of rocks from the Adelaide mining district, Humboldt County, Nevada, by T. M. Cookro. 1993. 169 p. (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088.)

OF 93-0250. COLORADO. Colorado's ancient bristlecone pines, by F. C. Brunstein. 1993. 5 p. (NC, Da, M, U; John W. Rold, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

OF 93-0251. Introduction to wide area information servers, by E. J. Christian. 1993. One 35-minute VHS videotape. (NC, Da, M.)

OF 93-0255. Lithological and geophysical characteristics of the Pakistan Mineral Development Corporation's THL core hole; implications for the coal resource potential of the lower and middle part of the Bara Formation in the Lakhra area of Sindh, Pakistan, by Christopher Wnuk, J. R. SanFilipo, S. F. Fatmi, S. A. Khan and Mohammad Fariduddin. Prepared in cooperation with the Geological Survey of Pakistan. 1993. 137 p. (NC, Da, M.)

OF 93-0256. The stratigraphy and coal resource potential of the Bara Formation in the Fort Ranikot area, Sindh Province, Pakistan; a progress report, by Christopher Wnuk, J. R. SanFilipo, A. H. Chandio and S. F. Fatmi. Prepared in cooperation with the Geological Survey of Pakistan. 1993. 63 p. (NC, Da, M.)

OF 93-0257. An all-weather time-lapse video recording station, by Henry Chezar and J. E. Thomas. 1993. 9 p. (NC, Da, M.)

OF 93-0258-A. Evaluation of the United States Geological Survey's three-step assessment methodology, by D. P. Harris and Michael Rieber. 1993. 675 p. (NC, Da, M.)

OF 93-0258-B. Evaluation of the United States Geological Survey's three-step assessment methodology, by D. P. Harris and Michael Rieber. 1993. Two 3 1/2 inch diskettes. (NC, Da, M.)

Minimum hardware requirements: IBM compatible PC; 1.2MB floppy disk drive. Minimum software requirements: MS-DOS 3.0 or higher; and WordPerfect 5.0 or higher.

OF 93-0259-A. OREGON. Analytical results and sample locality map of stream-sediment, heavy-mineral-concentrate, and rock samples from the Upper Leslie Gulch (OR-003-074) and Slocum Creek (OR-003-075) Wilderness Study Areas, Malheur County, Oregon, by P. L. Hageman, H. D. King, J. L. Jones and M. S. Erickson. 1993. 23 p. (NC, Da, M, S; Dep. of Geol. and Mineral Industries, 910 State Office Bldg., Portland, OR 97201-5528.)

OF 93-0259-B. OREGON. Analytical results and sample locality map of stream-sediment, heavy-mineral-concentrate, and rock samples from the Upper Leslie Gulch (OR-003-074) and Slocum Creek (OR-003-075) Wilderness Study Areas, Malheur County, Oregon, by P. L. Hageman, H. D. King, J. L. Jones and M. S. Erickson. 1993. One 5 1/4 inch diskette. (NC, Da, M. S; Dep. of Geol. and Mineral Industries, 910 State Office Bldg., Portland, OR 97201-5528.)

Data files on diskette are in STATPAC (.NST) format. An executable data conversion program, STP2DAT.EXE has been included to provide various format options into which the .NST file may be changed. Text file is in ASCII format. Requirements: IBM compatible computer using MS DOS with a 5 1/4 inch, 360K drive.

OF 93-0260. UTAH. Analytical results for soil samples collected at the Roosevelt Hot Springs Known Geothermal Resource Area, Utah 1976-1987, by M. E. Hinkle. 1993. 14 p., one 5 1/4 inch diskette. (NC, Da, M, U; Utah Geol. Surv., 2363 Foothill Dr., Salt Lake City, UT 84109-1403.)

Requirements: IBM or compatible PC using MS DOS, with a 5 1/4 inch, 360K drive.

OF 93-0262-A. A bibliography of geomorphometry with a topical key to the literature and an introduction to the numerical characterization of topographic form, by R. J. Pike. 1993. 132 p. (NC, Da, M.)

OF 93-0262-B. A bibliography of geomorphometry with a topical key to the literature and an introduction to the numerical characterization of topographic form, by R. J. Pike. 1993. (NC, Da, M.)

Macintosh version consisting of one text file on one 3 1/2 inch 1.44MB diskette. Formatted in Microsoft Word, version 5.0

OF 93-0262-C. A bibliography of geomorphometry with a topical key to the literature and an introduction to the numerical characterization of topographic form, by R. J. Pike. 1993. (NC, Da, M.)

IBM-PC or compatible version, consisting of one text file on one 3 1/2 inch 1.44MB diskette. Formatted in WordPerfect, version 5.0

OF 93-0263. CALIFORNIA. Geologic setting of the East Antelope Basin, with emphasis on fissuring on Rogers Lake, Edwards AFB, Mojave Desert, California, by A. W. Ward, G. L. Dixon and R. C. Jachens. 1993. 9 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0264. Cape Hatteras to the Mid Atlantic Ridge; demultiplexing and archiving a unique multichannel seismic reflection data set, by W. F. Agena, D. R. Hutchinson, M. W. Lee and H. L. Oliver. 1993. 19 p. (NC, Da, M.)

OF 93-0266. ALASKA. Acoustic profiles of sediment in a meltwater lake adjacent to the Bering Glacier, Alaska, RV Karluk Cruise K2-91-YB, July 1-7, 1991, by P. R. Carlson, R. A. Tagg and B. F. Molnia. 1993. 26 p. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 93-0267. Abundances of Li, Rb, and Sr in W-2, BCR-1, and AC-E determined by isotope dilution mass spectroscopy, by Norma Rait, F. G. Walthall and J. A. Philpotts. 1993. 6 p. (NC, Da, M.)

OF 93-0268-A. INDIANA. Preliminary digital Quaternary geologic map data for Indiana, by D. R. Soller and Wai-See Moy. 1993. 5 p. (NC, Da, M.)

OF 93-0268-B. INDIANA. Preliminary digital Quaternary geologic map data for Indiana, by D. R. Soller and Wai-See Moy. 1993. Four 3 1/2 inch DS/HD diskettes. (NC, Da, M.)

Requirements; a computer with DOS (version 2.01 or higher) operating system, 3 1/2 inch high-density disk drive, and a hard disk drive with at least 5MB of unused storage space; a computer with ARC/INFO GIS software; and a method of file transfer between these computers, unless the DOS computer also supports ARC/INFO.

OF 93-0270. UTAH. Sedimentological descriptions and geophysical logs of two 300-m cores collected from the Straight Cliffs Formation of the Kaiparowits Plateau, Kane County, Utah, by R. D. Hettinger. 1993. 50 p. (NC, Da, M, U; Utah Geol. Surv., 2363 Foothill Dr., Salt Lake City, UT 84109-1403.)

OF 93-0271. CALIFORNIA. Preliminary geologic map of the onshore part of the Palo Alto 1:100,000 Quadrangle, California, compiled by E. E. Brabb. 1993. 21 p., 1 over-size sheet, scale 1:62,500 (1 inch = about 1 mile). (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0272. CALIFORNIA. Death Valley, California; surface micro-relief statistics and radar scatterometer data, by G. G. Schaber and G. L. Berlin. Prepared for the National Aeronautics and Space Administration. 1993. 232 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0273. ARKANSAS, TENNESSEE. Progress report on chronostratigraphic and paleoclimatic studies, middle Mississippi River valley, eastern Arkansas and western Tennessee, edited by H. W. Markewich. 1993. 61 p. (NC, Da, M.)

Regional geology and stratigraphic framework, by H. W. Markewich. p. 4-6.

Carbon-14, by Meyer Rubin, J. P. McGeehin and H. W. Markewich. p. 6-7.

Beryllium-10, by M. J. Pavich. p. 7-8.

TL, OSL, and IRSL dating techniques, by H. T. Millard, Jr. and P. B. Maat. p. 8-9.

Detailed loess and Paleosol stratigraphy, by L. B. Ward, E. M. Rutledge and D. A. Wysocki. p. 9-23.

Composition of MMV loess, by S. G. Van Valkenburg and H. W. Markewich. p. 23.

Mineral magnetic studies of MMV loess, by D. T. Rodbell, J. G. Rosenbaum and R. L. Reynolds. p. 23-25.

Palynology of latest Pleistocene Loosahatchie River sediments, by F. J. Rich. p. 25-27.

OF 93-0274. X-ray mineralogy of sediments from the southern Black Sea and selected rivers, by L. J. Poppe and B. J. Hay. 1993. 13 p. (NC, Da, M.)

OF 93-0276. CALIFORNIA. Onshore-offshore wide-angle seismic recordings of the San Francisco Bay area seismic imaging experiment (BASIX); the five-day recorder data, by T. M. Brocher and M. J. Moses. 1993. 89 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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0277. CALIFORNIA. Aeromagnetic map of the San Jose 1:100,000 scale Quadrangle, California, by C. W. Roberts and R. C. Jachens. 1993. 1 over-size sheet, scale 1:100,000 (1 inch = about 1.6 miles). (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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0278-A. Landslide effects, by T. R. Alpha. 1993. 43 p. (NC, Da, M.)

OF 93-0278-B. Landslide effects, by T. R. Alpha. 1993. One 3 1/2 inch diskette. (NC, Da, M.)

Requirements: Apple Computer, HyperCard 2.0 software, and an Apple Macintosh computer with high-density drive. If using System 7, recommend usage of at least 3MB of RAM with 1.5MB of system memory available for HyperCard.

OF 93-0279. CALIFORNIA. Schlumberger soundings near Twentynine Palms, California, by R. J. Bisdorf. 1993. 72 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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0280. Digital grade and tonnage data for 50 types of mineral deposits; Macintosh version, by D. A. Singer, D. L. Mosier and W. D. Menzie. 1993. One 3 1/2 inch diskette. (NC, Da, M.)

Requirements for the program are: any word processor or spreadsheet program that can read text formatted data that is tab delineated, and an Apple Macintosh computer.

OF 93-0281. Analysis of soil reference materials PL-1 and BPGM-1 for the Polish Committee on Standardization Measures and Quality Control, by S. A. Wilson, P. H. Briggs, J. S. Mee and D. F. Siems. 1993. 18 p. (NC, Da, M.)

OF 93-0282. COLORADO. A direct-current resistivity survey near Mineral Hot Springs, San Luis Valley, Colorado, by A. A. Zohdy and R. J. Bisdorf. 1993. 61 p. (NC, Da, M, U; John W. Rold, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

OF 93-0284. WASHINGTON. Occurrences of Recent and Holocene intertidal diatoms (Bacillariophyta) in northern Willapa Bay, Washington, by Eileen Hemphill-Haley. 1993. 94 p. (NC, Da, M, S; Washington DNR/Div. of Geol. and Earth Resources Library, 1111 Washington St. SE, Olympia, WA 98501.)

OF 93-0285-A. MONTANA. Bibliography of geologic references (1872-1992) to the Absaroka-Beartooth Study Area in the Custer and Gallatin national forests, south-central Montana, compiled by B. S. Van Gosen. 1993. 71 p. (NC, Da, M, U, S; Montana Bur.

of Mines and Geol., Montana Coll. of Mineral Sci. and Technol., Butte, MT 59701.)

OF 93-0285-B. MONTANA. Bibliography of geologic references (1872-1992) to the Absaroka-Beartooth Study Area in the Custer and Gallatin national forests, south-central Montana, compiled by B. S. Van Gosen. 1993. One 5 1/4 inch diskette. (NC, Da, M, U, S; Montana Bur. of Mines and Geol., Montana Coll. of Mineral Sci. and Technol., Butte, MT 59701.)

The bibliography is provided on 5 1/4 inch, high-density (1.2MB) diskette in two IBM-compatible formats: (1) a WordPerfect (version 5.1) file, and (2) an ASCII data file. The ASCII data file should be amenable to transport into most IBM-compatible word-processing programs.

OF 93-0286. CALIFORNIA. Uranium-series dates on oyster shells from marine terraces of San Pablo Bay, California, by E. J. Helley, J. A. Fitzpatrick and J. L. Bischoff. 1993. 4 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0287. HYPERMAG; an interactive, 2- and 2 1/2-dimensional gravity and magnetic modeling program; version 3.5, by R. W. Saltus and R. J. Blakely. 1993. 39 p. (NC, Da, M.)

Requirements: a computer with an ANSI77 Fortran compiler, a C compiler, and the X-windows library (MIT X11 version 5 or later). To edit the plot files produced by HYPERMAG, a graphics program that understands Adobe Illustrator input format is required. To make hardcopy of the HYPERMAG plots, you need a PostScript printer, or conversion software that accepts PostScript.

OF 93-0289. WASHINGTON. Taxonomy of Recent and fossil (Holocene) diatoms (Bacillariophyta) from northern Willapa Bay, Washington, by Eileen Hemphill-Haley. 1993. 151 p. (NC, Da, M, S; Washington DNR, Div. of Geol. and Earth Resources Library, 1111 Washington St. SE, Olympia, WA 98501.)

OF 93-0290. CALIFORNIA. USGS National Earthquake Hazard Reduction Program (NEHRP) in Northern California in FY93, by W. H. Bakun. 1993. 20 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0291. MISSOURI. Description of insoluble residues from the T. P. Russell No. 1 drill hole and other drill holes in southeastern Missouri, by D. S. Collins and R. A. Bohm. 1993. (NC, Da, M; Dep. of Natural Resources, Div. of Geol. and Land Surv., 111 Fairgrounds Rd., P.O. Box 250, Rolla, MO 65401.)

OF 93-0292-G. Geologic radon potential of EPA Region 7; Iowa, Kansas, Missouri, and Nebraska, edited by R. R. Schumann. Prepared in cooperation with the U.S. Environmental Protection Agency. 1993. 147 p. (NC, Da, M; Iowa Geol. Surv., 123 North Capitol St., Iowa City, IA 52242; Kansas Geol. Surv., 1930 Constant Ave., Campus West, Univ. of Kansas, Lawrence, KS 66046; Dep. of Natural Resources, Div. of Geol. and Land Surv., 111 Fairgrounds Rd., P.O. Box 250, Rolla, MO 65401; Conservation and Surv. Div., Institute of Agriculture and Natural Resources, 113 Nebraska Hall, Univ. of Nebraska, Lincoln, NE 68588-0517.)

1. The USGS/EPA state radon potential assessments; an introduction, by L. C. Gundersen, R. R. Schumann and S. W. White. p. 1-35.

2. EPA Region 7 geologic radon potential summary, by R. R. Schumann, J. K. Otton and S. L. Szarzi. p. 36-45.

3. Preliminary geologic radon potential assessment of Iowa, by R. R. Schumann. p. 46-70.

4. Preliminary geological radon potential assessment of Kansas, by R. R. Schumann. p. 71-95.

5. Preliminary geologic radon potential assessment of Missouri, by J. K. Otton. p. 96-124.

6. Preliminary geologic radon potential assessment of Nebraska, by R. R. Schumann. p. 125-147.

OF 93-0292-H. Geologic radon potential of EPA Region 8; Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming, edited by R. R. Schumann. Prepared in cooperation with the U.S. Environmental Protection Agency. 1993. 184 p. (NC, Da, M, U, S; Vicki J. Cowart, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203; Montana Bur. of Mines and Geol., Montana Coll. of Mineral Sci. and Technol., Butte, MT 59701; North Dakota Geol. Surv., University Station, Grand Forks, ND 58202-8156; Dep. of Water and Natural Resources, South Dakota Geol. Surv., Sci. Ctr., Univ. of South Dakota, Vermillion, SD 57069; Utah Geol. Surv., 2363 Foothill Dr., Salt Lake City, UT 84109-1403; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071.)

1. The USGS/EPA state radon potential assessments; an introduction, by L. C. Gundersen, R. R. Schumann and S. W. White. p. 1-35.

2. EPA Region 8 geologic radon potential summary, by R. R. Schumann, D. E. Owen, R. F. Dubiel and S. L. Szarzi. p. 36-41.

3. Preliminary geologic radon potential assessment of Colorado, by R. F. Dubiel. p. 42-68.

4. Preliminary geologic radon potential assessment of Montana, by D. E. Owen. p. 69-90.

5. Preliminary geologic radon potential assessment of North Dakota, by R. R. Schumann. p. 91-115.

6. Preliminary geologic radon potential assessment of South Dakota, by R. R. Schumann. p. 116-137.

7. Preliminary geologic radon potential assessment of Utah, by R. F. Dubiel. p. 138-161.

8. Preliminary geologic radon potential assessment of Wyoming, by R. F. Dubiel. p. 162-184.

OF 93-0292-I. Geologic radon potential of EPA Region 9; Arizona, California, Hawaii, and Nevada, edited by R. R. Schumann. Prepared in cooperation with the U.S. Environmental Protection Agency. 1993. 142 p. (NC, Da, M, U; Bur. of Geol. and Mineral Technol., 845 North Park Ave., Tucson, Az 85719; Div. of Water and Land Dev., P.O. Box 373, Honolulu, HI 96809; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088; 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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

1. The USGS/EPA state radon potential assessments; an introduction, by L. C. Gundersen, R. R. Schumann and S. W. White. p. 1-35.

2. EPA Region 9 geologic radon potential summary, by J. K. Otton, D. E. Owen, R. F. Dubiel, G. M. Reimer and S. L. Szarzi. p. 36-43.

3. Preliminary geologic radon potential assessment of Arizona, by R. F. Dubiel and D. E. Owen. p. 44-69.

4. Preliminary geologic radon potential assessment of California, by J. K. Otton. p. 70-93.

5. Preliminary geologic radon potential assessment of Hawaii, by G. M. Reimer. p. 94-122.

6. Preliminary geologic radon potential assessment of Nevada, by D. E. Owen. p. 123-142.

OF 93-0292-J. Geologic radon potential of EPA Region 10; Alaska, Idaho, Oregon, and Washington, edited by R. R. Schumann. Prepared in cooperation with the U.S. Environmental Protection Agency. 1993. 146 p. (NC, Da, M, A, S, U; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645; U.S. Dep. of Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Idaho Geol. Surv., Univ. of Idaho Campus, Morrill Hall, Room 332, Moscow, ID 83843; Oregon Dep. of Geol. and Mineral Industries, Suite 965, 800 NE Oregon St. #28, Portland, OR 97232-2162; Geol. and Earth Resources Div., Dep. of Natural Resources, Olympia, WA 98504; David A. Johnston Cascade Volcano Observatory, 5400 MacArthur Blvd., Vancouver, WA 98661.)

1. The USGS/EPA state radon potential assessments; an introduction, by L. C. Gundersen, R. R. Schumann and S. W. White. p. 1-35.

2. EPA Region 10 geologic radon potential summary, by J. K. Otton, K. A. Dickinson, D. E. Owen and S. L. Szarzi. p. 36-46.

3. Preliminary geologic radon potential assessment of Alaska, by K. A. Dickinson. p. 47-77.

4. Preliminary geologic radon potential assessment of Idaho, by D. E. Owen. p. 78-102.

5. Preliminary geologic radon potential assessment of Oregon, by J. K. Otton. p. 103-124.

6. Preliminary geologic radon potential assessment of Washington, by J. K. Otton. p. 125-146.

OF 93-0293. WYOMING. Evaluation of near-infrared spectra for detecting ammonium minerals at Shoshone geyser basin, Yellowstone National Park, Wyoming, by M. D. Krohn. 1993. 11 p. (NC, Da, M, U; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071.)

OF 93-0294. CALIFORNIA. A landowner's guide to U.S.G.S. investigations in Merced and Stanislaus counties, edited by Katherine O'Neill and Thomas Black. 1993. 8 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; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0295. Review of procedures for calculating USGS short-period seismograph system response, by J. P. Eaton. 1993. 26 p. (NC, Da, M.)

OF 93-0297. WASHINGTON. Geologic map of the Blue Lake Quadrangle, southern Cascade Range, Washington, by D. A. Swanson. 1993. 34 p., 2 over-size sheets, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, S; Washington DNR/Div. of Geol. and Earth Resources Library, 1111 Washington St. SE, Olympia, WA 98501.)

OF 93-0298. CALIFORNIA. Map of seafloor declivity and fall lines on the continental slope, Gulf of the Farallones, Central California, by M. A. Hampton, F. L. Wong, R. V. Lugo and C. W. Steele. 1993. 1 over-size sheet, scale 1:250,000 (1 inch = about 4 miles). (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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Low Angeles, CA 90012.)

OF 93-0299. NEVADA. Preliminary geologic map of the Pahute Mesa 30′ × 60′ Quadrangle, Nevada, by S. A. Minor, D. A. Sawyer, R. R. Wahl, V. A. Frizzell, Jr., S. P. Schilling, R. G. Warren, P. P. Orkild, J. A. Coe, M. R. Hudson, R. J. Fleck, M. A. Lanphere, W C Swadley and J. C. Cole. 1993. 39 p., 1 over-size sheet, scale 1:100,000 (1 inch = about 1.6 miles). (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada-Reno, Reno, NV 89557-0088.)

OF 93-0301. CALIFORNIA. Data report for the 1991 Bay area seismic imaging experiment (BASIX), by Jill McCarthy and P. E. Hart. 1993. 26 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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0302. OREGON. Preliminary geologic map of the Hebo Quadrangle, Tillamook and Yamhill counties, Oregon, by P. D. Snavely, Jr., N. S. NacLeod and D. L. Minasian. 1993. 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, S; Oregon Dep. of Geol. and Mineral Industries, Suite 965, 800 NE Oregon St. #28, Portland, OR 97232.)

OF 93-0303. SOUTH CAROLINA. Biogeochemical studies of the salt marsh and a barrier island at Cape Romain National Wildlife Refuge, South Carolina, edited by L. L. Jackson. 1993. 128 p. (NC, Da, M; South Carolina Geol. and Geodetic Surv., Harbison Forest Rd., Columbia, SC 28210.)

A. Baseline element concentrations in *Spartina alterniflora* and salt-marsh sediments at Cape Romain National Wildlife Refuge, South Carolina, by L. L. Jackson, L. P. Gough and R. C. Severson. p. A1-A49.

B. Baseline element concentrations in soils and plants, Bull Island, Cape Romain National Wildlife Refuge, South Carolina, by L. P. Gough, R. C. Severson and L. L. Jackson. p. B1-B19.

C. Assessment of possible anthropogenic influences on the biogeochemistry of the salt marsh and a barrier island at Cape Romain National Wildlife Refuge, South Carolina, by L. L. Jackson, L. P. Gough and R. C. Severson. p. C1-C23.

D. Chemical analysis results for biogeochemical studies at Cape Romain National Wildlife Refuge, South Carolina, by L. L. Jackson, L. P. Gough, R. C. Severson, P. H. Briggs, J. D. Cathcart, J. G. Crock, D. L. Fey, C. S. Papp, T. R. Peacock and S. A. Wilson. p. D1-D37.

OF 93-0305. DLGSCOD, DLGOCOD, DLGSGSM, DLGOGSM, programs for IBM-PC compatible microcomputers, by G. I. Selner and J. D. Hoffman. 1993. 22 p., one 5 1/4 inch diskette. (NC, Da, M.)

This report contains one 5 1/4 inch IBM compatible diskette with programs to convert 1:100,000-scale DLG data to GSMAP data bases.

OF 93-0306. COLORADO. Porosity and permeability data for the Point Lookout Sandstone from core holes 1HCMS and 2HCMS, northern San Juan Basin, La Plata County, Colorado, by R. S. Zech and C. W. Keighin. Prepared in cooperation with the Southern Ute Tribe and the U.S. Bureau of Indian Affairs. 1993. 180 p. (NC, Da, M, U; John W. Rold, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground water Section, 1313 Sherman, St., Room 818, Denver, CO 80203.)

OF 93-0309. ALASKA. Earthquake locations determined by the Southern Alaska seismograph network for October 1971 through May 1989, by K. A. Fogleman, J. C. Lahr, C. D. Stephens and R. A. Page. 1993. 54 p. (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645).

OF 93-0310. COLORADO. Preliminary geologic map of the New Castle Quadrangle, Garfield County, Colorado, by M. W. Green, G. M. Fairer and R. R. Shroba. 1993. 33 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Vicki J. Cowart, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

OF 93-0311. CALIFORNIA. Uranium-series and radiocarbon dates on tufas from Searles Lake, California, by J. F. Garcia, J. L. Bischoff, G. I. Smith and D. A. Trimble. 1993. 8 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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0312. OHIO, KENTUCKY. Preliminary analysis of conodont occurrences in Pennsylvanian strata of Ohio and Kentucky, by B. R. Wardlaw, C. L. Rice and R. G. Stamm. 1993. 9 p. (NC, Da, M; Pirtle Geol. Library, 100 Bowman Hall, Univ. of Kentucky, Lexington, KY 40506.)

OF 93-0314. OREGON. Chemical analyses of pre-Mazama silicic volcanic rocks, inclusions, and glass separates, Crater Lake, Oregon, by P. E. Bruggman, C. R. Bacon, J. S. Mee, S. T. Pribble and D. F. Siems. 1993. 20 p. (NC, Da, M, S; Oregon Dep. of Geol. and Mineral Industries, Suite 965, 800 NE Oregon St. , Portland, OR 97232.)

OF 93-0318. OREGON. Onshore-offshore wide-angle seismic recordings from central Oregon; the five-day recorder data, by T. M. Brocher, M. J. Moses and A. M. Tréhu. 1993. 24 p. (NC, Da, M, S; Oregon Dep. of Geol. and Mineral Industries, Suite 965, 800 NE Oregon St. #28, Portland, OR 97232.)

OF 93-0319. OREGON. Seismic refraction data across the Coast Range and Willamette Basin in central Oregon; the 1991 Pacific Northwest experiment, by A. M. Tréhu, Steve Azevedo, J. N. Nabelek, J. H. Luetgert, W. D. Mooney, Isa Asudeh and Brad Isbell. 1993. 31 p. (NC, Da, M, S; Oregon Dep. of Geol. and Mineral Industries, Suite 965, 800 NE Oregon St #28, Portland, OR 97232.)

OF 93-0320. COLORADO. Preliminary geologic map of the Storm King Mountain Quadrangle, Garfield County, Colorado, by G. M. Fairer, M. W. Green and R. R. Shroba. 1993. 33 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Vicki J. Cowart, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

OF 93-0321. COLORADO. Ion-exchange of clinoptilolite-rich rocks in Argo drain water at Idaho Springs, Colorado, and related experimental aspects, by G. A. Desborough. 1993. 23 p. (NC, Da, M, U; John W. Rold, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

OF 93-0323. Recent developments and emerging technology in well logging and formation evaluation; with a selected bibliography, by S. E. Prensky. 1993. 34 p. (NC, Da, M.)

OF 93-0324. A dual drawworks controller for borehole tomography, by T. P. Grover, R. P. Kipfinger and D. L. Wright. 1993. 37 p. (NC, Da, M.)

OF 93-0325. ALASKA. Map and compilation of structural data from lode-gold mineral occurrences in the Chugach-Prince William Terrane of Southern Alaska, by P. J. Haeussler and D. C. Bradley. 1993. 53 p., 1 over-size sheet, scale 1:506,880 (1 inch = 8 miles). (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 93-0327. IDAHO. Petrography, age, and paleomagnetism of basalt lava flows in coreholes Well 80, NRF 89-04, NRF 89-05, and ICPP 123, Idaho National Engineering Laboratory, by M. A. Lanphere, D. E. Champion and M. A. Kuntz. 1993. 40 p. (NC, Da, M, U, S; Idaho Geol. Surv., Morrill Hall, Room 332, Univ. of Idaho Campus, Moscow, ID 83843.)

OF 93-0328. Digital metallogenic data set for North America and South America, by M. P. Foose. 1993. One 3 1/2 inch diskette. (NC, Da, M.)

The dBASE III file format requires 2,281,543 bytes of computer space. The Lotus version 1.x spreadsheet file format requires 1,897,680 bytes of computer space. These two file formats are

accessible by many of the widely used spreadsheet and database programs. The requirements to access these computer files are an IBM PC or compatible computer capable of running standard spreadsheet or data base software and reading 5 1/4 inch 1.4MB high-density diskettes.

OF 93-0329. ARIZONA. Mineral resource assessment of undiscovered mineral deposits for selected mineral deposit types in the Kaibab National Forest, Arizona, by J. D. Bliss; *with a section on* Mineral resource assessment of solution-collapse breccia pipe uranium deposits, by J. D. Bliss and C. T. Pierson. 1993. 68 p. (NC, Da, M, U; Arizona Bur. of Geol. and Mineral Technol., 845 North Park Ave., Tucson, AZ 85719.)

OF 93-0330. Branch of Petroleum Geology bibliography, 1992, compiled by Helen Colburn. 1992. 28 p. (NC, Da, M.)

OF 93-0332. WASHINGTON. Analysis of Cenozoic subsidence at three sites in vicinity of the Seattle Basin, Washington, by S. Y. Johnson. 1993. 17 p. (NC, Da, M, S; Geol. and Earth Resources Div., Dep. of Natural Resources, Olympia, WA 98504; David A. Johnston Cascade Volcano Observatory, 5400 MacArthur Blvd., Vancouver, WA 98661.)

OF 93-0335. NORTH DAKOTA, SOUTH DAKOTA. Subsurface stratigraphic analysis of Upper Cretaceous rocks, southeastern flank of the Williston Basin, North and South Dakota, by J. K. Baird and T. S. Dyman. 1993. 20 p. (NC, Da, M; North Dakota Geol. Surv., University Station, Grand Forks, ND 58202-8156; Dep. of Water and Natural Resources, South Dakota Geol. Surv., Sci. Ctr., Univ. of South Dakota, Vermillion, SD 57069.)

OF 93-0336. Conversion of the Radiometric Age Data Bank (RADB) to the National Geochronological Data Base (NGDB), by B. D. Marshall. 1993. 76 p. (NC, Da, M.)

OF 93-0337. Petroleum exploration plays and resource estimates, 1989, onshore United States; Region 4, Rocky Mountains and Northern Great Plains, edited by R. B. Powers. 1993. 194 p. (NC, Da, M, U, S; Montana Bur. of Mines and Geol., Montana Coll. of Mineral Sci. and Technol., Butte, MT 59701; North Dakota Geol. Surv., University Station, Grand Forks, ND 58202-8156; Dep. of Water and Natural Resources, South Dakota Geol. Surv., Sci. Ctr., Univ. of South Dakota, Vermillion, SD 57069; Geol. Surv. of Wyoming, P.O. Box 3008, University Station, Laramie, WY 82071; Conservation and Surv. Div., Inst. of Agriculture and Natural Resources, 113 Nebraska Hall, Univ. of Nebraska, Lincoln, NE 68588-0517; New Mexico Bur. of Mines and Mineral Resources, Campus Station, Socorro, NM 87801; John W. Rold, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

Introduction, by R. B. Powers. p. 1-8.

Geologic framework, by R. B. Powers. p. 9-10.

Williston Basin province (094), by J. A. Peterson. p. 11-24.

Sioux Arch province (095), by J. A. Peterson. p. 25-26.

Sweetgrass Arch province (096), by T. S. Dyman. p. 27-39.

Central Montana province (097), by E. K. Maughan. p. 40-45.

Montana thrust belt province (098), by W. J. Perry, Jr. p. 46-56.

Southwest Montana province (099), by W. J. Perry, Jr. p. 57-70.

Wind River basin province (100), by J. E. Fox and G. L. Dolton. p. 71-84.

Powder River basin province (101), by G. L. Dolton and J. E. Fox. p. 85-116.

Southwestern Wyoming basins province (102), by B. E. Law. p. 117-143.

Bighorn Basin province (103), by J. E. Fox and G. L. Dolton. p. 144-161.

Denver Basin province (104), by D. L. Gautier. p. 162-176.

Las Animas Arch province (105), by E. A. Merewether. p. 177-185.

Raton Basin-Sierra Grande uplift province (106), by E. A. Merewether. p. 186-190.

OF 93-0338. Maps of major active faults, Western Hemisphere, International Lithosphere Program (ILP), Project II-2; guidelines for U.S. database and map, June 1993, by K. M. Haller, M. N. Machette and R. L. Dart. 1993. 45 p. (NC, Da, M.)

OF 93-0339. ALASKA. Metallogenesis of mainland Alaska and the Russian Northeast, by W. J. Nokleberg, T. K. Bundtzen, D. J. Grybeck, R. D. Koch, R. A. Eremin, I. S. Rozenblum, A. A. Sidorov, S. G. Byalobzhesky, G. M. Sosunov, V. I. Shpikerman and M. E. Gorodinsky. Prepared in cooperation with the Alaska Division of Geological and Geophysical Surveys, Russian Academy of Sciences, and Geological Committee of Northeastern Russia. 1993. 230 p., 3 over-size sheets, scale 1:4,000,000 (1 inch = about 65 miles). (NC, Da, M, A, S; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645.)

OF 93-0340. CALIFORNIA. Distribution and taxonomy of late Quaternary diatoms from gravity cores L13-81-G117, L13-81-G138, L13-81-G145, and TT197-G330, Northern California continental slope, by Eileen Hemphill-Haley. 1993. 108 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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0341. PUERTO RICO. Sand-sized heavy-mineral distributions in offshore insular shelf sediments of north-central Puerto Rico, by Gretchen Luepke and L. J. Poppe. 1993. 17 p. (NC, Da, M.)

OF 93-0342-A. HAWAII. Inflation and cooling data from pahoehoe sheet flows on Kilauea Volcano, by Ken Hon, J. P. Kauahikaua and Kevin Mackay. 1993. 29 p. (NC, Da, M; Div. of Water and Land Dev., P.O. Box 373, Honolulu, HI 96809.)

OF 93-0342-B. HAWAII. Inflation and cooling data from pahoehoe sheet flows on Kilauea Volcano, by Ken Hon, J. P. Kauahikaua and Kevin Mackay. 1993. One 3 1/2 inch diskette.

(NC, Da, M; Div. of Water and Land Dev., P.O. Box 373, Honolulu, HI 96809.)

3 1/2 inch IBM-compatible diskette that includes a variety of ASCII and spreadsheet data formats.

OF 93-0343. COLORADO. Geological setting of the Leadville mining district, Lake County, Colorado, by A. R. Wallace. 1993. 20 p. (NC, Da, M, U; Vicki J. Cowart, Colorado Geol. Surv., 1313 Sherman St., Room 715, Denver, CO 80203; Donald Fawcett, Office of the State Engineer, Ground Water Section, 1313 Sherman St., Room 818, Denver, CO 80203.)

OF 93-0345. MINNESOTA. Economic heavy minerals in glaciofluvial sediments of Minnesota, by Gretchen Luepke. 1993. 11 p. (NC, Da, M.)

OF 93-0347. WASHINGTON, OREGON. Data report for a seismic refraction/wide-angle reflection investigation of the Puget Basin and Willamette Valley in western Washington and Oregon, by J. H. Luetgert, W. D. Mooney, A. M. Tréhu, J. N. Nabelek, G. R. Keller, K. C. Miller, Isa Asudeh and Brad Isbell. 1993. 73 p. (NC, Da, M, S; Washington DNR/Div. of Geol. and Earth Resources Library, 1111 Washington St. SE, Olympia, WA 98501; Oregon Dep. of Geol. and Mineral Industries, Suite 965, 800 NE Oregon St. #28, Portland, OR 97232.)

OF 93-0348. CALIFORNIA. Broad belts of shear zones as the common form of surface rupture produced by the 28 June 1992 Landers, California, earthquake, by A. M. Johnson, R. W. Fleming and K. M. Cruikshank. 1993. 61 p., 1 over-size sheet. (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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0349. Geologic Hazards Data-Base catalog; central United States, by A. C. Tarr. 1993. 145 p. (NC, Da, M; Geol. Surv. of Alabama, P.O. Box 0, University Station, Tuscaloosa, AL 35486; Kentucky Geol. Surv., Univ. of Kentucky, 311 Breckinridge Hall, Lexington, KY 40506; Pirth Geol. Library, 100 Bowman Hall, Univ. of Kentucky, Lexington, KY 40506; Bur. of Geol., Mississippi Dep. of Natural Resources, P.O. Box 5348, Jackson, MS 39216; Dep. of Natural Resources, Div. of Geol. and Land Surv., 111 Fairgrounds Rd., P.O. Box 250, Rolla, MO 65401.)

OF 93-0352. Base sheet generation for 1:24,000-scale maps, by J. E. Findley. 1993. 31 p., one 3 1/2 inch IBM/UNIX compatible diskette. (M, Da, NC.)

Hardware requirements: Data General workstations operating under AViion-DG/UX 5.4.1. Software requirements: ARC/INFO version 6.1.

OF 93-0405. Determining the source of water pumped from wells along the lower Colorado River, by R. R. Wilson and S. J. Owen-Joyce. 1993. 2 p. (NC, Da, M, Wb, A, S, U.) (Water fact sheet.)

OF 93-0418. Selected papers on agricultural chemicals in water resources of the Midcontinental United States, compiled by D. A. Goolsby, L. L. Boyer and G. E. Mallard. 1993. 89 p. (NC, Da, M, Wb.)

Occurrence, distribution, and transport of agricultural chemicals in surface waters of the Midwestern United States, by D. A. Goolsby and W. A. Battaglin. p. 1-25.

Annual use and transport of agricultural chemicals in the Mississippi River, 1991-92, by W. A. Battaglin, D. A. Goolsby and R. H. Coupe. p. 26-40.

Relation of nitrate concentrations in surface water to land use in the upper-Midwestern United States, by D. K. Mueller, B. C. Ruddy and W. A. Battaglin. p. 41-50.

Persistence of herbicides in selected reservoirs in the Midwestern United States; some preliminary results, by D. A. Goolsby, W. A. Battaglin, J. D. Fallon, D. S. Aga, D. W. Kolpin and E. M. Thurman. p. 51-63.

Pesticides in near-surface aquifers; results of the Midcontinental United States ground-water reconnaissance, 1991-92, by D. W. Kolpin, D. A. Goolsby, D. S. Aga, J. L. Iverson and E. M. Thurman. p. 64-74.

Occurrence, deposition, and long range transport of herbicides in precipitation in the Midwestern and northeastern United States, by D. A. Goolsby, E. M. Thurman, M. L. Pomes, M. T. Meyers and W. A. Battaglin. p. 75-89.

OF 93-0424. ARKANSAS. Summary of reported agriculture and irrigation water use in Clay County, Arkansas, 1991, by T. W. Holland and C. A. Manning. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 8 p. (NC, Da, M, Wb.)

OF 93-0425. ARKANSAS. Summary of reported agriculture and irrigation water use in Craighead County, Arkansas, 1991, by T. W. Holland and C. A. Manning. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 8 p. (NC, Da, M, Wb.)

OF 93-0427. ARKANSAS. Summary of reported agriculture and irrigation water use in Cross County, Arkansas, 1991, by T. W. Holland and C. A. Manning. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 9 p. (NC, Da, M, Wb.)

OF 93-0428. ARKANSAS. Summary of reported agriculture and irrigation water use in Desha County, Arkansas, 1991, by T. W. Holland and C. A. Manning. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 8 p. (NC, Da, M, Wb.)

OF 93-0429. ARKANSAS. Summary of reported agriculture and irrigation water use in Drew County, Arkansas, 1991, by T. W. Holland and C. A. Manning. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 8 p. (NC, Da, M, Wb.)

OF 93-0430. ARKANSAS. Summary of reported agriculture and irrigation water use in Greene County, Arkansas, 1991, by T. W. Holland, C. A. Manning and K. L. Stafford. Prepared in cooperation with Arkansas Soil and Water Conservation Commission. 1993. 8 p. (NC, Da, M, Wb.)

OF 93-0431. ARKANSAS. Summary of reported agriculture and irrigation water use in Independence County, Arkansas, 1991, by T. W. Holland, C. A. Manning and K. L. Stafford. Prepared

in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 8 p. (NC, Da, M, Wb.)

OF 93-0432. ARKANSAS. Summary of reported agriculture and irrigation water use in Jackson County, Arkansas, 1991, by T. W. Holland, C. A. Manning and K. L. Stafford. Prepared in cooperation with the Arkansas Soil and Water Conservation Commission. 1993. 8 p. (NC, Da, M, Wb.)

OF 93-0501. Physical environment of the underground nuclear test site on Novaya Zemlya, Russia, by J. R. Matzko. 1993. 28 p. (NC, Da, M.)

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OF 93-0505. MONTANA. Geochemical data for selected rock samples from the Absaroka-Beartooth Study Area, Custer and Gallatin national forests, Montana, by J. M. Hammarstrom and K. J. Gray. 1993. 33 p. (NC, Da, M, U, S; Montana Bur. of Mines and Geol., Montana Coll. of Mineral Sci. and Technol., Butte, MT 59701.)

OF 93-0506. CALIFORNIA, NEVADA. Geologic mapping index to the Death Valley National Monument area, California and Nevada, by S. P. Schilling and R. A. Thompson. 1993. 51 p. (NC, Da, M, U; 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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0508-A. ALASKA. Principal facts for gravity stations on Annette Island, Southeast Alaska, by K. R. Bond. 1993. 12 p. (NC, Da, M, A, S; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513.)

OF 93-0508-B. ALASKA. Principal facts for gravity stations on Annette Island, Southeast Alaska, by K. R. Bond. 1993. One 5 1/4 inch DS/HD IBM compatible diskette. (NC, Da, M, A, S; Alaska Dep. of Natural Resources, Div. of Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709-3645; U.S. Dep. of the Interior, Alaska Resource Library, 701 C St., Box 36, Anchorage, AK 99513.)

OF 93-0509. Estimation of response spectra and peak accelerations from western North America earthquakes; an interim report, by D. M. Boore, W. B. Joyner and T. E. Fumal. 1993. 72 p. (NC, Da, M.)

OF 93-0511. System 9, GSMAP, and other programs for the IBM PC and compatible microcomputers, to assist workers in the earth sciences, by G. I. Selner and R. B. Taylor. 1993. 372 p., 2 over-size sheets, two 3 1/2 inch diskettes. (NC, Da, M.) (Supersedes OF 92-217-A,B.)

OF 93-0512-A. HAWAII. Annotated bibliography; volcanology and volcanic activity with a primary focus on potential hazard impacts for the Hawaii Geothermal Project, by R. B. Moore, P. T. Delaney and J. P. Kauahikaua. 1993. 10 p. (NC, Da, M; Div. of Water and Land Dev., P.O. Box 373, Honolulu, HI 96809.)

OF 93-0513. USGS Permo-Carboniferous fossil locality register; Part 1, Introduction to PC-FILES, by T. W. Henry, O. B. Williams and P. A. Holroyd. 1993. 38 p. (NC, Da, M.)

OF 93-0515. Modern benthic foraminifer census data from box-cores collected on Northwind Ridge, Arctic Ocean during the PI-92-AR cruise of the U.S.C.G.C. Polar Star, by K. M. Foley and S. E. Ishman. 1993. 9 p. (NC, Da, M.)

OF 93-0516. The Venus geologic mappers' handbook, by K. L. Tanaka, G. G. Schaber, M. G. Chapman, E. R. Stofan, D. B. Campbell, P. A. Davis, J. E. Guest, G. E. McGill, P. G. Rogers, R. S. Saunders and J. R. Zimbelman. 1993. 54 p. (NC, Da, M.)

OF 93-0519. NEVADA. Geologic map of the northern part of the Simpson Park Mountains (Rocky Hills and western part of the Pete Hanson Creek quadrangles), Eureka County, Nevada, by E. H. McKee and J. E. Conrad. 1993. 7 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada, Reno, NV 89557.)

OF 93-0522. TEXAS, NEW MEXICO. Petroleum exploration plays and resource estimates, 1989, onshore United States; Region 5, West Texas and eastern New Mexico, edited by R. B. Powers. 1993. 84 p. (NC, Da, M, U; Bur. of Econ. Geol., Univ. of Texas at Austin, University Station, Box X, Austin, TX 78713-75; New Mexico Bur. of Mines and Mineral Resources, Campus Station, Socorro, NM 87801.)

Introduction, by R. B. Powers. p. 1-8.

Geologic framework, by R. B. Powers. p. 9-10.

Permian Basin (107), by Keith Robinson. p. 11-42.

Palo Duro Basin (108), by M. E. Henry. p. 43-56.

Pedernal Uplift (109), by M. E. Henry. p. 57-58.

Bend Arch-Fort Worth Basin (110), by M. M. Ball. p. 59-76.

Marathon fold belt (111), by M. E. Henry. p. 77-81.

OF 93-0524. CALIFORNIA. A study of seawater intrusion using direct-current soundings in the southeastern part of the Oxnard Plain, California, by A. A. Zohdy, P. M. Martin and R. J. Bisdorf. 1993. 139 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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0525. CALIFORNIA. Preliminary geologic map of the Oat Mountain 7.5′ Quadrangle, Southern California, by R. F. Yerkes and R. H. Campbell. 1993. 13 p., 1 over-size sheet, scale 1:24,000 (1 inch = 2,000 feet). (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 3600, San Francisco, CA 94107-1728; and State Office Bldg., 107 South Broadway, Los Angeles, CA 90012.)

OF 93-0526. The generation of raster-format geologic maps using digital image-processing on the Macintosh computer; a tutorial guide, by C. D. Condit and A. V. Acosta. 1993. 63 p., two 3 1/2 inch DS/HD diskettes. (NC, Da, M.)

Requirements to use the tutorial: any Macintosh with an 8-bit (256) color monitor and 8MB of RAM, a 20-MB hard disk, and

Macintosh System 7.0.0 or higher. A high density disk drive is needed to read the diskettes; the tutorial guide (in MS Word 5.1 format) is included as one of the SEA text files.

OF 93-0527. IDAHO. Gold analyses of 881 stream sediment samples from the western Payette National Forest and contiguous areas, Idaho, by J. B. McHugh, K. C. Watts, Jr., H. N. Barton and H. D. King. 1993. 21 p., one 5 1/4 inch DS/HD diskette. (NC, Da, M, U, S; Idaho Geol. Surv., Univ. of Idaho Campus, Morrill Hall, Room 332, Moscow, ID 83843.)

Requirements: IBM AT, PS/2, or fully compatible computer (80286 and higher); DOS 2.0 or later; at least 512K of RAM (640K recommended); hard disc with at least 6MB of space available; CGA or VGA graphics board.

OF 93-0533. USGS Branch of Geochemistry, sample submittal manual, fourth edition, by C. M. Murphy, R. V. Mendes and S. T. Smith. 1993. 38 p. (NC, Da, M.)

OF 93-0536. GSMDATUM and GSPDATUM, programs for DOS microcomputers to convert data in GSMAP or GSPOST format between the NAD 27 and NAD 83 coordinate systems, by G. I. Selner and R. B. Taylor. 1993. 3 p., three 3 1/2 inch IBM compatible DS/HD computer diskettes. (NC, Da, M.)

OF 93-0538. NEVADA. New radiometric ages related to alteration and mineralization in the vicinity of Yucca Mountain, Nye County, Nevada, by E. H. McKee and J. R. Bergquist. 1993. 28 p., 1 over-size sheet. (NC, Da, M, U; Nevada Bur. of Mines and Geol., Univ. of Nevada, Reno, NV 89557.)

OF 93-0543. Preliminary map showing the thickness and character of Quaternary sediments in the United States east of the Rocky Mountains, by D. R. Soller. 1993. 1 over-size sheet, scale 1:3,500,000 (1 inch = about 55 miles). (NC, Da, M.)

OF 93-0546. SLOPE; A BASIC program to compute the gravitational stress within a finite slope using a DOS-based PC computer, by P. S. Powers and W. Z. Savage. 1993. 28 p., one 3 1/2 inch DS/DD IBM compatible diskette. (NC, Da, M.)

Requirements to run the executable: IBM PC or compatible; DOS 3.X or above; 640K RAM; math coprocessor, and a text editor. One 3 1/2 inch diskette, 720K.

OF 93-0549. KANSAS. USGS Permo-Carboniferous fossil locality register; Part 2, Kansas PC-FILES, by T. W. Henry and P. A. Holroyd. 1993. 124 p., one 5 1/4 inch DS/HD diskette. (NC, Da, M; Kansas Geol. Surv., Univ. of Kansas, 1930 Constant Ave., Campus West, Lawrence, KS 66047-2598; Univ. of Kansas, Dep. of Geol., Lawrence, KS 66045; Kansas State Univ., Dep. of Geol., Manhattan, KS 66506.)

The software for accessing the records for KSPCFILE.dbf is dBASE IV.

OF 93-0573-B. MAINE. Total-field aeromagnetic map of part of northern Maine, by K. R. Bond. 1993. One 5 1/4 inch diskette. (NC, Da, M.)

The digital data are in ASCII format on a 5 1/4 inch IBM-compatible floppy disk.

OF 93-0575. Computer programs released as U.S. Geological Survey publications through June 1993, by J. M. McGurk, R. C. Orndorff, K. A. Dodd, G. B. Gunnells and Yula Sakss. 1993. One 3 1/2 inch diskette. (NC, Da, M.)

Requirements to search this data base are IBM PC or compatible computer, 3 1/2 inch disk drive, and a minimum of 512K RAM.

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 92-0533. CALIFORNIA. Southern California earthquakes, by S. K. Goter. 1992. 1 p., 1 over-size sheet, scale 1:375,000 (1 inch = about 6 miles). (NC, Da, M; California Dep. of Conservation, Div. of Mines and Geol., Mail Stop 14-34, Library, 801 K St., Sacramento, CA 95814-3532; 1145 Market St., 3rd Floor, San Francisco, CA 94103; and State Office Building, 107 South Broadway, Los Angeles, CA 90012.) †Susan Goter, USGS, Box 25046, Denver Federal Ctr., Mail Stop 967, Denver, CO 80225; telephone 303-273-8477.

OF 93-0113. NORTH CAROLINA. U.S. Geological Survey; North Carolina's water resources; a partnership with State, Federal, and local agencies, by M. D. Winner, Jr. 1993. 8 p. (NC, Da, M, Wb.) †USGS, WRD, 3916 Sunset Ridge Rd., Raleigh, NC 27607; telephone 919-571-4000.

THEMATIC MAPS AND CHARTS

GEOLOGIC QUADRANGLE MAPS

Multicolor geologic maps on topographic bases in 7 1/2- or 15-minute quadrangle units; scales mainly 1:24,000 or 1:62,500; show bedrock, surficial, or engineering geology. Maps are accompanied by brief texts and some maps by structure and columnar sections also.

GQ-1679. WASHINGTON. Geologic map of the Spirit Lake East Quadrangle, Skamania County, Washington, by R. C. Evarts and R. P. Ashley. Prepared in cooperation with the Washington Department of Natural Resources Geology and Earth Resources Division. 1993. Lat 46°15′ to 46°22′30″, long 117°15′ to 122°07′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 41 by 32 inches (in color). (Accompanied by 12-page text.)

GQ-1688. ALASKA. Geologic map of the Nabesna B-6 Quadrangle, south-central Alaska, by D. H. Richter, J. G. Smith, H. R. Schmoll and R. L. Smith. 1993. Lat 62°15′ to 62°30′, long 143°30′ to 144°. Scale 1:63,360 (1 inch = 1 mile). Sheet 43 by 29 1/2 inches (in color).

GQ-1705. GEORGIA. Geologic map of the Dahlonega Quadrangle, Lumpkin and White counties, Georgia, by A. E. Nelson. 1992. Lat 34°30′ to 34°37′30″, long 83°52′30″ to 84°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 45 by 38 inches (in color).

GQ-1707. NEW JERSEY. Bedrock geologic map of the Newton East Quadrangle, Sussex County, New Jersey, by A. A. Drake, Jr., U.S. Geological Survey; and R. A. Volkert, New Jersey Geological Survey. Prepared in cooperation with the New Jersey Geological Survey. 1993. Lat 41° to 41°07′30″, long 74°37′30″ to 74°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 42 by 41 inches (in color).

GQ-1712. UTAH. Geologic map of the Parowan Gap Quadrangle, Iron County, Utah, by Florian Maldonado and V. S. Williams. 1993. Lat 37°52′30″ to 38°, long 112°52′30″ to 113°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 42 by 31 inches (in color).

GQ-1713. UTAH. Geologic map of the Paragonah Quadrangle, Iron County, Utah, by Florian Maldonado and V. S. Williams. 1993. Lat 37°52′30″ to 38°, long 112°45′ to 112°52′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 37 by 28 inches (in color).

GQ-1714. NEVADA. Geologic map of the Weiser Ridge Quadrangle, Clark County, Nevada, by R. G. Bohannon. 1992. Lat 36°30′ to 36°37′30″, long 114°30′ to 114°37′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 42 1/2 by 32 inches (in color.)

GQ-1716. NEW MEXICO. Geologic map of the Casamero Lake Quadrangle, McKinley County, New Mexico, by J. F. Robertson. 1993. Lat 35°30′ to 35°37′30″, long 108° to 108°07′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 44 by 34 inches (in color). (Supersedes Open-file report 76-681.)

GQ-1721. UTAH, NEVADA. Geologic map of the Dodge Spring Quadrangle, Washington County, Utah, and Lincoln County, Nevada, by R. E. Anderson and L. F. Hintze. 1993. Lat 37°15′ to 37°22′30″, long 114° to 114°07′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 45 by 34 inches (in color).

GQ-1724. MONTANA. Geologic map of the Medicine Lodge Peak Quadrangle, Beaverhead County, Southwest Montana, by J. W. M'Gonigle. 1993. Lat 44°45′ to 44°52′30″, long 113° to 113°07′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 50 by 34 inches (in color.)

GQ-1729. MONTANA. Geologic map of the Ennis Lake Quadrangle, Madison County, Montana, by K. S. Kellogg. 1993. Lat 45°22′30″ to 45°30′, long 111°37′30″ to 111°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 40 by 31 inches (in color).

GQ-1730. NEVADA. Geologic map of the Delamar Lake Quadrangle, Lincoln County, Nevada, by R. B. Scott, W C Swadley, U.S. Geological Survey; and S. W. Novak, Charles Evan & Associates. 1993. Lat 37°15′ to 37°22′30″, long 114°52′30″ to 115°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 42 by 40 inches (in color).

GEOPHYSICAL INVESTIGATIONS MAPS

Maps on topographic or planimetric bases; various scales; show results of surveys using geophysical techniques, such as gravity, magnetic, seismic, or radioactivity, which reflect subsurface structures that are of economic or geologic significance. Many maps are correlated with the geology.

GP-1003-A. NEVADA. Electromagnetic survey maps showing apparent resistivity of the Getchell gold trend, Osgood Mountains, north-central Nevada, by W. S. Wojniak, D. B. Hoover and V. J. Grauch. 1993. Three sheets. Lat 40°45′ to 41°15′, long 117°15′ to 117°30′. Each sheet, Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 1, 57 by 40 inches; sheets 2-3, 57 by 36 inches (all in color).

GP-1004-D. The magnetic field of the Earth, 1990; declination chart, by N. W. Peddie. 1993. Scale 1:40,053,700 (along equator only). Sheet 48 by 34 inches (in color). (Van der Grinten projection.) (Available flat only.) (Supersedes GP-987-D.)

GP-1004-F. The magnetic field of the Earth, 1990; total intensity chart, by N. W. Peddie. 1993. Scale 1:40,053,700 (along equator only). Sheet 48 by 34 inches (in color). (Van der Grinten projection.) (Available flat only.) (Supersedes GP-987-F.)

GP-1004-H. The magnetic field of the Earth, 1990; horizontal intensity chart, by N. W. Peddie. 1993. Scale 1:40,053,700 (along equator only). Sheet 48 by 34 inches (in color). (Van der Grinten projection.) (Available flat only.) (Supersedes GP-987-H.)

GP-1004-I. The magnetic field of the Earth, 1990; inclination chart, by N. W. Peddie. 1993. Scale 1:40,053,700 (along equator only). Sheet 48 by 34 inches (in color). (Van der Grinten projection.) (Available flat only.) (Supersedes GP-987-I.)

GP-1004-Z. The magnetic field of the Earth, 1990; vertical intensity chart, by N. W. Peddie. 1993. Scale 1:40,053,700 (along equator only). Sheet 48 by 34 inches (in color). (Van der Grinten projection.) (Available flat only.) (Supersedes GP-987-Z.)

MISCELLANEOUS INVESTIGATIONS SERIES MAPS

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-1257-M. CALIFORNIA. Map of debris-flow probability, San Mateo County, California, by R. K. Mark. 1992. Two sheets. Sheet 1, Lat 37°06′ to 37°43′, long 122°04′30″ to 122°33′15″. Sheet 1, Scale 1:62,500 (1 inch = about 1 mile). Each sheet 40 1/2 by 48 inches (all in color).

I-1797-D. UTAH, COLORADO. Stratigraphic cross section of Cretaceous rocks along the north flank of the Uinta Basin, northeastern Utah, to Rangely, northwestern Colorado, by C. M. Molenaar and B. W. Wilson. 1993. Sheet 40 by 30 inches (in color).

I-1803-H. IDAHO, MONTANA. Geologic map of the Dillon 1° × 2° Quadrangle, Idaho and Montana, by E. T. Ruppel, J. M. O'Neill and D. A. Lopez. 1993. Lat 45° to 46°, long 112° to 114°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 50 by 41 inches (in color).

I-1935. SOUTH CAROLINA. Geology of the Cainhoy, Charleston, Fort Moultrie, and North Charleston quadrangles, Charleston and Berkeley counties, South Carolina, by R. E. Weems and E. M. Lemon, Jr. Prepared in cooperation with the U.S. Nuclear Regulatory Commission. 1993. Two sheets. Lat 32°45′ to 33°; long 79°45′ to 80°. Sheet 1, Scale 1:24,000 (1 inch = 2,000 feet); sheet 2, scale 1:62,500 (1 inch = about 1 mile). Sheet 1, 41 by 56 inches; sheet 2, 41 by 50 inches (all in color).

I-1943. CALIFORNIA. Geologic maps of upper Cenozoic deposits in Central California, by J. L. Chin, J. R. Morrow, C. R. Ross and H. E. Clifton. 1993. Three sheets. Sheet 1, lat 38° to 39°, long 122°15′ to 124°; sheet 2, lat 37° to 38°, long 120°30′ to 122°45′; sheet 3, lat 36° to 37°, long 120° to 122°12′. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 51 by 27 inches; sheets 2-3, 47 by 27 inches (all in color).

I-1946. WASHINGTON. Geologic map of the Cape Flattery, Clallam Bay, Ozette Lake, and Lake Pleasant quadrangles, northwestern Olympic Peninsula, Washington, by P. D. Snavely, Jr., N. S. MacLeod, and A. R. Niem; with major contributions by D. L. Minasian, J. E. Pearl, and W. W. Rau. 1993. Lat 48° to 48°25′, long 124°15′ to 124°45′. Scale 1:48,000 (1 inch = 4,000 feet). Sheet 42 by 56 inches (in color). (Supersedes Open-file report 86-344-B.)

I-1963. WASHINGTON. Geologic map of the Skykomish River 30- by 60-minute Quadrangle, Washington, by R. W. Tabor, V.

A. Frizzell, Jr., D. B. Booth, R. B. Waitt, J. T. Whetten and R. E. Zartman. 1993. Lat 47°30′ to 48°, long 121° to 122°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 54 by 41 inches (in color). (Accompanied by 42-page text.) (Supersedes Open-file report 82-747.)

I-1984. ALASKA. Geologic map of the Cordova and Middleton Island quadrangles, Southern Alaska, by G. R. Winkler and George Plafker. 1993. Lat 59°45′ to 61°, long 144° to 147°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 51 by 39 inches (in color). (Supersedes Open-file report 81-1164.)

I-1995. CALIFORNIA. Geologic map of Glass Mountain, Mono County, California, by J. M. Metz and R. A. Bailey. 1993. Lat 37°43′ to 37°50′, long 118°40′ to 118°49′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 58 by 41 inches (in color).

I-2003. NEW YORK. Bedrock and engineering geologic maps of Bronx County and parts of New York and Queens counties, New York, by C. A. Baskerville. 1992. Two sheets. Each sheet, lat 40°45′ to 40°55′, long 73°45′ to 73°57′30″. Each sheet, scale 1:24,000 (1 inch = 2,000 feet). Sheet 1, 54 by 41 inches; sheet 2, 54 by 37 inches (all in color).

I-2005. WASHINGTON. Geologic map of upper Eocene to Holocene volcanic and related rocks in the Cascade Range, Washington, by J. G. Smith. 1993. Two sheets. Sheet 1, lat 45°30′ to 49°, long 120° to 123°; sheet 2, lat 45° to 49°, long 120° to 123°. Sheet 1, scale 1:500,000 (1 inch = about 8 miles). Sheet 1, 44 by 37 inches; sheet 2, 28 by 40 inches (all in color). (Accompanied by 19-page text.)

I-2032. ALASKA. Quaternary geologic map of the Mount Katmai Quadrangle and adjacent parts of the Naknek and Afognak quadrangles, Alaska, by J. R. Riehle and R. L. Detterman. 1993. Lat 58° to 59°, long 153° to 158°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 48 by 36 inches (in color).

I-2050-F. MONTANA. Maps showing mineral resource assessment for porphyry and stockwork deposits of copper, molybdenum, and tungsten and for stockwork and disseminated deposits of gold and silver in the Butte 1° × 2° Quadrangle, Montana, by J. E. Elliott, C. A. Wallace, G. K. Lee, J. C. Antweiler, D. J. Lidke, L. C. Rowan, W. F. Hanna, C. M. Trautwein, J. L. Dwyer and S. H. Moll. 1993. Three sheets. Lat 46° to 47°, long 112° to 114°. Sheet 1, scale 1:250,000 (1 inch = about 4 miles); sheets 2-3, scale 1:500,000 (1 inch = about 8 miles). Sheet 1, 30 by 50 inches; sheets 2-3, 48 by 36 inches (all in color). (Accompanied by 30-page text.)

I-2089-C. Map showing bottom topography of the Pacific continental margin, Point Conception to Point Loma, by T. E. Chase, U.S. Geological Survey; Pat Wilde, University of California at Berkeley; W. R. Normark, G. I. Evenden, C. P. Miller, B. A. Seekins, J. D. Young, M. S. Grim and C. J. Lief, U.S. Geological Survey. Prepared in cooperation with the U.S. Geological Survey and National Oceanic and Atmospheric Administration Joint Office for Mapping and Research. 1992. Lat 30°N to 35°N, long 117°W to 126°W. Scale 1:1,000,000 (1 inch = about 4 miles). Sheet 42 by 29 inches (in color). (Supersedes Open-file report 81-443.)

I-2090-A. Map showing sediment isopachs in the deep-sea basins of the Pacific continental margin, Cape Mendocino to Point Conception, by J. V. Gardner, D. A. Cacchione, D. E. Drake, B. D. Edwards, M. E. Field, M. A. Hampton, H. A. Karl, U.S. Geological Survey; N. H. Kenyon, D. G. Masson, Institute of Oceanographic Sciences, England; D. S. McCulloch, and M. S. Grim, U.S. Geological Survey. Prepared in cooperation with the U.S. Geological Survey–National Oceanic and Atmospheric Administration Joint Office for Mapping and Research. 1993. Lat 34°N to 41°N, long 117°W to 129°W. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 56 by 38 inches (in color).

I-2090-B. Map showing depth to basement in the deep-sea basins of the Pacific continental margin, Cape Mendocino to Point Conception, by J. V. Gardner, D. A. Cacchione, D. E. Drake, B. D. Edwards, M. E. Field, M. A. Hampton, H. A. Karl, U.S. Geological Survey; N. H. Kenyon, D. G. Masson, Institute of Oceanographic Sciences, England; D. S. McCulloch, and M. S. Grim, U.S. Geological Survey. Prepared in cooperation with the U.S. Geological Survey–National Oceanic and Atmospheric Administration Joint Office for Mapping and Research. 1993. Lat 34°N to 41°N, long 117°W to 129°W. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 56 by 38 inches (in color).

I-2090-C. Map showing bottom topography of the Pacific continental margin, Cape Mendocino to Point Conception, by T. E. Chase, U.S. Geological Survey; Pat Wilde, University of California at Berkeley; W. R. Normark, G. I. Evenden, C. P. Miller, B. A. Seekins, J. D. Young, M. S. Grim, and C. J. Lief, U.S. Geological Survey. 1992. Lat 34°N to 41°N, long 117°W to 129°W. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 52 by 36 inches (in color).

I-2091-C. Map showing bottom topography of the Pacific continental margin, Strait of Juan de Fuca to Cape Mendocino, by M. S. Grim, T. E. Chase, G. I. Evenden, M. L. Holmes, W. R. Normark, U.S. Geological Survey; Pat Wilde, University of California at Berkeley; C. J. Fox, NOAA, Pacific Marine Environmental Laboratory; C. J. Lief and B. A. Seekins, U.S. Geological Survey. Prepared in cooperation with the U.S. Geological Survey-National Oceanic and Atmospheric Administration Joint Office for Mapping and Research. 1992. Lat 40°N to 49°N, long 122°W to 132°W. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 41 by 46 inches (in color).

I-2150-A. LOUISIANA. Louisiana barrier island erosion study; atlas of shoreline changes in Louisiana from 1853-1989, edited by S. J. Williams, U.S. Geological Survey; Shea Penland, Louisiana Geological Survey; and A. H. Sallenger, Jr., U.S. Geological Survey. 1992. 103 p. spiral bound, 24 inches by 19 inches (in color).

I-2164. ALASKA. Geologic map of the Valdez A-4, B-3, B-4, C-3, C-4, and D-4 quadrangles, northern Chugach Mountains and southern Copper River basin, Alaska, by George Plafker, J. S. Lull, W. J. Nokleberg, G. H. Pessel, W. K. Wallace and G. R. Winkler. 1992. Lat 61° to 62°, long 144°45′ to 145°30′. Scale 1:125,000 (1 inch = about 2 miles). Sheet 49 by 40 inches (in color).

I-2168. WYOMING. Geologic map of the Evanston 30′ × 60′ Quadrangle, Uinta and Sweetwater counties, Wyoming, by J. H. Dover and J. W. McGonigle. 1993. Lat 41° to 41°30′, long 110° to 111°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 56 by 31 1/2 inches (in color).

I-2173. NEVADA. Geologic map of the Meadow Valley Mountains, Lincoln and Clark counties, Nevada, by E. H. Pampeyan. 1993. Two sheets. Sheet 1, lat 37° to 37°15′, long 114°30′ to

114°45′; sheet 2, lat 36°45′ to 37°, long 114°37′30″ to 114°56′″. Each sheet, scale 1:50,000 (1 inch = about 4,200 feet). Sheet 1, 57 by 36 inches (in color); sheet 2, 30 by 36 inches. (Accompanied by 19-page text.) (Supersedes Open-file report 89-182.)

I-2198. ARIZONA. Geological map of the Poachie Range, Mohave and Yavapai counties, Arizona, by B. H. Bryant. 1992. Lat 34°22′30″ to 34°30′, long 113°15′ to 113°37′30″. Scale 1:25,000 (1 inch = about 2,083 feet). Sheet 56 by 41 inches (in color). (Supersedes Open-file report 88-390.)

I-2199. UTAH. Surficial geologic map of the Weber Segment, Wasatch fault zone, Weber and Davis counties, Utah, by A. R. Nelson and S. F. Personius. 1993. Lat 40°50′ to 41°21′02″, long 111°50′ to 111°58′05″. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 37 1/2 by 51 inches (in color). (Accompanied by 22-page text.)

I-2206. Landforms of the conterminous United States; a digital shaded-relief portrayal, by G. P. Thelin and R. J. Pike. 1991 (1992). Scale 1:3,500,000 (1 inch = about 55 miles). Sheet 55 by 35 1/2 inches. (Accompanied by 16-page text.) (Reprint.)

I-2208. Geologic map of the MTM 25057 and 25052 quadrangles, Kasei Valles region of Mars, by D. H. Scott. Prepared for the National Aeronautics and Space Administration. 1993. Lat 22.5° to 27.5°, long 50° to 60°. Scale 1:502,000 (1 mm = 502 m) at 50° long. Sheet 56 by 41 inches (in color). (Transverse Mercator projection.)

I-2209. Geologic map of Io, by D. A. Crown, Ronald Greeley, R. A. Craddock and G. G. Schaber. Prepared for the National Aeronautics and Space Administration. 1992. The whole satellite. Scale 1:15,000,000 (1 mm = 15 km) at 0° lat. Sheet 49 by 35 inches (in color). (Mercator projection.)

I-2232. WYOMING. Geologic map of the Esterbrook-Braae area, Albany, Converse, and Platte counties, Wyoming, by G. L. Snyder, U.S. Geological Survey; *with a section on* Economic geology of base and precious metals, by C. S. Bow, Lakewood, CO. 1993. Lat 42°22′30″ to 42°32′30″, long 105°15′ to 105°30′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 58 by 41 inches (in color).

I-2266. NEW MEXICO, COLORADO. Geologic and structure-contour map of the Raton 30′ × 60′ Quadrangle, Colfax and Union counties, New Mexico, and Las Animas County, Colorado, by G. R. Scott and C. L. Pillmore. 1993. Lat 36°30′ to 37°, long 104° to 105°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 54 by 39 inches (in color).

I-2267. MONTANA. Geologic and structure maps of the Kalispell 1° × 2° Quadrangle, Montana, and Alberta and British Columbia, by J. E. Harrison, E. R. Cressman and J. W. Whipple. 1992. Two sheets. Lat 48° to 49°, long 114° to 116°. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 58 by 41 inches; sheet 2, 40 by 28 inches (all in color). (Supercedes Open-file report 83-502)

I-2274. HAWAII. Geologic map of Hilo 7 1/2′ Quadrangle, Island of Hawaii, by J. M. Buchanan-Banks. 1993. Lat 19°37′30″ to 19°45′, long 115° to 115°07′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 46 by 40 inches (in color). (Accompanied by 17-page text.)

I-2276. Shaded relief and surface markings map and shaded relief map of the lunar near side. Prepared for the National Aeronautics and Space Administration. 1992. Two sheets. Lat 50°S to 50°N, long 100°E to 100°W. Each sheet, scale 1:5,000,000 (1 mm = 5 km at 34° lat. Each sheet 42 by 30 1/2 inches (in color). (Mercator projection.)

I-2279-A. Maps showing the sea-floor topography of eastern Georges Bank, by P. C. Valentine, E. W. Strom and C. L. Brown. Prepared in cooperation with the National Marine Fisheries Service. 1992. Lat 41°15′N to 42°N, long 65°45′W to 67°30′W. Scale 1:250,000 (1 inch = about 4 miles). Sheet 44 by 32 inches (in color).

I-2279-B. Maps showing the sedimentary environment of eastern Georges Bank, by P. C. Valentine, E. W. Strom, U.S. Geological Survey; R. G. Lough, National Marine Fisheries Service; and C. L. Brown, U.S. Geological Survey. Prepared in cooperation with the National Marine Fisheries Service. 1993. Lat 41°15′N to 42°N, long 65°45′W to 67°30′W. Scale 1:250,000 (1 inch = about 4 miles). Sheet 45 by 37 inches (in color).

I-2287. Geologic map and structure sections of the Sierra Juárez, Chihuahua, Mexico, by H. D. Drewes and Russ Dyer. 1993. Two sheets. Sheet 1, Lat 31°40′ to 31°37′30″, long 106°27′30″ to 106°37′30″. Sheet 1, scale approximately 1:12,500 (1 inch = 1,042 feet). Sheet 1, 40 by 56 inches; sheet 2, 52 by 39 inches (all in color).

I-2290. ARIZONA. Geologic map of the Jumpup Canyon and Big Springs quadrangles, Mohave and Coconino counties, Arizona, by G. H. Billingsley. 1992. Lat 36°30′ to 36°45′, long 112°15′ to 112°45′. Scale 1:62,500 (1 inch = about 1 mile). Sheet 53 by 31 inches (in color).

I-2291-A. ARIZONA, NEW MEXICO, TEXAS. Maps showing distribution, composition, and age of early and middle Cenozoic volcanic centers in Arizona, New Mexico, and West Texas, by R. G. Luedke. 1993. Two sheets. Lat 30° to 37°, long 102° to 114°. Each sheet, scale 1:1,000,000 (1 inch = about 16 miles). Sheet 1, 50 by 39 inches; sheet 2, 50 by 40 inches (all in color). (Accompanied by 16-page text.)

I-2299. IDAHO. Geologic map of the Slate Creek-John Day Creek area, Idaho County, Idaho, by Karen Lund, U.S. Geological Survey; W. F. McCollough, Polytech, Inc.; and E. H. Price, CER Corp. 1993. Lat 45°30′ to 45°45′, long 116° to 116°22′30″. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 50 by 32 inches (in color).

I-2311. Controlled photomosaic of the MTM 20032 Quadrangle, Ares-Maja Valles region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 17.5° to 22.5°, long 30° to 35°. Scale 1:502,000 (1 mm = 502 m) at 30° long. Sheet 26 by 37 inches. (Transverse Mercator projection.)

I-2312. Controlled photomosaic of the MTM 25032 Quadrangle, Ares-Maja Valles region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 22.5° to 27.5°, long 30° to 35°. Scale 1:502,000 (1 mm = 502 m) at 30° long. Sheet 25 by 37 inches. (Transverse Mercator projection.)

I-2313. Controlled photomosaic of the MTM 25037 Quadrangle, Ares-Maja Valles region of Maps. Prepared for the National Aeronautics and Space Administration. 1993. Lat 22.5° to 27.5°, long 35° to 40°. Scale 1:502,000 (1 mm = 502 m) at 30° long. Sheet 25 by 37 inches. (Transverse Mercator projection.)

I-2314. Controlled photomosaic of the MTM 20037 Quadrangle, Ares-Maja Valles region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 17.5° to 22.5°, long 35° to 40°. Scale 1:502,000 (1 mm = 502 m) at 30° long. Sheet 26 by 37 inches. (Transverse Mercator projection.)

I-2315. Controlled photomosaic of the MTM 25042 Quadrangle, Ares-Maja Valles region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 22.5° to 27.5°, long 40° to 45°. Scale 1:502,000 (1 mm = 502 m) at 50° long. Sheet 25 by 37 inches. (Transverse Mercator projection.)

I-2316. Controlled photomosaic of the MTM 45162 Quadrangle, Arcadia Planitia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 42.5° to 47.5°, long 160° to 165°. Scale 1:502,000 (1 mm = 502 m) at 170° long. Sheet 21 by 37 inches. (Transverse Mercator projection.)

I-2317. Controlled photomosaic of the MTM 45167 Quadrangle, Arcadia Planitia region of Mars. 1993. Lat 42.5° to 47.5°, long 165° to 170°. Scale 1:502,000 (1 mm = 502 m) at 170° long. Sheet 21 by 37 inches. (Transverse Mercator projection.)

I-2318. Controlled photomosaic of the MTM 45172 Quadrangle, Arcadia Planitia region of Mars. Prepared for the National Aeronautics and Space Adiministration. 1993. Lat 42.5° to 47.5°, long 170° to 175°. Scale 1:502,000 (1 mm = 502 m) at 170° long. Sheet 21 by 37 inches. (Transverse Mercator projection.)

I-2319. Controlled photomosaic of the MTM 45177 Quadrangle, Arcadia Planitia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 42.5° to 47.5°, long 175° to 180°. Scale 1:502,000 (1 mm = 502 m) at 170° long. Sheet 21 by 37 inches. (Transverse Mercator projection.)

I-2320. Controlled photomosaic of the MTM 40137 Quadrangle, Acheron Fossae region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 37.5° to 42.5°, long 135° to 140°. Scale 1:502,000 (1 mm = 502 m) at 130° long. Sheet 22 by 37 inches. (Transverse Mercator projection.)

I-2321. Controlled photomosaic of the MTM 40142 Quadrangle, Acheron Fossae region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 37.5° to 42.5°, long 140° to 145°. Scale 1:502,000 (1 mm = 502 m) at 150° long. Sheet 22 by 37 inches. (Transverse Mercator projection.)

I-2322. Controlled photomosaic of the MTM 35142 Quadrangle, Acheron Fossae region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 32.5° to 37.5°, long 140° to 145°. Scale 1:502,000 (1 mm = 502 m) at 150° long. Sheet 23 1/2 by 37 inches. (Transverse Mercator projection.)

I-2323. Controlled photomosaic of the MTM 35137 Quadrangle, Acheron Fossae region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 32.5° to 37.5°, long 135° to 140°. Scale 1:502,000 (1 mm = 502 m) at 130° long. Sheet 23 1/2 by 37 inches. (Transverse Mercator projection.)

I-2324. Controlled photomosaic of the MTM 35132 Quadrangle, Acheron Fossae region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 32.5° to 37.5°, long 130° to 135°. Scale 1:502,000 (1 mm = 502 m) at 130° long. Sheet 23 1/2 by 37 inches. (Transverse Mercator projection.)

I-2325. Controlled photomosaic of the MTM 40132 Quadrangle, Acheron Fossae region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 37.5° to 42.5°, long 130° to 135°. Scale 1:502,000 (1 mm = 502 m) at 130° long. Sheet 22 by 37 inches. (Transverse Mercator projection.)

I-2332. Controlled photomosaic of the MTM -35307 Quadrangle, western Hellas Planitia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat -37.5 to -32.5°, long 305° to 310°. Scale 1:502,000 (1 mm = 502 m) at 310° long. Sheet 23 by 38 inches. (Transverse Mercator projection.)

I-2333. Controlled photomosaic of the MTM -35312 Quadrangle, western Hellas Planitia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat -37.5° to -32.5°, long 310° to 315°. Scale 1:502,000 (1 mm = 502 m) at 310° long. Sheet 23 by 38 inches. (Transverse Mercator projection.)

I-2334. Controlled photomosaic of the MTM -40302 Quadrangle, western Hellas Planitia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat -42.5° to -37.5°, long 300° to 305°. Scale 1:502,000 (1 mm = 502 m) at 310° long. Sheet 22 by 38 inches. (Transverse Mercator projection.)

I-2335. Controlled photomosaic of the MTM -40307 Quadrangle, western Hellas Planitia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat -42.5° to -37.5°, long 305° to 310°. Scale 1:502,000 (1 mm = 502 m) at 310° long. Sheet 22 by 37 inches. (Transverse Mercator projection.)

I-2336. Controlled photomosaic of the MTM -40312 Quadrangle, western Hellas Planitia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat -42.5° to -37.5°, long 310° to 315°. Scale 1:502,000 (1 mm = 502 m) at 310° long. Sheet 22 by 38 inches. (Transverse Mercator projection.)

I-2337. Controlled photomosaic of the MTM 40312 Quadrangle, northern Arabia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 37.5° to 42.5°, long 310° to 315°. Scale 1:502,000 (1 mm = 502 m) at 310° long. Sheet 22 by 38 inches. (Transverse Mercator projection.)

I-2338. Controlled photomosaic of the MTM 40317 Quadrangle, northern Arabia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 37.5° to 42.5°, long 315° to 320°. Scale 1:502,000 (1 mm = 502 m) at 310° long. Sheet 22 by 38 inches. (Transverse Mercator projection.)

I-2339. Controlled photomosaic of the MTM 45312 Quadrangle, northern Arabia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 42.5° to 47.5°, long 310° to 315°. Scale 1:502,000 (1 mm = 502 m) at 310° long. Sheet 20 by 38 inches. (Transverse Mercator projection.)

I-2340. Controlled photomosaic of the MTM 45317 Quadrangle, northern Arabia region of Mars. Prepared for the National Aeronautics and Space Administration. 1993. Lat 42.5° to 47.5°, long 315° to 320°. Scale 1:502,000 (1 mm = 502 m) at 310° long. Sheet 20 by 38 inches. (Transverse Mercator projection.)

I-2342. NEVADA. Geologic map of late Cenozoic deposits and faults in the southern part of the Davis Mountain 15′ Quadrangle, Esmeralda County, Nevada, by M. C. Reheis, T. L. Sawyer, J. L. Slate and A. R. Gillespie. 1993. Lat 37°45′ to 37°55′, long 118° to 118°15′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 56 by 41 inches (in color).

I-2343-A. MONTANA, WYOMING. Geologic and structure map, with contours on top of the Pierre Shale, for the north half of the

Powder River basin, southeastern Montana and northeastern Wyoming, by N. M. Denson, M. L. Gibson and G. L. Sims. 1993. Lat 44° to 45°30′, long 104°30′ to 107°30′. Scale 1:200,000 (1 inch = about 3.2 miles). Sheet 58 by 41 inches (in color).

I-2343-B. WYOMING. Geologic and structure map, with contours on top of the Pierre Shale, for the south half of the Powder River basin, northeastern Wyoming, by N. M. Denson, M. L. Gibson and G. L. Sims. 1993. Lat 42°30′ to 44°, long 104° to 107°. Scale 1:200,000 (1 inch = about 3.2 miles). Sheet 58 by 41 inches (in color).

I-2355. MICHIGAN. Structure map of Archean rocks, Palmer and Sands 7 1/2-minute quadrangles, Michigan, showing Great Lakes tectonic zone, by P. K. Sims. 1993. Lat 46°22′30″ to 46°30′, long 87°22′30″ to 87°37′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 44 by 29 inches (in color).

I-2356. WISCONSIN, MICHIGAN. Geologic map of Precambrian rocks of parts of Iron Mountain and Escanaba 30′ × 60′ quadrangles, northeastern Wisconsin and adjacent Michigan, by P. K. Sims and K. J. Schulz. 1993. Lat 45°30′ to 46°, long 87°45′ to 88°30′. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 53 by 31 inches (in color).

I-2364-B. WEST VIRGINIA. Peat resources in West Virginia, by C. C. Cameron. Prepared in cooperation with the West Virginia Geological and Economic Survey. 1993. Lat 39°02′30″ to 39°10′, long 79°22′30″ to 79°27′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 28 by 34 inches (in color).

I-2369. MASSACHUSETTS, VERMONT. Bedrock geologic map of the Williamstown and North Adams quadrangles, Massachusetts and Vermont, and part of the Cheshire Quadrangle, Massachusetts, by N. M. Ratcliffe, U.S. Geological Survey; D. B. Potter, Hamilton College; and R. S. Stanley, University of Vermont. Prepared in cooperation with the Commonwealth of Massachusetts, Department of Public Works; and the State of Vermont, Geological Survey. 1993. Two sheets. Lat 42°30′ to 42°45′, long 73° to 73°15′. Each sheet, scale 1:24,000 (1 inch = 2,000 feet). Sheet 1, 41 by 52 inches; sheet 2, 37 by 48 inches (all in color). (Accompanied by 13-page text.)

I-2377. KANSAS. Geologic map of the Bush City Quadrangle and parts of the Kincaid, Centerville, and Blue Mound quadrangles, Anderson County, Kansas, by W. D. Johnson, Jr. Prepared in cooperation with the Kansas Geological Survey. 1993. Lat 38°02′30″ to 38°15′, long 95°05′ to 95°15′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 36 by 44 inches (in color).

I-2378. KANSAS. Geologic map of the Westphalia Quadrangle and parts of the Geneva, Aliceville, and Neosho Falls quadrangles, Anderson County, Kansas, by W. D. Johnson, Jr. Prepared in cooperation with the Kansas Geological Survey. 1993. Lat 38°02′30″ to 38°15′, long 95°22′30″ to 95°30′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 30 by 44 inches (in color).

I-2379. KANSAS. Geologic map of the Welda Quadrangle and part of the Colony Quadrangle, Anderson County, Kansas, by W. D. Johnson, Jr. Prepared in cooperation with the Kansas Geological Survey. 1993. Lat 38°02′30″ to 38°15′, long 95°15′ to 95°22′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 30 by 44 inches (in color.)

I-2380-A. MONTANA, WYOMING. Geologic map showing thickness of the Upper Cretaceous Pierre Shale in the north half of the Powder River basin, southeastern Montana and northeastern Wyoming, by N. M. Denson, M. L. Gibson and G. L. Sims. 1993. Lat 44° to 45°30′, long 104°30′ to 107°30′. Scale 1:200,000 (1 inch = about 3.2 miles). Sheet 57 by 41 inches (in color).

I-2380-B. WYOMING. Geologic map showing thickness of the Upper Cretaceous Pierre Shale in the south half of the Powder River basin, northeastern Wyoming and adjacent areas, by N. M. Denson, M. L. Gibson and G. L. Sims. 1993. Lat 42°30′ to 44°, long 104° to 107°. Scale 1:200,000 (1 inch = about 3.2 miles). Sheet 58 by 40 inches (in color).

I-2392. Indexes of Mars topographic maps published by the U.S. Geological Survey January 1, 1993. Prepared for the National Aeronautics and Space Administration. 1993. Sheet 26 1/2 by 37 inches.

I-2394. NEVADA. Geologic map of the Snowstorm Mountains and vicinity, Elko and Humboldt counties, Nevada, by A. R. Wallace. 1993. Lat 41°07′30″ to 41°30′, long 116°45′ to 117°07′30″. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 42 by 41 inches (in color).

I-2408. MARIANA ISLANDS. Geologic map of Alamagan Volcano, northern Mariana Islands, by R. B. Moore and F. A. Trusdell. 1993. Lat 17°34′N to 17°37′30″N, long 145°50′E to 145°47′30″E. Scale 1:12,500 (1 inch = about 1,030 feet). Sheet 42 by 26 inches (in color).

I-2420. ARIZONA. Geologic map of the Tombstone volcanic center, Cochise County, Arizona, by R. B. Moore. 1993. Lat 31°35′ to 31°50′, long 110° to 110°15′. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 31 by 29 inches (in color).

MISCELLANEOUS INVESTIGATIONS SERIES MAPS—QUATERNARY GEOLOGICAL ATLAS OF THE UNITED STATES

I-1420 (NG-14). Quaternary map of the Monterey 4° × 6° Quadrangle, United States. State compilations by D. W. Moore and E. G. Wermund, Jr. Edited and integrated by the D. W. Moore and G. M. Richmond. Prepared in cooperation with the Texas Bureau of Economic Geology. 1993. Lat 24° to 28°, long 96° to 102°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 47 by 31 inches (in color).

I-1420 (NH-14). Quaternary geologic map of the Austin 4° × 6° Quadrangle, United States. State compilations by D. W. Moore and E. G. Wermund, Jr. Edited and integrated by D. W. Moore, G. M. Richmond, and A. C. Christiansen. Prepared in cooperation with the Texas Bureau of Economic Geology. 1993. Lat 28° to 32°, long 96° to 102°. Scale 1:000,000 (1 inch = about 16 miles). Sheet 52 1/2 by 33 inches (in color).

I-1420 (NJ-10). CALIFORNIA. Quaternary geologic map of the San Francisco Bay 4° × 6° Quadrangle, United States, compiled by Clyde Wahrhaftig, S. W. Stine, and N. K. Huber. Edited and integrated by N. K. Huber. Prepared in cooperation with the Department of Geology and Geophysics, University of California, Berkeley. 1993. Lat 36° to 40°, long 120° to 126°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 50 by 36 inches (in color).

I-1420 (NJ-14). Quaternary geologic map of the Wichita 4° × 6° Quadrangle, United States. State compilations by J. E. Denne, K. V. Luza, G. M. Richmond, K. M. Jensen, W. D. Fishman,

and E. G. Wermund, Jr. Edited and integrated by G. M. Richmond and A. C. Christiansen. Prepared in cooperation with the Kansas Geological Survey, Oklahoma Geological Survey, and Texas Bureau of Economic Geology. 1993. Lat 36° to 40°, long 96° to 102°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 52 by 41 inches (in color).

I-1420 (NJ-15). Quaternary geologic map of the Ozark Plateau 4° × 6° Quadrangle, United States. State compilations by J. W. Whitfield, R. A. Ward, J. E. Denne, D. F. Holbrook, W. V. Bush, J. A. Lineback, K. V. Luza, K. M. Jensen, and W. D. Fishman. Edited and integrated by G. M. Richmond and D. L. Weide. Prepared in cooperation with the Missouri Department of Natural Resources, Kansas Geological Survey, Arkansas Geological Commission, Illinois State Geological Survey, and Oklahoma Geological Survey. 1993. Lat 36° to 40°, long 90° to 96°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 50 by 35 inches (in color).

I-1420 (NK-18). Quaternary map of the Hudson River 4° × 6° Quadrangle, United States and Canada. State and Provincial compilations by D. S. Fullerton, W. D. Sevon, E. H. Muller, Sheldon Judson, R. F. Black, P. W. Wagner, J. H. Hartshorn, W. F. Chapman, and W. D. Cowan. Edited and integrated by D. S. Fullerton. Prepared in cooperation with the Pennsylvania Topographic and Geologic Survey, Syracuse University, New York State Geological Survey, Princeton University, University of Connecticut, University of Vermont, University of Massachusetts, Slippery Rock State College, and Ontario Geological Survey. 1992. Lat 40° to 44°, long 72° to 78°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 54 by 41 inches (in color). (Accompanied by 19-page text.)

I-1420 (NL-17). Quaternary geologic map of the Sudbury 4° × 6° Quadrangle, United States and Canada. State and Province compilations by E. V. Sado, D. S. Fullerton, C. L. Baker, and W. R. Farrand. Edited and integrated by D. S. Fullerton. Prepared in cooperation with the Ontario Geological Survey and the University of Michigan, Department of Geological Sciences. 1993. Lat 44° to 48°, long 78° to 84°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 51 1/2 by 31 inches (in color).

I-1420 (NL-18). Quaternary geologic map of the Ottawa 4° × 6° Quadrangle, United States and Canada. State and provincial compilations by N. R. Gadd, J. J. Veillette, D. S. Fullerton, P. W. Wagner, and W. F. Chapman. Edited and integrated by D. S. Fullerton. Prepared in cooperation with the Geological Survey of Canada; Ontario Geological Survey; University of Vermont, Department of Geology; and Slippery Rock State College, Department of Geology, Pennsylvania. 1993. Lat 44° to 48°, long 72° to 78°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 56 by 32 inches (in color).

COAL INVESTIGATIONS MAPS

Geologic maps on topographic or planimetric bases; various scales; show bedrock geology, stratigraphy, and structural relations in certain coal-resource areas.

C-0142. MONTANA. Geologic map showing distribution of clinker in the Tertiary Fort Union and Wasatch formations, northern Powder River basin, Montana, by E. L. Heffern, D. A. Coates, Jason Whiteman and M. S. Ellis. 1993. Lat 45° to 46°30′, long 105°115′ to 107°. Scale 1:175,000 (1 inch = about 2.8 miles). Sheet 41 by 56 inches (in color).

C-0144. UTAH. Geologic map of the Horse Flat Quadrangle, Kane County, Utah, by W. E. Bowers. 1993. Lat 37°15′ to 37°22′30″, long 111°45′ to 111°52′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 34 by 34 inches (in color).

OIL AND GAS INVESTIGATIONS CHARTS

Charts show stratigraphic information for certain oil and gas fields and other areas having hydrocarbon potential.

OC-0135. MONTANA, WYOMING. Stratigraphic cross sections A-A′ through F-F′, showing electric logs of Upper Cretaceous and older rocks, Powder River basin, Montana and Wyoming, by J. E. Fox. 1993. Three sheets. Lat 43° to 45°, long 104° to 107°. Sheet 1, 27 by 58 inches; sheet 2, 32 by 58 inches; sheet 3, 27 by 58 inches. (Supersedes Open-file reports 86-465-A,B,C,D,E,F.)

OC-0136. WYOMING. Stratigraphic cross sections G-G′ through L-L′, showing electric logs of Upper Cretaceous and older rocks, Powder River basin, Wyoming, by J. E. Fox. 1993. Three sheets. Lat 43° to 45°, long 104° to 107°. Sheet 1, 32 by 56 inches; sheet 2, 32 by 55 inches; sheet 3, 32 by 58 inches. (Supersedes Open-file reports 86-465-G,H,I,J,K,L.)

OC-0137. WYOMING. Stratigraphic cross sections M-M′ through R-R′, showing electric logs of Upper Cretaceous and older rocks, Powder River basin, Wyoming, by J. E. Fox. 1993. Three sheets. Lat 43° to 45°, long 104° to 107°. Sheet 1, 24 by 58 inches; sheet 2, 27 by 58 inches; sheet 3, 31 by 58 inches. (Supersedes Open-file reports 86-465 M-R.)

OC-0138. MONTANA, WYOMING. Stratigraphic cross sections S-S′ through V-V′, showing electric logs of Upper Cretaceous and older rocks, Powder River basin, Montana and Wyoming, by J. E. Fox. 1993. Two sheets. Lat 43° to 45°, long 104° to 107. Each sheet 31 by 58 inches. (Supersedes Open-file reports 86-465-S,T,U,V.)

OC-0140. WYOMING, MONTANA. Geological log signatures of lower Tertiary and Upper Cretaceous rocks in the Powder River basin, Wyoming and Montana, by D. A. Seeland, J. K. Hardie, A. B. Gibbons, E. A. Johnson, L. R. Biewick, M. W. McLellan, C. L. Molnia and F. W. Pierce. 1993. Lat 42° to 48°, long 102° to 108°. Sheet 31 by 27 inches.

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-1835-H. Maps showing areal extent of selected Paleozoic shales in the northern Midcontinent, U.S.A., compiled by W. P. Pratt. Prepared in cooperation with the geological surveys of Arkansas, Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska, Oklahoma, and Wisconsin. 1992. Seven sheets. Lat 36° to 46°, long 88° to 100°. Each sheet, scale 1:1,000,000 (1 inch = about 16 miles). Each sheet 42 1/2 by 52 inches. (Folio of the northern Midcontinent area.)

MF-1838-D. ALASKA. Maps showing metallic mineral resources of the Bendeleben and Solomon quadrangles, western Alaska, by B. M. Gamble and A. B. Till. 1993. Three sheets. Lat 64°15′ to 66°, long 162° to 165°. Each sheet, scale 1:250,000 (1 inch =

about 4 miles). Sheet 1, 38 by 38 inches; sheet 2, 26 by 38 inches; sheet 3, 29 by 38 inches. (Accompanied by 22-page text.)

MF-1877-A. NEVADA. Geologic map of the Tonopah 1° by 2° Quadrangle, central Nevada, by D. H. Whitebread and D. A. John. 1992. Lat 38° to 39°, long 116° to 118°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 42 by 28 inches. (Accompanied by 13-page text.) (Folio of the Tonopah 1° by 2° Quadrangle, central Nevada.)

MF-1994-D. MISSOURI, ARKANSAS. Mineral-resource assessment maps of the Harrison 1° × 2° Quadrangle, Missouri and Arkansas, by W. P. Pratt, T. S. Hayes, R. L. Erickson, U.S. Geological Survey; E. B. Kisvarsanyi, M. C. McFarland, A. W. Rueff, Missouri Geological Survey; W. V. Bush, G. W. Colton, and J. D. McFarland III, Arkansas Geological Commission. Prepared in cooperation with the Missouri Department of Natural Resources, Division of Geology and Land Survey, and the Arkansas Geological Commission. 1993. Lat 36° to 37°, long 92° to 94°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 40 by 58 inches (in color). (Accompanied by 22-page text.)

MF-1996-E. ALASKA. Mineralogical maps showing distribution of selected ore-related minerals in the nonmagnetic, heavy-mineral-concentrate fraction of stream sediment from the Mount Hayes 1° × 3° Quadrangle, eastern Alaska Range, Alaska, by R. B. Tripp, G. C. Curtin, W. J. Nokleberg, D. L. Huston and J. R. Hampton. 1993. Three sheets. Lat 63° to 64°, long 144° to 147°. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Each sheet 34 by 42 inches (all in color). (Accompanied by 13-page text.) (Folio of the Mount Hayes Quadrangle.)

MF-2081-C. UTAH. Maps showing the distribution of barium, beryllium, copper, lead, molybdenum, silver, and tin in stream-sediment samples, Delta 1° × 2° Quadrangle, Utah, by D. R. Zimbelman. 1993. Three sheets. Lat 39° to 40°, long 112° to 114°. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Sheets 1-2, 41 by 57 inches; sheet 3, 36 by 24 inches (all in color).

MF-2081-D. UTAH. Maps showing distribution of gold, antimony, arsenic, bismuth, cadmium, and zinc in stream-sediment samples, Delta 1° × 2° Quadrangle, Utah, by D. R. Zimbelman. 1993. Two sheets. Lat 39° to 40°, long 112° to 114°. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Each sheet, 41 by 57 inches (all in color).

MF-2081-E. UTAH. Maps showing distribution of antimony, arsenic, barium, beryllium, bismuth, cadmium, copper, lead, molybdenum, silver, tin, tungsten, and zinc in heavy-mineral-concentrate samples, Delta 1° × 2° Quadrangle, Utah, by D. R. Zimbelman. 1993. Five sheets. Lat 39° to 40°, long 112° to 114°. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Sheets 1-4, 41 by 57 inches; sheet 5, 36 by 24 inches (all in color).

MF-2083-B. Magnetic anomaly map of the central Cayman Trough, northwestern Caribbean Sea, by W. P. Dillon, N. T. Edgar, U.S. Geological Survey; L. M. Parson, Institute of Oceanographic Sciences, England; K. M. Scanlon, G. R. Driscoll, U.S. Geological Survey; and C. L. Jacobs, Institute of Oceanographic Sciences. Prepared in cooperation with the Institute of Oceanographic Sciences. 1993. Lat 18° to 19°, long 80° to 83°. Scale 1:402,000 at lat 18°30′N. Sheet 39 by 34 inches (in color). (Mercator projection.)

MF-2125-E. KANSAS, MISSOURI. Assessment of the Joplin 1° × 2° Quadrangle, Kansas and Missouri, for mississippi valley-type deposits and other minerals, by W. P. Pratt, T. S. Hayes, R. L. Erickson, U.S. Geological Survey; Pieter Berendsen, Kansas Geological Survey; and E. B. Kisvarsanyi, Missouri Department of Natural Resources. Prepared in cooperation with the Kansas Geological Survey and the Missouri Department of Natural Resources, Division of Geology and Land Survey. 1993. Two sheets. Sheet 2, lat 37° to 38°, long 94° to 96°. Sheet 2, scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 46 by 34 inches; sheet 2, 37 by 50 inches (in color). (Folio of the Joplin 1° × 2° Quadrangle, Kansas and Missouri.)

MF-2144-B. ALASKA. Maps showing geochemistry and mineralogy of nonmagnetic heavy-mineral-concentrate samples from the southern part of the Chandler Lake Quadrangle, Alaska, by K. D. Kelley, S. J. Sutley and J. G. Frisken. 1993. Two sheets. Sheet 1, lat 68° to 69°, long 150° to 153°; sheet 2, lat 68° to 68°30′, long 150° to 153°. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 48 by 34 inches; sheet 2, 47 by 35 inches.

MF-2144-C. ALASKA. Maps showing geochemistry of sediment samples from the southern part of the Chandler Lake Quadrangle, Alaska, by K. D. Kelley, H. N. Barton, S. J. Sutley and R. M. O'Leary. 1993. Two sheets. Sheet 1, lat 68° to 69°, long 150° to 153°; sheet 2, lat 68° to 68°30′, long 150° to 153°. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 52 by 34 inches; sheet 2, 32 by 39 inches.

MF-2144-D. ALASKA. Maps showing geochemistry of sediment samples from the northern part of the Chandler Lake Quadrangle, Alaska, by K. D. Kelley and S. J. Sutley. 1993. Two sheets. Sheet 1, lat 68° to 69°, long 150° to 153°; sheet 2, lat 68°30′ to 69°, long 150° to 153°. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 48 by 30 inches; sheet 2, 54 by 37 inches.

MF-2203. NORTH CAROLINA, VIRGINIA. Reconnaissance geochemistry in the southern part of the Virgilina District, North Carolina and Virginia, by F. G. Lesure. 1993. Lat 36°17′30″ to 36°37′30″, long 78°42′30″ to 79°05′. Scale 1:48,000 (1 inch = 4,000 feet). Sheet 56 by 40 inches.

MF-2207. ALASKA. Maps showing distribution of selected minerals in the nonmagnetic heavy-mineral fraction of stream-sediment samples, Medfra Quadrangle, Alaska, by R. B. Tripp and H. D. King. 1993. Lat 63° to 64°, long 153° to 156°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 53 by 41 inches.

MF-2208. NEW JERSEY, NEW YORK. Stratigraphic relations of the sedimentary rocks below the Lower Jurassic Orange Mountain Basalt, northern Newark Basin, New Jersey and New York, by R. A. Parker. Prepared in cooperation with the New Jersey Geological Survey. 1993. Lat 40°22′30″ to 41°, long 74° to 74°45′. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 52 by 40 inches (in color).

MF-2209. NORTH CAROLINA. Bathymetry at the head of the Cape Fear Slide, offshore North Carolina, by E. A. Schmuck, Peter Popenoe, U. S. Geological Survey; C. K. Paull, University of North Carolina; and C. L. Brown, U. S. Geological Survey. 1992. Lat 32°50′N to 33°20′N, long 75°40′W to 76°20′W. Scale 1:150,000 (1 inch = about 2.4 miles). Sheet 37 by 26 inches.

MF-2211. GLORIA mosaic of the deep sea floor off the Atlantic coast of the United States, by J. S. Schlee, W. P. Dillon, Peter Popenoe, J. M. Robb and D. W. O'Leary. 1992. Lat 28°N to 40°N, long 66°W to 80°W. Scale 1:2,000,000 (1 inch = about 32 miles). Sheet 54 by 40 inches.

MF-2212. CALIFORNIA. Isopach map showing Quaternary deposits in the Gulf of Santa Catalina area, California, by P. A. McCrory. 1993. Two sheets. Sheet 1, lat 32°30′ to 34°, long 117° to 118°30′. Sheet 1, scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 45 by 31 inches; sheet 2, 50 by 32 inches.

MF-2213. GEORGIA. Geochemical reconnaissance of the Carroll County gold belt and southwestern part of the Dahlonega gold belt, western Georgia, by F. G. Lesure. 1993. Two sheets. Sheet 1, lat 34° to 34°20′, long 84°15′ to 84°55′; sheet 2, lat 33°22′30″ to 34°, long 84°37′30″ to 85°22′30″. Sheet 1, scale 1:48,000 (1 inch = 4,000 feet); sheet 2, scale 1:100,000 (1 inch = about 1.6 miles). Sheet 1, 50 by 32 inches; sheet 2, 53 by 42 inches (all in color). (Accompanied by 21-page text.)

MF-2214. ALABAMA. Geochemical reconnaissance of the Blue Hill and Gregory Hill gold mines and vicinity, Tallapoosa County, Alabama, by F. G. Lesure. 1993. Lat 32°45′ to 33°, long 85°45′ to 86°. Scale 1:1,500 (1 inch = 133 feet). Sheet 45 by 37 inches.

MF-2215-A. SOUTH CAROLINA, GEORGIA, NORTH CAROLINA. Suitability of bedrock for construction stone in the Greenville 1° × 2° Quadrangle, South Carolina, Georgia, and North Carolina, by J. P. D'Agostino, J. W. Horton, Jr., A. E. Nelson and J. W. Clarke. 1993. Lat 34° to 35°, long 82° to 84°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 32 by 42 inches.

MF-2216. COLORADO. Geologic map of the Philadelphia Creek Quadrangle, Rio Blanco County, Colorado, by R. C. Johnson and M. C. Smith. 1993. Lat 39°52′30″ to 40°, long 108°37′30″ to 108°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 41 by 51 inches.

MF-2217-A. ALASKA. Geochemical maps showing the distribution of selected elements in stream-sediment samples from the Craig, Dixon Entrance, and western edges of the Ketchikan and Prince Rupert quadrangles, Southeast Alaska, by J. B. Cathrall, B. F. Arbogast, George VanTrump and S. K. McDanal. 1993. Two sheets. Lat 54°45′ to 56°, long 131°30′ to 134°40′. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 40 by 57 inches; sheet 2, 34 by 31 inches.

MF-2217-B. ALASKA. Geochemical maps showing the distribution and concentration of selected elements in nonmagnetic heavy-mineral-concentrate samples from stream sediment from the Craig, Dixon Entrance, and western edges of the Ketchikan and Prince Rupert quadrangles, Southeast Alaska, by J. B. Cathrall, S. K. McDanal, George VanTrump, B. F. Arbogast and D. J. Grybeck. 1993. Two sheets. Lat 54°45′ to 56°, long 131°30′ to 134°40′. Each sheet, scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 41 by 56 inches; sheet 2, 35 by 30 inches.

MF-2218. TENNESSEE. Logs of exploratory trenches through liquefaction features on late Quaternary terraces in the Obion River valley, northwestern Tennessee, by D. T. Rodbell and Lee-Ann Bradley. 1993. Two sheets. Sheet 1, 54 by 39 inches; sheet 2, 48 by 37 inches.

MF-2220. COLORADO. Preliminary geologic map of the East Evacuation Creek Quadrangle, Garfield and Rio Blanco counties, Colorado, by M. P. Pantea. 1993. Lat 39°37′30″ to 39°45′, long 108°52′30″ to 109°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 38 by 36 inches.

MF-2221. NEW JERSEY. Bathymetry, sidescan sonar image, and surficial geological interpretation of the inner shelf off Little Egg Inlet, New Jersey, by D. C. Twichell, U.S. Geological Survey; and K. W. Able, Rutgers University. Prepared in cooperation with Rutgers University. 1993. Two sheets. Lat 39°27′N to 39°30′N, long 74°13′W to 74°17′W. Each sheet, scale 1:15,000 (1 inch = about 1,300 feet). Sheet 1, 33 by 50 inches; sheet 2, 44 by 26 inches. (Mercator projection.)

MF-2223. NORTH CAROLINA. Preliminary geology and geochemistry of rocks and saprolite in part of the Franklin Quadrangle, Macon County, North Carolina, by F. G. Lesure and E. R. Force. 1993. Lat 35°07′30″ to 35°15′, long 83°22′30″ to 83°30′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 40 by 40 inches.

MF-2224. VERMONT. Bedrock geologic map of the Sunderland Quadrangle, Bennington and Windham counties, Vermont, by W. C. Burton. 1993. Lat 43° to 43°07′30″, long 73° to 73°07′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 48 1/2 by 38 1/2 inches.

MF-2226-A. ALASKA. Preliminary geologic map of the Bethel and southern Russian Mission quadrangles, Southwestern Alaska, by S. E. Box, E. J. Moll-Stalcup, T. P. Frost and J. M. Murphy. 1993. Lat 60° to 61°15′, long 159° to 162°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 42 by 43 1/2 inches. (Accompanied by 20-page text.) (Folio of the Bethel area.)

MF-2227. ALASKA. Geochemical map showing the distribution of gold in the Anchorage 1° × 3° Quadrangle, Alaska, by D. J. Madden-McGuire and R. B. Tripp. 1993. Lat 61° to 62°, long 147° to 150°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 45 by 34 inches (in color).

MF-2228. ALASKA. Map showing metallic mineral resource potential in the Goodnews Bay, Hagemeister Island, and Nushagak Bay 1° × 3° quadrangles, Southwest Alaska, by J. E. Kilburn, R. J. Goldfarb, Andrew Griscom and S. E. Box. 1993. Four sheets. Sheets 2-4, lat 58°30′ to 60°, long 158° to 162°30′. Sheets 2-4, scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 52 by 40 inches; sheets 2-4, 45 by 36 inches (in color).

MF-2230. ARIZONA. Geologic map of the Turkey Mountain Quadrangle, Coconino County, Arizona, by G. W. Weir and L. D. Nealey. 1993. Lat 34°37′30″ to 34°45′, long 111°15′ to 111°22′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 28 by 32 inches.

MF-2231. HAWAII. Bathymetry of south flank of Kilauea Volcano, Hawaii, by W. W. Chadwick, Jr., Oregon State University; J. R. Smith, Jr., University of Hawaii; J. G. Moore, D. A. Clague, U.S. Geological Survey; M. O. Garcia, University of Hawaii; and C. G. Fox, National Oceanic and Atmospheric Administration. Prepared in cooperation with the National Oceanic and Atmospheric Administration Joint Office for Mapping and Research. 1993. Lat 18°30′ to 19°30′, long 154°42′ to 155°30′. Scale 1:150,000 (1 inch = about 2.4 miles). Sheet 26 by 38 inches (in color).

MF-2232. COLORADO. Geologic map of the Divide Creek Quadrangle, Rio Blanco and Moffat counties, Colorado, by W. J. Hail, Jr. and B. E. Barnum. 1993. Lat 40°07′30″ to 40°15′, long 108°30′ to 108°37′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 33 by 29 inches.

MF-2233. HAWAII. Bathymetry of southern Mauna Loa Volcano, Hawaii, by W. W. Chadwick, Jr., Oregon State University; J. G. Moore, U.S. Geological Survey; M. O. Garcia, University of Hawaii; and C. G. Fox, National Oceanic and Atmospheric Ad-

ministration. Prepared in cooperation with the National Oceanic and Atmospheric Administration Joint Office for Mapping and Research. 1993. Lat 18°30′ to 19°30′, long 155°24′ to 156°12′. Scale 1:150,000 (1 inch = about 2.4 miles). Sheet 25 1/2 by 44 inches (in color).

MF-2234. IDAHO. Geologic map of the Blackbird Mountain 15-minute Quadrangle, Lemhi County, Idaho, by K. V. Evans and J. J. Connor. 1993. Lat 45° to 45°15′, long 114°15′ to 114°30′. Scale 1:62,500 (1 inch = about 1 mile). Sheet 34 by 27 inches.

MF-2236. COLORADO. Complete Bouguer gravity anomaly map of the State of Colorado, by G. A. Abrams. 1993. Lat 37° to 41°, long 102° to 109°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 56 by 40 inches. (Supersedes GP-895.)

MF-2238. Map showing late Cenozoic extensional tilt patterns and associated structures in Sonora and adjacent areas, Mexico, by J. H. Stewart and Jaime Roldán-Quintana. 1994. Lat 26° to 32°, long 108° to 115°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 51 by 38 inches.

MF-2242. Geologic map of the Guri and southern part of the Tucupita 2° × 3° quadrangles, Bolivar State, Venezuela, by D. P. Cox, Floyd Gray, U.S. Geological Survey; Juan Acosta, Corporación Venezolana de Guayana; J. H. Stewart, U.S. Geological Survey; Jesús Arespón, Corporación Venezolana de Guayana; W. E. Brooks, U.S. Geological Survey; Luis Franco, Edixon Salazar, and Yolanda Lopez, Corporación Venezolana de Guayana. Prepared in cooperation with the Corporación Venezolana de Guayana, Técnica Minera. 1993. Lat 6°N to 8°45′N, long 60°W to 63°W. Scale 1:500,000 (1 inch = about 8 miles). Sheet 50 by 41 inches.

MF-2250. UTAH. Geologic map of the Nutters Hole Quadrangle, Uintah and Carbon counties, Utah, by W. B. Cashion. 1994. Lat 39°45′ to 39°52′30″, long 109°45′ to 109°52′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 28 by 32 inches.

MF-2252. WISCONSIN. Shoreline and coastal wetland variability along the west shore of Green Bay, Marinette and Oconto counties, Wisconsin, by G. L. Shideler. 1994. Lat 44°30′ to 45°, long 87°37′30″ to 88°57′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 45 by 41 inches.

MF-2253. MONTANA. Geologic map of the Big Timber Stock and vicinity, southern Crazy Mountains, Sweet Grass and Park counties, south-central Montana, by E. A. du Bray, J. E. Elliott, A. B. Wilson, B. S. Van Gosen and L. A. Rosenberg. 1993. Lat 46° to 46°07′30″, long 110°15′ to 110°25′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 45 1/2 by 33 inches.

SPECIAL GEOLOGIC MAPS

KENTUCKY. Geologic map of Kentucky. Prepared in cooperation with the Kentucky Geological Survey. 1992. Lat 37° to 39°, long 82° to 89°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 58 by 41 1/4 inches (in color). Recompiled and revised from the Geologic map of Kentucky, scale 1:250,000 (1 inch = about 4 miles), 1981.)

ARKANSAS. Geological map of Arkansas, by B. R. Haley, U.S. Geological Survey; assisted by E. E. Glick, U.S. Geological Survey, and W. V. Bush, B. F. Clardy, C. G. Stone, M. B. Woodward and D. L. Zachry, Arkansas Geological Commission. Prepared in cooperation with the Arkansas Geological Commission. 1993. Lat 33° to 36°, long 90° to 94°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 52 by 34 inches (in color). (Available flat only.) (Revision.)

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-0551. MINNESOTA. Water resources of the Little Fork River watershed, northeastern Minnesota, by J. O. Helgesen, G. F. Lindholm and D. W. Ericson. Prepared in cooperation with the Minnesota Department of Natural Resources Division of Waters, Soils, and Minerals. 1976 (1993). Lat 47°30′ to 48°30′, long 92°30′ to 93°30′. Sheet 54 by 40 inches (in color.) (Two-sided map.) (Reprint.)

HA-0722-G. KANSAS. Geohydrologic systems in Kansas; geohydrology of the Great Plains aquifer system, by H. E. McGovern and R. J. Wolf. 1993. Two sheets. Lat 37° to 40°, long 95° to 102°. Sheet 1, scales 1:1,000,000 (1 inch = about 16 miles) and 1:3,000,000 (1 inch = about 48 miles); sheet 2, scales 1:1,000,000 (1 inch = about 16 miles), 1:2,000,000 (1 inch = about 32 miles), and 1:3,000,000 (1 inch = about 48 miles). Sheet 1, 53 by 38 inches; sheet 2, 49 by 40 inches (all in color).

HA-0722-H. KANSAS. Geohydrologic systems in Kansas; geohydrology of the upper aquifer unit in the Western Interior Plains aquifer system, by J. F. Kenny, C. V. Hansen and R. J. Wolf. 1993. Two sheets. Lat 37° to 40°, long 95° to 102°. Each sheet, scale 1:500,000 (1 inch = about 8 miles). Sheet 1, 45 by 37 inches; sheet 2, 46 by 40 inches (all in color).

HA-0722-I. KANSAS. Geohydrologic systems in Kansas; geohydrology of the lower aquifer unit in the Western Interior Plains aquifer system, by L. J. Combs, C. V. Hansen and R. J. Wolf. 1993. Three sheets. Lat 37° to 40°, long 95° to 102°. Each sheet, scale 1:1,500,000 (1 inch = about 24 miles). Sheet 1, 51 by 33 inches; sheet 2, 37 by 40 inches; sheet 3, 34 by 33 inches (all in color).

HA-0730-J. Ground water atlas of the United States; Segment 9, Iowa, Michigan, Minnesota, and Wisconsin, by P. G. Olcott. 1992. p. J1-J31. (Atlas 18 × 23 inches.)

SPECIAL MAPS

Central United States earthquakes, 1974-1991. 1992. Scale 1:1,000,000 (1 inch = about 16 miles). Poster 26 by 32 1/2 inches (base satellite image is in color).

The North American vegetation index map, developed and produced jointly by: U.S. Geological Survey and Canada Centre for Remote Sensing. 1993. Lat 10° to 50°, long 70° to 130°. Scale 1:12,500,000 (1 inch = about 198 miles). Sheet 31 by 31 inches (in color). (Accompanied by 3-page text.)

OUTSIDE PUBLICATIONS

ARTICLES AND REPORTS

Articles by U.S. Geological Survey personnel in non-U.S. Geological Survey publications that came to our attention in 1993. Non-U.S. Geological Survey personnel who share authorship in articles with U.S. Geological Survey personnel are indicated by an asterisk (*) immediately following the name. **These publications are not available from the U.S. Geological Survey.**

OP-1. G. A. Abers*, Goran Ekstrom*, M. S. Marlow and E. L. Geist. Bering Sea earthquake of February 21, 1991; active faulting along the Bering shelf edge. Journal of Geophysical Research, B, Solid Earth and Planets. v. 98, no. 2, February 10, 1993. p. 2155-2165.

OP-2. Ulrich Achauer*, P. K. Maguire*, James Mechie*, W. V. Green*, Claus Prodehl*, Karl Fuchs*, M. A. Khan*, G. R. Keller*, W. D. Mooney, B. Jacob*, Hans Thybo*, I. O. Nyambok*, J. P. Patel*, L. W. Braile*, G. A. Thompson*, D. J. Gajewski*, R. P. Meyer*, P. M. Davis* and D. Riaroh*. Some remarks on the structure and geodynamics of the Kenya Rift. Tectonophysics, *in* Geodynamics of rifting; Volume II, Case history studies on rifts; North and South America and Africa. v. 213, no. 1-2, October 30, 1992. p. 257-268.

OP-3. J. G. Acker* and O. P. Bricker. The "simplest" watershed; an in-situ study of bedrock-atmospheric deposition reactions. Proceedings - International Symposium on Water-Rock Interaction. 7, 1992. p. 533-536.

OP-4. C. D. Adams*, S. J. Randtke*, E. M. Thurman and R. A. Hulsey*. Atrazine and its degradation products in soil and ground water, and the effectiveness of water-treatment processes for their removal. Proceedings from the Annual University of Kansas Environmental Engineering Conference, *in* Proceedings from the 40th annual University of Kansas environmental engineering conference. 40, 1990. p. 1-24.

OP-5. C. D. Adams* and E. M. Thurman. Formation and transport of deethylatrazine in the soil and vadose zone. Journal of Environmental Quality. v. 20, no. 3, September 1991. p. 540-547.

OP-6. T. S. Ahlbrandt, K. K. Krohn and G. C. Curtin. Energy and mineral resources in and near NP lands. Park Science. v. 13, no. 1, 1993. p. 10-11.

OP-7. J. C. Aitchison*, P. M. Ashley*, M. C. Blake, Jr. and P. G. Flood*. Tectonics and metallogenesis, southern part of the New England Orogen; field excursion, *in* New England Orogen; tectonics and metallogenesis. (J. D. Kleeman, editor). Armidale, N.S.W.: Univ. N. Engl., Dep. Geol. and Geophys. November 1988. p. 308-313.

OP-8. J. Aitchison* and B. L. Murchey (editors). Significance and application of Radiolaria to terrane analysis. Palaeogeography, Palaeoclimatology, Palaeoecology. v. 96, no. 1-2, October 6, 1992. 174 p.

OP-9. G. V. Albino. Application of metal zoning to gold exploration in porphyry copper systems; discussion. Journal of Geochemical Exploration. v. 48, no. 3, August 1, 1993. p. 359-365.

OP-10. J. N. Aleinikoff, J. C. Reed, Jr. and Ed DeWitt. COLORADO. The Mount Evans Batholith in the Colorado Front Range; revision of its age and reinterpretation of its structure. Geological Society of America Bulletin. v. 105, no. 6, June 1993. p. 791-806.

OP-11. J. N. Aleinikoff, J. C. Reed, Jr. and J. L. Wooden. COLORADO. Lead isotopic evidence for the origin of Paleo- and Mesoproterozoic rocks of the Colorado Province, U.S.A. Precambrian Research. v. 63, no. 1-2, September 1993. p. 97-122.

OP-12. J. N. Aleinikoff, Marianne Walter, M. J. Kunk and P. P. Hearn. Do ages of authigenic K-feldspar date the formation of mississippi valley-type Pb-Zn deposits, central and southeastern United States?; Pb isotopic evidence. Geology (Boulder). v. 21, no. 1, January 1993. p. 73-76.

OP-13. D. J. Allen*, W. J. Hinze* and W. F. Cannon. Drainage, topographic, and gravity anomalies in the Lake Superior region; evidence for a 1100 Ma mantle plume. Geophysical Research Letters. v. 19, no. 21, November 3, 1992. p. 2119-2122.

OP-14. J. C. Alt*, W. C. Shanks, III and M. C. Jackson*. MARIANA ISLANDS. Cycling of sulfur in subduction zones; the geochemistry of sulfur in the Mariana island arc and back-arc trough. Earth and Planetary Science Letters. v. 119, no. 4, October 1993. p. 477-494.

OP-15. C. J. Ammon* and J. E. Vidale. Tomography without rays. Bulletin of the Seismological Society of America. v. 83, no. 2, April 1993. p. 509-528.

OP-16. L. D. Anderson, D. B. Kent and J. A. Davis. Reduction of Cr(VI) under mildly reducing conditions in a sand and gravel aquifer. Proceedings - International Symposium on Water-Rock Interaction. 7, 1992. p. 495-498.

OP-17. O. J. Anderson* and W. J. Mapel. NEW MEXICO. Geology and coal resources, Shoemaker Canyon SE Quadrangle, Cibola County, New Mexico. Open File Report (New Mexico, Bureau of Mines and Mineral Resources). Report no. 172, May 1983. 32 p.

OP-18. R. E. Anderson. WASHINGTON, IDAHO. The Newport Fault; Eocene listric normal faulting, mylonitization, and crustal extension in northeastern Washington and northwestern Idaho: Discussion. Geological Society of America Bulletin. v. 105, no. 11, November 1993. p. 1511-1512.

OP-19. R. E. Anderson and T. P. Barnhard. NEVADA, UTAH, ARIZONA. Aspects of three-dimensional strain at the margin of the extensional orogen, Virgin River depression area, Nevada, Utah, and Arizona. Geological Society of America Bulletin. v. 105, no. 8, August 1993. p. 1019-1052.

OP-20. R. Y. Anderson*, J. P. Bradbury, W. E. Dean and Minze Stuiver*. MINNESOTA. Chronology of Elk Lake sediments; coring, sampling, and time-series construction. Special Paper - Geological Society of America, *in* Elk Lake, Minnesota; evidence for rapid climate change in the north-central United States. (J. P. Bradbury, editor and others). 276, 1993. p. 37-43.

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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-U.S. Geological Survey personnel who share authorship in abstracts with U.S. Geological Survey 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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ABBREVIATIONS USED

A-	Antarctic Geologic Map
B	Bulletin
C	Circular
C-	Coal Investigations Map
CAT	Catalog
CF	Coal Map
CP-	Circum-Pacific Map Series
DDS-	Digital Data Series
EV	Earthquakes and Volcanoes
GN	General Interest Publication
GP-	Geophysical Investigations Map
GQ-	Geologic Quadrangle Map
HA-	Hydrologic Investigations Atlas
HUM	Hydrologic Unit Map
I-	Miscellaneous Investigations Series Map
L-	Land Use and Land Cover Map
MF-	Miscellaneous Field Studies Map
MR-	Mineral Investigations Resources Map
MSB	Miscellaneous and Special Books
OC-	Oil and Gas Investigations Chart
OM-	Oil and Gas Investigations Map
OF	Open-File Report
OP	Outside Publication
P	Professional Paper
PB-,ADA	Report available only through the National Technical Information Service
PDE	Preliminary Determination of Epicenters
SGM	Special Geologic Map
SGMI	Geologic Map Index
SM	Special Map
STM	State Geologic Map
TWI	Techniques of Water-Resources Investigations
W	Water-Supply Paper
WRI	Water-Resources Investigations Report
YR	Yearbook

Outside journals and books are not available from the U.S. Geological Survey.

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The Secretary of the Interior has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget.

* U.S. G.P.O.:1994-301-077:80075