

TSC

Technical Service Center

Directory of Services

May 2003

Michael J. Roluti, Director
Technical Service Center

Bureau of Reclamation
PO Box 25007
Building 67, Denver Federal Center
Denver, Colorado 80225-0007
303-445-2720
<http://www.usbr.gov/tsc/>

This directory is also available on the Internet at:
http://www.usbr.gov/tsc/tsc_dir1.pdf
(requires Adobe Acrobat Reader 4.0)

Vision

Be the world-recognized center of technical excellence
in water and related resources.

Core Value

Deliver the greatest value to every customer.

TSC Mission

Provide technical services for managing, developing,
and protecting water and related resources.

Technical Service Center Profile

TSC Created	October 1994												
Agency	United States Department of the Interior Bureau of Reclamation												
Director	Michael J. Roluti												
How to Contact Us	Internet address www.usbr.gov/tsc E-mail address mroluti@do.usbr.gov Telephone 303-445-2720 Faxogram 303-445-6379 Address Denver Federal Center, Bldg. 67 PO Box 25007 (D-8000) Denver, CO 80225-0007												
Our Business	World-class engineering, science, research, and support services for projects related to water resources												
How We Operate	Much like a private business, recovering our operating costs through fee-for-service arrangements with clients without profit												
Number of employees	654 (330 Engineers, 134 Scientists, 135 Technical Support, 55 Administrative Support)												
Our Clients	Reclamation's Commissioner; Regional and Area Offices; Safety of Dams Program; Office of Program and Policy Services; Science and Technology Program; Office of Security, Safety, and Law Enforcement; International Affairs Office Other government agencies, such as the National Park Service, the U.S. Fish and Wildlife Service, the U.S. Geological Survey, Bureau of Indian Affairs, the Environmental Protection Agency International Customers												
Annual Revenues	\$70 million												
Billable Rates (FY03)	<table><thead><tr><th>Skill Level</th><th>Hourly</th><th>Daily</th></tr></thead><tbody><tr><td>1 (GS-10 or below)</td><td>\$62</td><td>\$496</td></tr><tr><td>2 (GS-11 or 12)</td><td>\$82</td><td>\$656</td></tr><tr><td>3 (GS-13 or above)</td><td>\$97</td><td>\$776</td></tr></tbody></table>	Skill Level	Hourly	Daily	1 (GS-10 or below)	\$62	\$496	2 (GS-11 or 12)	\$82	\$656	3 (GS-13 or above)	\$97	\$776
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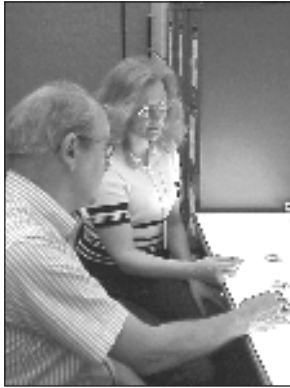
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TECHNICAL SERVICE CENTER

CONDENSED DIRECTORY OF SERVICES CONTACTS

		303-	FAX 303-
D-8000	Technical Service Center		
8002	TSC Business Manager	445-2720	445-6379
8005	TSC Environmental, Health and Safety Office	445-2600	445-6356
		445-2214	445-6328
D-8010	Client and Support Services Office		
	Dam Safety and Non-Reclamation Clients	445-2596	445-6356
	PN and GP Regions	445-3029	445-6356
	MP Region, S&T Program, and OPPS	445-3607	445-6356
	LC and UC Regions, Commissioner's Office, and Native American Program	445-2596	445-6356
8011	Technical Communications Group	445-2603	445-6356
8012	Visual Presentations Group	445-2572	445-6352
		445-2614	445-6357
D-8100	Civil Engineering Services Division		
8110	Structural Analysis Group	445-3111	445-6379
8120	Structural and Architectural Group	445-3267	445-6489
8130	Waterways and Concrete Dams Group	445-3267	445-6489
8140	Water Conveyance Group	445-3235	445-6490
8160	Construction Management Group	445-3118	445-6491
8170	Estimating, Specifications, and Value Program Group	445-3287	445-6492
8180	Materials Engineering and Research Laboratory Group	445-3076	445-6475
		445-2375	445-6341
D-8200	Environmental Services Division		
8210	Ecological Planning and Assessment Group	445-2698	445-6379
8220	Ecological Research and Investigations Group	445-2232	445-6328
8230	Water Treatment Engineering and Research Group	445-2178	445-6328
8260	Remote Sensing and Geographic Information Group	445-2260	445-6329
8270	Economics Group	445-2267	445-6337
8290	Fisheries Applications Research Group	445-2724	445-6380
		445-2112	445-6328
D-8300	Geotechnical Services Division		
8311	Geotechnical Engineering Group 1	445-2953	445-6472
8312	Geotechnical Engineering Group 2	445-2976	445-6472
8313	Geotechnical Engineering Group 3	445-2768	445-6472
8320	Engineering Geology Group	445-2986	445-6472
8323Y	Yucca Mountain Mapping Group	445-3193	445-6507
8330	Seismotectonics and Geophysics Group	702-295-4088	702-295-2626
8340	Earth Sciences and Research Laboratory Group	445-3161	445-6478
8350	Geotechnical Computer and Technical Support Group	445-2330	445-6341
		445-2974	445-6472
D-8400	Infrastructure Services Division		
8410	Mechanical Equipment Group	445-2828	445-6468
8420	Hydraulic Equipment Group	445-2855	445-6469
8440	Electrical Design Group	445-2874	445-6469
8450	Hydroelectric Research and Technical Services Group	445-	445-6420
8460	Structural Behavior and Instrumentation Group	445-2300	445-6304
8470	Inspections and Emergency Management Group	445-3052	445-6473
		445-2742	445-6381
D-8500	Water Resources Services Division		
8510	River Systems and Meteorology Group	445-2120	445-6351
8520	Water Supply, Use, and Conservation Group	445-2470	445-6351
8530	Flood Hydrology Group	445-2526	445-6351
8540	Sedimentation and River Hydraulics Group	445-2546	445-6351
8550	Ground Water and Drainage Group	445-2550	445-6351
8560	Water Resources Research Laboratory Group	445-2505	445-6351
8561	Laboratory Shops	445-2151	445-6324
8570	Land Suitability and Water Quality Group	445-2167	445-6324
8580	Resource Management and Planning Group	445-2167	445-6324
		445-2453	445-6351
		445-2703	445-6780
D-2100	International Affairs (Commissioner's Office)		
	Leanna Principe, Team Leader	445-2127	445-6322

D-8000 TECHNICAL SERVICE CENTER



Michael J. Roluti 303-445-2720 **Director, Technical Service Center**

D-8002 - TSC Business Manager

Tom Luebke 303-445-2600

D-8005 - TSC Environmental, Health and Safety Office

George Taylor 303-445-2214

D-8010 - Client and Support Services Office

Al Bourland 303-445-2596

PN and GP Regions

MP Region, Science and Technology (S&T)
Program, and Office of Program
and Policy Services (OPPS)

LC and UC Regions, Commissioner's Office,
and Native American Affairs

Dam Safety and Other Government Agencies

Barb Schuelke 303-445-3607

Al Bourland 303-445-2596

Tom Mitchell 303-445-2603

Betty Dinneen 303-445-3029

D-8011 - Technical Communications Group

Joe Carriero 303-445-2572

D-8012 - Visual Presentations Group

Doug Smith 303-445-2614

D-8000 TECHNICAL SERVICE CENTER
– MICHAEL J. ROLUTI, DIRECTOR

The Technical Service Center provides Reclamation- and Interior Department-wide scientific, applied research, and engineering services related to water resources management support; and provides technical support for broad areas of water and power resources management, including geotechnical engineering, dam safety, civil engineering, environmental engineering, mechanical and electrical engineering, social and environmental science, and laboratory services.

D-8002 TSC BUSINESS MANAGER
– TOM LUEBKE

The Business Manager advises management on business strategies and tactics necessary for the successful operation of the TSC. Key aspects of TSC business include operating costs, billing rates, markets, staffing, outsourcing, and project delivery. Performance measures are developed, monitored, and reported on a real-time basis to aid individual managers in the implementation of the annual TSC business plan.

D-8005 TSC ENVIRONMENTAL, HEALTH AND SAFETY OFFICE
– GEORGE TAYLOR

This office has a full-time Industrial Hygienist as Health and Safety Manager and a full-time Safety Program Specialist. Environmental, industrial hygiene, occupational health, and safety services are provided to meet Federal, State, and local government regulations. Consultative services are available to Interior bureaus and other Federal agencies through an Interagency Agreement.

D-8010 CLIENT AND SUPPORT SERVICES OFFICE
– AL BOURLAND

Client Liaison staff and areas represented:

BARB SCHUELKE	Pacific Northwest and Great Plains Regions
AL BOURLAND	Mid-Pacific Region, Science and Technology (S&T), and Office of Program and Policy Services (OPPS)
BETTY DINNEEN	Dam Safety Office, Bureau of Indian Affairs, Security Program, and Non-Reclamation Clients
TOM MITCHELL	Lower Colorado and Upper Colorado Regions, Commissioner's Office, and Native American Program

Client Liaisons coordinate workflow activities between the TSC and our clients. They are the primary points of contact for initiating work within multiple technical groups.

Client Liaisons are involved in the following activities:

- Facilitating communication between clients and TSC teams
- Verifying product quality and client satisfaction
- Identifying the technical groups needed to perform the work
- Developing service agreements
- Monitoring schedules and budgets for ongoing work
- Distributing monthly management reports to clients and TSC team leaders
- Coordinating administrative functions such as establishing charge numbers

D-8011 TECHNICAL COMMUNICATIONS GROUP
– JOE CARRIERO

This group provides professional publishing services including writing, editing, designing, desktop publishing, and formatting documents to enhance the communications of Reclamation and non-Reclamation clients.

The TCG writes and edits text in a variety of media including:

- Technical reports
- Environmental documents including environmental impact statements
- Manuals and handbooks
- Journal articles and proceedings
- Presentations and speeches
- Video scripts
- Web sites
- Exhibits and interpretive text
- Brochures
- Policy, instructional, and other nontechnical documents

The TCG staff includes technical writers, editors, and editorial assistants with extensive writing and editing experience, varied technical backgrounds, and broad knowledge of Reclamation policies, procedures, and projects. The group works closely with the Visual Presentations Group (D-8012) to produce well-written, attractive, professional documents and web pages.

D-8012 VISUAL PRESENTATIONS GROUP
– DOUGLAS SMITH

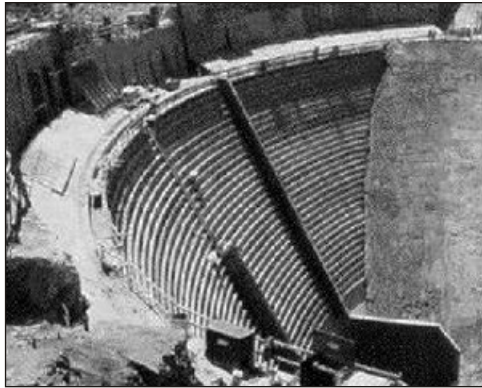
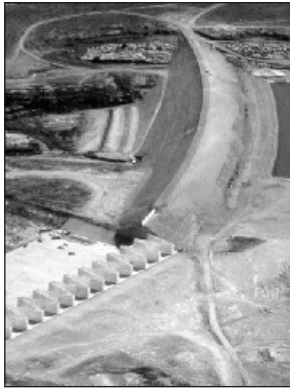
This group provides professional graphic services for publications, presentations, exhibits, visitor center redesigns, and other media and formats. The group also provides drawing support for all Reclamation offices and for other agencies.

Some of the group's unique services include:

- CD mastering and duplication
- Video editing and reformatting
- Web page design and modification
- Multimedia enhancements
- Convert hardcopy documents into electronic formats
- Create documents using optical character recognition (OCR) applications
- Electronic graphic presentations

The Visual Presentations Group performs graphics work for all types of printed materials. Working closely with the Technical Communications Group (D-8011), this group helps clients create the most professional looking publications possible. The group's presentation graphics work involves designing, developing, preparing, and producing visual graphics for meetings, conferences, displays, litigation cases, and other formats. Staff prepares technical engineering specifications drawings for all engineering and scientific disciplines. This group also completes as-built drawings, revises current drawings, and converts manual drawings to electronic form. All graphic and drawing work is accomplished using the latest imaging, desktop publishing, and CADD hardware and software. Methods of production, from the traditional to the latest technologies, are available.

D-8100 Civil Engineering Services Division



Lowell Pimley, Division Chief 303-445-3111

D-8110 - Structural Analysis Group

Thom Fisher 303-445-3267

D-8120 - Structural and Architectural Group

Thom Fisher 303-445-3267

D-8130 - Waterways and Concrete Dams Group

John LaBoon 303-445-3235

D-8140 - Water Conveyance Group

Richard Fuerst 303-445-3118

D-8160 - Construction Management Group

Richard Grotzke 303-445-3287

D-8170 - Estimating, Specifications, and Value Program Group

Bob Baumgarten 303-445-3076

D-8180 - Materials Engineering and Research Laboratory Group

Dave Harris 303-445-2375

D-8110 STRUCTURAL ANALYSIS GROUP

– THOM FISHER

This group provides specialists in the field of structural analysis and evaluation of concrete arch, multiple arch, gravity, and buttress dams; powerplants; pumping plants; and other buildings.

The group's expertise and background include structures constructed of:

- Mass concrete
- Roller compacted concrete
- Reinforced and prestressed concrete
- Steel
- Timber
- Masonry

The Structural Analysis Group provides team leaders for multidisciplinary teams. Individuals in the group, serving as team members, conduct, review, or consult on dynamic and static analyses to support studies and designs related to new structures, safety evaluations of existing dams or buildings, and modifications to existing structures. The group has expertise in the use of complex two- and three-dimensional static and dynamic numerical analyses, including the finite element method.

The group includes the Reclamation Building Seismic Safety Program which, through the use of state-of-the-art earthquake engineering codes and practices, identifies and mitigates unacceptable seismic risks in Reclamation-owned buildings.

D-8120 STRUCTURAL AND ARCHITECTURAL GROUP

– THOM FISHER

This group of senior engineers, architects, and landscape architects provides special services including:

- Project management, scheduling, and budgeting services
- Project planning and design
- Project analysis and programming
- Construction support and inspections
- Structural evaluation of existing facilities, including structures made of:
 - Reinforced and unreinforced concrete

- Steel frame
- Masonry
- Timber frame
- Precast and prestressed concrete
- Earth retaining walls
- Post-occupancy evaluations
- Training in Reclamation design procedures and practices
- Evaluation and assessment of buildings for seismic loading capacity
- Evaluation, assessment, design, and retrofit design of buildings and recreation facilities for accessibility compliance in accordance with provisions of the Uniform Federal Accessibility Standards (UFAS) and the Americans with Disabilities Act Accessibility Guidelines (ADAAG)
- Evaluation, design, and retrofit design of buildings and recreation facilities for Life Safety Code compliance in accordance with provision for the latest version of the National Fire Protection Code 101 (NFPA 101 – Life Safety Code)
- Technical assistance and guidance during the design and construction process of buildings and recreation facilities for accessibility and Life Safety Code compliance

The Structural and Architectural Group is composed of licensed structural analysis and design engineers, architects, and landscape architects. Group members use their internationally recognized experience, knowledge, and skills in several fields including powerplant and pumping plant design, modification, and rehabilitation; visitor center design; office building and educational facility design; wetlands design; switchyard and substation design; community and residential redevelopment; and historic preservation considerations and evaluations.

D-8130 WATERWAYS AND CONCRETE DAMS GROUP
– JOHN H. LABOON

This group specializes in structural and hydraulic analyses, evaluations, and designs of appurtenant structures (such as spillways and outlet works) for both concrete and embankment dams. Also, the group works in concert with the Structural Analysis Group when designing or evaluating new and existing concrete dams. Typical structures analyzed, evaluated, or designed are composed of mass concrete, roller compacted concrete, and reinforced concrete. The group analyzes, evaluates, and designs new structures and rehabilitates, removes, replaces, and upgrades existing structures.

The Waterways and Concrete Dams Group has the expertise to effectively undertake and complete technical work, ranging from long-term, complex activities to quick-turn-around activities. A large portion of the group's experience relates to safety of dams modifications to existing structures.

D-8140 WATER CONVEYANCE

– RICHARD FUERST

This group provides engineering services to Reclamation and other government agencies for design and analysis of water conveyance systems, river improvements, and roads and bridges. D-8140 performs work on:

- Irrigation and power canals and associated structures
- Transmission pipelines, pipe distribution systems, and pipeline control systems
- Tunnels, underground chambers, and shafts for all purposes
- Fish facilities (screens, ladders, and lifts)
- Hydraulic transient analysis (open channel and closed conduit)
- Water diversion structures
- Wetlands water conveyance features
- Factory inspections for bridge girders and pipe

The Water Conveyance Group also provides engineering support for inspection and rehabilitation of existing facilities, including open channels, canal automation and control systems, roads, bridges, tunnels, underground structures, diversion dams, and pipelines.

In concert with diverse professional disciplines from the TSC and other Reclamation offices, the group provides planning engineering services to integrate physical resources and environmental intangibles into viable alternative solutions.

D-8160 CONSTRUCTION MANAGEMENT GROUP

– RICHARD GROTZKE

This group provides construction management, scheduling, claims analysis, project management, project administration, and equipment inspection services. Specific activities performed include:

- Constructability and specifications reviews, and facility needs and damage assessments
- Oversight/review of construction activities, inspection, and quality assurance
- Construction scheduling, tracking, and time impact analyses
- Preparing detailed construction logic diagrams and as-built schedules
- Contract dispute analysis, claims resolution management, and litigation support
- Developing and monitoring detailed workplans, budgets, and schedules

- Preparing contract correspondence and reviewing contractors' submittals
 - Coordination between clients, designers, contractors, manufacturers, and suppliers
 - Environmental restoration (hazardous waste sites) construction activities
-

D-8170 ESTIMATING, SPECIFICATIONS, AND VALUE PROGRAM GROUP
– BOB BAUMGARTEN

This group prepares Independent Government Cost Estimates (IGCE) at the appraisal, feasibility, concept, prevalidation, engineers estimate, and contract modification levels. Services include preparing or reviewing detailed cost estimates, providing support for negotiated procurement, and analyzing bids and proposals. The group tracks cost indexes, which provide a rapid means of determining the current cost of construction of various properties based on previous estimates.

The Estimating, Specifications, and Value Program Group coordinates, prepares, and reviews technical specifications for a variety of purposes:

- To maintain, rehabilitate, and improve water conveyance systems infrastructure, powerplant and pumping plant structures, substations, and switchyards
- To modify embankment dams and concrete dams for safety; to rehabilitate and improve roads and bridges
- To clean up hazardous waste sites; and for plants and architectural buildings

The group also maintains selected guide specifications.

D-8170 coordinates and manages Reclamation's Value Engineering/Value Analysis (VE/VA) Program. Where appropriate, the group promotes the use of VE/VA to serve as a management tool, to ensure realistic budgets, to identify and remove nonessential capital and operating costs, and to improve and maintain optimum quality of program and acquisition functions. Value Program staff provide training to Reclamation staff who carry out VE/VA operations, lead VE studies, and provide consultation.

D-8180 MATERIALS ENGINEERING AND RESEARCH LABORATORY GROUP
– DAVE HARRIS

This group specializes in the technology of engineering materials used in Reclamation facilities. It provides a wide variety of services and assistance related to engineering materials.

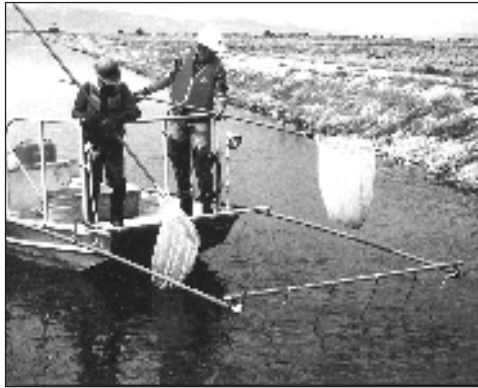
The Materials Engineering and Research Laboratory Group is divided into five subgroups that work in different areas:

- A Corrosion Technology Group investigates corrosion and analyzes data to prevent, detect, control, and mitigate corrosion of old and new Reclamation water conveyance structures. The group also designs and specifies corrosion monitoring and cathodic protection systems.
- A Coatings Technology Group conducts applied research to provide industry mandated, environmentally acceptable, low-cost, durable coatings and the safe removal of coatings systems no longer environmentally acceptable. The group also provides technical and troubleshooting assistance related to paints and protective coatings.
- A Plastics Technology Group conducts applied research to evaluate new, improved, or conventional materials and methodologies to effect more economical construction, less frequent maintenance, and new repair or design approaches. The group also provides technical and troubleshooting expertise related to the proper use of geosynthetic/polymeric materials (sealants, waterstops, roofing, gaskets, and plastic pipe).
- A Concrete Technology Group evaluates and tests concrete materials, prepares and reviews specifications, and provides concrete mixture proportions for unusual design or construction requirements. It also provides concrete technology training, supplies inspection and calibration services, and assists with procurement of unique testing equipment.
- A Concrete Repair Group provides guidance and technical advice in failure analysis, condition assessment, maintenance, repair, rehabilitation, and preservation of concrete infrastructure. Historic preservation expertise is available for concrete and other structures, including stone and adobe. The group also provides prehistoric ruin and site stabilization expertise.

Standard and customized testing is available in the areas listed above. Special equipment includes a 5-million-pound universal large-scale testing machine, a vibration laboratory, walk-in environmental and adiabatic test chambers, and an indoor aggregate plant.

D-8200

ENVIRONMENTAL SERVICES DIVISION



Bill Karsell, Division Chief 303-445-2698

D-8210 - Ecological Planning and Assessment Group

Michael Armbruster 303-445-2232

D-8220 - Ecological Research and Investigations Group

G. Chris Holdren 303-445-2178

D-8230 - Water Treatment Engineering and Research Group

M. Kevin Price 303-445-2260

D-8260 - Remote Sensing and Geographic Information Group

Mike Pucherelli 303-445-2267

D-8270 - Economics Group

Bob Hamilton 303-445-2724

D-8290 - Fisheries Applications Research Group

Diana Weigmann 303-445-2112

D-8210 ECOLOGICAL PLANNING AND ASSESSMENT GROUP

– MICHAEL ARMBRUSTER

This group conducts habitat assessments and other environmental analyses. It also provides a variety of services associated with fish and wildlife resource management. These studies and services are generally associated with compliance issues under the National Environmental Policy Act, Endangered Species Act, Fish and Wildlife Coordination Act, Clean Water Act, and other environmental legislation.

The Ecological Planning and Assessment Group performs a variety of activities. Recent and ongoing activities include:

- Endangered species surveys and movement studies
- Grazing studies in riparian communities
- Instream flow studies
- Telemetry studies of female brown-headed cowbirds
- Habitat restoration of mine and riparian studies
- Preparation of environmental impact studies and biological assessments

D-8210 staff can provide expertise in various phases of habitat assessment including study design, data collection, analyses, report preparation, and mitigation monitoring and restoration oversight.

D-8220 ECOLOGICAL RESEARCH AND INVESTIGATIONS GROUP

– G. CHRIS HOLDREN

This group uses applied research to examine the interrelationships between the environment and regulated aquatic systems. The group helps Reclamation staff, stakeholders, and cooperators to understand environmental conditions and issues, develop measures to protect and enhance water quality, and recommend solutions to improve water deliveries. The group designs wetlands for water treatment and wildlife habitat, provides techniques to control the spread of exotic or invasive species, and provides the necessary laboratory support for related chemical analyses.

The Ecological Research and Investigations Group's specialized expertise includes:

- Analytical chemistry
- Aquatic ecology
- Aquatic plant management
- Aquatic pest control
- Bioassessment

- Reservoir management
- Water quality
- Wetlands

D-8220's specialized resources and equipment include biological chemical laboratories, a greenhouse for plant and aquatic weed studies, boats, and extensive monitoring and collection equipment.

D-8230 WATER TREATMENT ENGINEERING AND RESEARCH GROUP
– M. KEVIN PRICE

This group researches and designs desalination, water treatment, and wastewater treatment systems. These systems remediate water containing hazardous chemicals and compounds to meet current requirements including the Safe Drinking Water Act, Clean Water Act, and quality requirements for water reuse or discharge. The group's work includes researching pretreatment biocides for membrane storage, membrane cleaning, methods for reducing fouling, and reducing operation and maintenance costs. Research contracts with universities and private industry are managed to cost-share research studies and testing projects.

The Water Treatment Engineering and Research Group's services include:

- Water treatment operation and maintenance workshops and design assistance
- Research studies and laboratory tests
- Review of private architectural and engineering firm designs and specifications
- Water and wastewater treatment systems evaluation
- Retrofit designs and specifications
- Project management
- Construction support

D-8230 staff installs and tests pretreatment systems, using a mobile water treatment pilot plant, water treatment and desalting pilot plants, low-grade heat brine disposal systems, solar ponds, and solar powered pumping and desalting systems.

D-8260 REMOTE SENSING AND GEOGRAPHIC INFORMATION GROUP
– MIKE PUGHERELLI

This group designs and compiles tabular and graphic spatial databases. Basic data are gathered using existing maps, aerial photography, airborne videography, satellite imagery, and Global Positioning Systems. Information can then be extracted from these data using the analytic capabilities of geographic information systems (GIS).

A short list of applications for remote sensing and GIS available from the Remote Sensing and Geographic Information Group includes:

- Resource inventories
- Lake limnology
- Endangered fish habitat studies
- Water spreading
- Environmental change detection

Other services D-8260 staff provides include high resolution scanning, plotting maps/drawings, and GIS and remote sensing training.

D-8270 ECONOMICS GROUP
— BOB HAMILTON

This group performs a wide range of water resource-related economic and financial analyses to answer questions regarding: economic justification (*Do the monetary benefits of a proposed action exceed the costs?*), economic impacts (*How does a proposed action impact an area's economic base?*), and financial feasibility (*How should costs be allocated among beneficiaries?*).

The Economic Group's services include:

- Deriving benefit-cost analyses for feasibility studies
- Applying economic models to estimate impacts in environmental impact statements
- Computing the ability-to-pay of irrigators and rural domestic water users
- Determining the value of environmental resources such as wetlands and endangered species
- Determining recreation use benefits
- Evaluating actions affecting Native Americans
- Preparing project final cost allocations
- Developing economic standards for land classification
- Economic decisionmaking for the Safety of Dams Program

D-8270's staff includes agricultural and natural resource economists, all with advanced degrees and many years of experience.

D-8290 FISHERIES APPLICATIONS RESEARCH GROUP

– DIANA WEIGMANN

This group conducts investigations to understand and develop technologies to sustain fish communities associated with Reclamation's water development facilities and operations. Research and design engineers work together to develop new methods to protect aquatic resources.

The Fisheries Applications Research Group provides specific research and services, including:

- Evaluating habitat needs and upstream-downstream movements for native and rare species
- Investigating fishery interactions with Reclamation operations
- Assessing and designing fish protection technology (fishways, fish louvers, crowders, and screens)
- Evaluating new fish screening technology and other fish protection methods for irrigation canal diversions
- Determining methods for separating and removing debris, invasive species (including exotic mitten crabs), and other unwanted materials from fish at facilities
- Developing a fish friendly pumping technology for water diversions
- Performing environmental chemistry and water quality analyses and interpretations
- Designing biological and fisheries computer models

D-8290's specialized resources include laboratory research and aquaculture facilities.

D-8300 Geotechnical Services Division



Rich Throner, Division Chief 303-445-2953

D-8311 - Geotechnical Engineering Group 1

Bob Dewey 303-445-2976

D-8312 - Geotechnical Engineering Group 2

Chuck Redlinger 303-445-2768

D-8313 - Geotechnical Engineering Group 3

Perry Hensley 303-445-2986

D-8320 - Engineering Geology Group

Vacant 303-445-3193

D-8323Y - Yucca Mountain Mapping Group

Steve Beason 702-295-4088

D-8330 - Seismotectonics and Geophysics Group

Jerry Wright 303-445-3161

D-8340 - Earth Sciences and Research Laboratory Group

Tom Lippert 303-445-2330

D-8350 - Geotechnical Computer and Technical Support Group

Don Serina 303-445-2974

D-8310 GEOTECHNICAL ENGINEERING GROUPS

D-8311 GROUP 1 – BOB DEWEY

D-8312 GROUP 2 – CHUCK REDLINGER

D-8313 GROUP 3 – PERRY HENSLEY

These groups provide cost-effective geotechnical studies and analyses for a wide range of projects including exploration and lab testing programs, site characterization, and foundation analyses. The groups also prepare designs and specifications and provide experienced team leaders to lead multidisciplinary teams.

The Geotechnical Engineering Groups' projects include:

- Embankment dams and foundations (new construction and dam safety modifications)
- Foundation and excavation design for concrete dams, civil structures, canals, pipelines, and related features
- Hazardous waste sites, including remediation and removal actions
- Tailings dams
- Natural soil and rock slopes, including landslides
- Underground excavations

The highly experienced geotechnical engineering staff also has specialized expertise in the areas of static and dynamic (earthquake loading) stability analyses of embankments and natural slopes; numerical modeling of structures and foundations; groundwater, dewatering, and seepage analyses related to structures; geosynthetics design; security-related evaluations; risk analyses; applied rock mechanics for foundations, slopes, and tunnels; and acid-mine drainage and hazardous waste studies, remediation, and restoration techniques. Members of the groups also participate on the Risk Analysis Cadre for Dam Safety related studies, procedures, and facilitation of risk-based analyses.

D-8320 ENGINEERING GEOLOGY GROUP

– VACANT

This group leads planning, executing, and coordinating geologic site characterization activities and evaluates and portrays geological and geotechnical conditions. Geologic services are integrated with seismotectonic and geophysical studies.

The Engineering Geology Group provides a range of services, including:

- Field mapping and subsurface exploration and sampling
- Close-range stereographic geologic mapping

- CAD and CADD three-dimensional modeling using GIS, GPS, and related databases for subsurface conditions, pollutants, and other physical data
- Geologic/geotechnical interpretations for planning, design, and specifications
- Foundation mapping and approval during construction
- Geologic analyses for rock mechanics issues, blasting and grouting programs, foundations, borrow investigations, seepage studies, dewatering systems, and environmental restoration

The Engineering Geology Group's investigation and analysis expertise includes dams; water conveyances; bridge, building, and plant foundations; excavation stability; landslide studies; and characterizing sites for hazardous and toxic wastes. The Group has broad expertise in technical project management.

D-8323Y YUCCA MOUNTAIN MAPPING GROUP

The Yucca Mountain Mapping Group, headed by Steve Beason, is located in Las Vegas, Nevada. This group provides engineering geologic services to the Department of Energy and U.S. Geological Survey (USGS) for characterization of Yucca Mountain to determine the suitability of long-term storage of spent nuclear fuel and high-level radioactive wastes. The group also provides data and input into geology related issues of the repository design being conducted by the Department of Energy's management and operations contractor.

The Yucca Mountain Mapping Group's services include:

- Full-peripheral geologic mapping
- Stereographic photography
- Consolidated sampling
- Detailed line surveys
- Geotechnical, geologic, and engineering geology investigations
- Data presentations
- Foundation investigations

The group is now working with USGS scientists to produce a report summarizing the fracture and lithophysal characteristics of the repository host horizon. The paper will summarize the results of 15+ years of detailed structural and lithostratigraphic studies at Yucca Mountain in preparation for the Department of Energy's license application for the nation's first high-level, nuclear-waste storage facility.

D-8330 SEISMOTECTONICS AND GEOPHYSICS GROUP

– JERRY WRIGHT

This group provides specialized geological, geomorphological, seismological, and geophysical expertise for site-specific and regional earthquake and geomorphology studies, Quaternary geology, and engineering geophysics.

Information and services that the Seismotectonics and Geophysics Group provide include:

- Natural hazards for risk analysis through probabilistic earthquake hazard studies
- Numerical and statistical analysis and modeling, including software for flood-frequency analysis, two- and three-dimensional flow modeling, ground motion synthesis, and seismic tomography
- Earthquake loadings, including site-specific ground motions and response spectra
- Probabilistic risk analyses for dam safety and design evaluations
- Seismic monitoring of Reclamation facilities for real-time structural response information for post-earthquake assessment and emergency notification
- Paleoseismic and paleoflood investigations to define earthquake and flood hazards
- Geomorphology, geomorphological processes, and Quaternary history for stream evaluation and restoration, site characterization, environmental impact, and other investigations
- Complete geophysical site characterization services including data acquisition, processing, analysis, and integration with borehole and other geologic and hydrologic information
- Surface, borehole, cross-hole, and surface-to-borehole geophysical surveys to determine a wide range of subsurface physical properties and conditions, including centimeter-level global positioning system surveys in support of scientific and engineering investigations

The group directly operates regional seismic networks in the western United States and maintains an extensive network of digital and analog strong-motion recorders.

D-8340 EARTH SCIENCES AND RESEARCH LABORATORY GROUP

– TOM LIPPERT

This group performs studies related to soil, rock, and foundation materials used for Reclamation structures. They help plan and execute hazardous waste site removal actions, investigations and designs, feasibility studies, and construction oversight.

The Earth Sciences and Research Laboratory Group's geotechnical and geoenvironmental analytical services include:

- Laboratory and field sampling and testing using specialized groundwater and soil sampling equipment (e.g., cone penetrometer testing, surface and downhole applications, and rock mechanics applications)
- Evaluating materials and solving problems related to design, construction, and research
- Resolving subsurface contaminant problems
- Performing detailed contaminant transport and fate analyses for geotechnical solutions to subsurface contamination problems
- Laboratory and field testing of engineering materials

D-8340's special equipment includes a 1-million-pound stiff testing machine, 300-kilovolt X-ray machine, large triaxial shear facility for soils, large direct-shear machines for testing up to 10-inch-diameter rock and concrete cores and 12- by 12-inch soil and soil-geosynthetic interfaces, and an ultrasonic nondestructive testing machine. Petrographic instruments available include petrographic- and stereo-microscopes, an X-ray diffractometer, and a scanning electron microscope.

**D-8350 GEOTECHNICAL COMPUTER AND TECHNICAL SUPPORT
 GROUP
 – DON SERINA**

This group provides technical and computer services and support to the geotechnical, geological, and geophysical groups in D-8300 and to other groups throughout Reclamation.

The Geotechnical Computer and Technical Support Group is integrated with the Geotechnical Services groups to support a wide variety of activities including:

- Two- and three-dimensional analyses for design representations
- Computer support services for technical workstations and unique applications
- Computer aided design and drafting (CADD)
- Three-dimensional terrain modeling of surface and subsurface features and properties
- Contouring surfaces and developing surfaces and presentation of alignments, profiles, and cross sections
- GPS surveys and map creation
- Image processing
- Slope stability analysis

D-8350's staff members include highly trained technicians and scientists with significant experience in the geotechnical, geological, and geophysical fields.

D-8400 Infrastructure Services Division



Mark W. Boyle, Division Chief 303-445-2828

D-8410 - Mechanical Equipment Group

Bob Todd 303-445-2855

D-8420 - Hydraulic Equipment Group

Dan Drake 303-445-2874

D-8440 - Electrical Design Group

Vacant 303-445-

D-8450 - Hydroelectric Research and Technical Services Group

Bert Milano 303-445-2300

D-8460 - Structural Behavior and Instrumentation Group

DeWayne Campbell 303-445-3052

D-8470 - Inspections and Emergency Management Group

Chris Veesaert 303-445-2742

D-8410 MECHANICAL EQUIPMENT GROUP

– BOB TODD

This group provides engineering services for mechanical equipment and systems. The Mechanical Equipment Group develops budget estimates, design and technical specifications, and quantitative material estimates. They also provide factory inspection and equipment installation expertise; operation and maintenance support; analysis of flow induced vibration of structures; fracture mechanics and fatigue life studies; finite element studies; and startup, operational, and troubleshooting tests.

Systems that the Mechanical Equipment Group designs and services include:

- Compressed air systems, plumbing, cooling water, domestic and water systems
- Oil purification, fire suppression, HVAC, and hydraulic valve-operating equipment
- Engine generators
- Trashrakes, conveyors, and traveling water screens
- Fish and moss screens and fish handling equipment
- Water temperature control devices and selective withdrawal systems
- Instrumentation flow meters and temperature sensors
- Stoplogs, draft tube gates, and bulkhead gates

D-8420 HYDRAULIC EQUIPMENT GROUP

– DAN DRAKE

This group provides mechanical engineering services for water delivery equipment. Engineering services include budget estimating, design, and specifications writing, as well as equipment installation and field assistance.

The Hydraulic Equipment Group's services include engineering analysis and design for:

- Hydraulic transients in power system waterways including stress analysis
- General stress analysis for large gates, turbine/pumps, and other equipment
- Equipment life analysis using field test data, fatigue analysis, and fracture mechanics
- Onsite testing for pumps and turbines during new equipment startups
- Performance testing for pumps and turbines to confirm warranted characteristics

The D-8420 staff works on a variety of equipment including pumps, hydroelectric turbines, pump-turbines, and turbine governors; large custom-designed gates and commercial slide gates; sleeve, hollow-jet, and butterfly valves; and steel penstocks.

D-8440 ELECTRICAL DESIGN GROUP
– VACANT

This group provides designs, drawings, technical specifications, and construction/installation support for plant electrical equipment and/or systems.

The Electrical Design Group's electrical engineering services include:

- Factory inspection of electrical equipment
- Warranty inspections of generators
- Commissioning (startup and acceptance testing) and wiring checkout and operational testing
- Design Summaries, Designer's Operating Criteria and Standard Operating Procedures
- Power system modeling (e.g., circuit, transient, synchronous stability, harmonic system performance, static excitation, insulation coordination, and power flow studies)
- Protective relaying recommendations, settings, and commissioning
- Support for Reclamation's Western Systems Coordinating Council obligations.

D-8440 works on many systems, including rotating machinery (generators and motors); excitation, generator/motor bus, and generator neutral grounding equipment; unit switchgear, reduced voltage starting equipment, and variable speed drives; plant station service systems including unit substations, AC/DC distribution boards, battery chargers, and batteries; control switchboards, motor control centers, and motor control boards; control, protective relaying, instrumentation, and annunciation systems; generator uprates and rewinds and plant electrical equipment modernization; lighting and fire detection and alarm systems; medium and low voltage power cable systems and control cable systems; grounding, electrical conduit, and cable tray systems; electrical features of mechanical equipment: turbines, governors, HVAC, gates, valves, cranes, and elevators; electrical substations and switchyards; wood and steel pole transmission lines; high-voltage solid dielectric, oil-filled, and gas-filled power cable systems; outdoor electrical distribution systems; power transformers and circuit breakers; real time automation and supervisor control and data acquisition systems; and voice and data communications systems.

**D-8450 HYDROELECTRIC RESEARCH AND TECHNICAL SERVICES
GROUP
– BERT MILANO**

This group provides specialized electrical and mechanical technical services to Reclamation power facilities. Services include on-site technical advice, assistance, diagnostics, analysis, troubleshooting, failure investigation, inspection, program consultation, testing, and unique in-house support services.

The group coordinates Reclamation's technical power program services and hydroelectric research efforts to focus on innovative solutions for power facilities in the following areas:

- Power apparatus (rotating machinery, power cables, transformers, etc.)
- Electronics and power electronics
- Electrical insulation systems including rotating machinery and cable systems
- Excitation systems (voltage regulators) and speed governor systems including related power system stability and controls
- Automatic generation control, water and power scheduling, plant supervisory control and data acquisition (SCADA) system evaluation and analysis, and SCADA system software support
- Mechanical components of pumping plants and hydroelectric generators including bearings, turbine runners, wicket gates, and servomotors
- Penstocks, outlet works, and associated gates and valves

D-8450's electrical capabilities include machine startup, acceptance and diagnostic testing, and system staged-fault testing; voltage regulator, power system stabilizer, and speed governor tuning; plant automation, embedded systems, and development of efficiency-based water/power control and modeling software; equipment and personal protective safety grounding evaluation; flash boundary calculations; protective relay system calibration and functional testing; plant control battery system testing; power system harmonics; electromagnetic field investigation and measurement; transformer diagnostics; in-house electrical/electronics equipment design and fabrication; machine condition monitoring; life extension; and development of related training.

Electrical and Mechanical O&M support and program services are provided in coordination with the Power Resources Office. These include Facilities Instructions, Standards, and Techniques (FIST) volumes, Power Equipment Bulletins (PEBs), power O&M reviews and incident investigations, technical advice and assistance, training, Doble testing, infrared testing services, unit alignment and balancing, mechanical governor adjustment, unit vibration testing and analysis, welding procedure analysis, penstock inspection program management, penstock guard gate and valve testing program management, pressure vessel inspection, and underwater inspection services using a remote-controlled vehicle.

This group facilitates the Power O&M Workshop for exchange of ideas and information on hydropower technical and management issues. It also maintains an extensive laboratory and research facility, which enables the group to support project needs in an efficient, cost-effective manner.

D-8460 STRUCTURAL BEHAVIOR AND INSTRUMENTATION GROUP
– DEWAYNE CAMPBELL

This group provides a wide range of instrumentation-related services for dams and other facilities.

The Structural Behavior and Instrumentation Group's services include:

- Routine dam performance monitoring including:
 - Reviewing data for validity and performance anomalies
 - Maintaining a database of visual and instrumented monitoring information
 - Reporting and presenting routine data results
- Periodic in-depth analysis of monitoring results including dam safety analysis
- Instrumentation design including:
 - Determining the type, number, location, and reading frequency of instruments required
 - Preparing drawings and specifications for procuring, installing, maintaining, and repairing instrumentation systems
 - Designing automated data collection and transmission systems for both short- and long-term monitoring
- Field assistance including instrument systems calibration, installation, and inspection; maintaining lab facilities for instrument repair, testing, calibration and assembly; troubleshooting and consulting on special problems; and providing training on instrumentation matters

D-8460's engineers and technicians have extensive experience in designing, installing, and monitoring over 70 types of instruments used to provide information in categories such as water pressure, earth/total pressure and load, deformations (internal and surface), temperature, and seepage quantity and quality. The group also has expertise developing monitoring systems for special purposes and unique applications.

D-8470 INSPECTIONS AND EMERGENCY MANAGEMENT GROUP
– CHRIS VEESAERT

This group performs a variety of activities, including:

- Coordinating and performing dam safety and operation and maintenance (O&M) inspections of Reclamation dams as a part of the Comprehensive Facility Review Program, and inspections for other Department of the Interior and other agency dams upon request
- Participating in transfer inspections of facilities from construction to O&M status
- Performing preliminary hazard classifications and hazard reassessments of low and significant hazard dams
- Providing technical advice and assistance on O&M items
- Updating the Technical Priority Ratings of all Department of the Interior dams

Emergency management specialists in D-8470 coordinate emergency management related activities with other Federal, State, and local government organizations. The group also works with Reclamation and other agencies to:

- Develop and review Emergency Action Plans
- Design, conduct, and evaluate emergency exercises
- Serve as contacts on unusual conditions and emergency situations
- Develop and provide emergency management training locally and onsite
- Provide advice, assistance, and guidance on emergency management functions
- Provide technical assistance in early warning system policy, design, implementation, exercises, reliability determination, operation and maintenance

The group regularly coordinates and provides training on dam safety, operation and maintenance, and emergency management topics to Reclamation staff and others. This training includes:

- Annual Safety Evaluation of Existing Dams (SEED) seminars for Federal, State, and private personnel, and biennial seminars for international personnel
- Onsite O&M training for dam tenders, operating personnel, and water systems managers
- Client-tailored onsite dam safety and emergency management training programs domestically and abroad

D-8470 also provides data and document management services, including:

- Development and maintenance of the Dam Safety Information System (DSIS) and the Dam Safety Document Management System (DSDaMS) databases
- Maintenance and updating of the official record copies of Standing Operating Procedures and Designer's Operating Criteria
- Development and maintenance of O&M technical standards, bulletins, and guidelines
- Maintenance of other dam safety and O&M files and databases of information, including landslide surveillance data and O&M cost trends

D-8500

Water Resources Services Division



Jim Pierce, Division Chief 303-445-2120

D-8510 - River Systems and Meteorology Group

Dave Matthews 303-445-2470

D-8520 - Water Supply, Use, and Conservation Group

Craig Albertsen 303-445-2526

D-8530 - Flood Hydrology Group

Lou Schreiner 303-445-2546

D-8540 - Sedimentation and River Hydraulics Group

Ted Yang 303-445-2550

D-8550 - Ground Water and Drainage Group

Rod TeKrony 303-445-2505

D-8560 - Water Resources Research Laboratory Group

Clifford Pugh 303-445-2151

D-8561 - Laboratory Shops

Mike McDonald 303-445-2167

D-8570 - Land Suitability and Water Quality Group

Stan Conway 303-445-2453

D-8580 - Resource Management and Planning Group

Del Holz 303-445-2703

D-8510 RIVER SYSTEMS AND METEOROLOGY GROUP

– DAVE MATTHEWS

This group performs services and conducts applied research studies tailored to Reclamation's water management needs. They develop applications of hydrologic and river systems models and hydrometeorological analysis and prediction tools to monitor and predict water supply conditions in regulated watershed ecosystems. These analyses and modeling frameworks provide advanced decision support systems (ADSS) for Reclamation's water managers and planners at area and regional offices, where timely, accurate, and concise information is required for day-to-day decisions and long-term planning. The group collaborates with other agencies and research laboratories to add value to existing and emerging products, including NEXRAD radar precipitation estimates and the Snow Estimation and Updating System, for water supply forecasts. They also tailor these products for Reclamation needs.

Areas of technical expertise in the River Systems and Meteorology Group include:

- Integrated river systems management and reservoir operations
- Hydrologic forecasting—snowpack runoff, precipitation/evapotranspiration
- Hydroclimatic variability—El Niño, extreme events
- Flood control operations
- System optimization
- Assistance and training in hydrologic investigations and application of ADSS
- Collection and dissemination of hydrometeorological data
- NEXRAD radar measurements of precipitation
- Agricultural meteorology and water conservation applications

D-8510's staff includes hydraulic engineers, meteorologists, systems analysts, computer programmers, and statistical experts.

D-8520 WATER SUPPLY, USE, AND CONSERVATION GROUP

– CRAIG ALBERTSEN

This group is responsible for technical activities supporting water supply availability and dependability, efficient water use, and river and project operations. These functions cover the resource management aspects of water supply, requirements, use, and rights; legal and institutional constraints; water conservation; improved water management; conjunctive relationships between surface and groundwater; and complex relationships associated with hydrologic watershed analysis.

The group also develops and applies new methods for hydrologic investigation, analysis, and studies, including advanced techniques and systems for natural resource data management and analysis.

The Water Supply, Use, and Conservation Group:

- Conducts hydrologic investigations and studies
- Provides Reclamation-wide technical guidance on hydrologic studies
- Reviews studies containing hydrologic information for technical adequacy
- Develops technical standards and guidelines for hydrologic analyses and studies
- Develops and applies improved hydrologic data collection, retrieval, and analysis
- Provides other agencies and governments with technical training and assistance
- Conducts research into new methodology for hydrologic investigations and analysis

D-8530 FLOOD HYDROLOGY GROUP
— LOU SCHREINER

This group provides technical investigations, designs, reviews, and related work in flood hydrology and hydrometeorology.

The Flood Hydrology Group provides information on a range of flood-related hydrology including:

- Extreme precipitation and extreme flood event studies up to the probable maximum flood
- Hydrologic input for risk assessments of dams
- Inflow design hydrographs and cross-drainage analyses
- Flood frequency and statistical hydrological analyses
- Early warning system planning, design, installation, and maintenance
- Drought index development and application, hydrometeorology, and hydrology research
- Various other activities associated with flood hydrology
- Conducting fluvial geomorphology studies and paleohydrologic investigations

D-8530 staff provides expertise for the hydrological aspects of Reclamation's Dam Safety Program and services to other Department of the Interior agencies as well. They also develop flood hydrology, hydrometeorology, and dam safety standards and criteria and coordinate these with other Federal agencies.

D-8540 SEDIMENTATION AND RIVER HYDRAULICS GROUP

– TED YANG

This group conducts studies on how rivers and reservoirs respond to various actions through changes in riverflow, sediment supply, or channel modification. Studies are prepared for a variety of purposes including operation and maintenance, fish and wildlife habitat restoration, and water conveyance. Many studies focus on Reclamation facilities; their impacts on river flow and sediment; and their implications for fish and wildlife habitat, recreation, wetlands, and cultural resources.

The Sedimentation and River Hydraulics Group's functions include conducting:

- Dam break inundation studies and maps for emergency planning, hazard classification, and guiding the selection of risk reduction alternatives at unsafe dams
- Studies of river channel aggradation, degradation, and stability
- Reservoir sedimentation studies and field surveys
- Studies of sediment sources and watershed erosion control
- River hydraulic and sediment transport modeling studies
- Inundation mapping, hazard classification, and input to the dam safety program
- River restoration and stabilization studies
- Studies of the sediment dynamics associated with dam removal
- Technical guides and instructions

D-8540's staff members specialize in sedimentation, river hydraulics, geomorphology, river mechanics, and computer modeling. The group often participates in interdisciplinary and interagency teams studying ecological systems.

D-8550 GROUND WATER AND DRAINAGE GROUP

– ROD TEKRONY

This group provides services related to drainage and groundwater activities including planning, operation and maintenance, design, and construction. The group develops and conducts investigation and implementation programs for a wide variety of groundwater issues. These programs involve aquifer testing and analysis, wellhead protection, dewatering systems, subsurface and drainage systems, aquifer recharge and recovery systems, remediation of contaminated groundwater systems, and groundwater components for wetlands.

The Ground Water and Drainage Group's services include:

- Designing wells and well fields
- Modeling groundwater flow and contaminant transport
- Conducting drainage investigations and designing subsurface drainage systems
- Conducting canal seepage tests and analyses
- Providing support for construction and operation and maintenance of subsurface drainage systems and wells
- Providing expert witness and/or technical advice on drainage and groundwater issues
- Analyzing interaction between surface and groundwater

D-8550's staff includes engineering and geology specialists in design, construction, and operation of wells and pipe drains, monitoring and testing of aquifers and canal seepage, groundwater modeling techniques, and design of construction dewatering systems. D-8550 uses a CME 45 drill rig, equipped with 50 feet of hollow stem augers and 50 feet of flight augers. The group has a complement of specialized equipment for use in soil sampling, hydraulic conductivity testing, and aquifer testing.

D-8560 WATER RESOURCES RESEARCH LABORATORY GROUP
— GRIFF PUGH

This group provides application-based solutions and new water resource management tools for Reclamation managers using hydraulics and fluid mechanics. Hydraulic analysis and testing are employed through physical modeling, computer modeling, field investigations, and analytical studies.

Project specific investigations, training, and research include:

- Water conservation (e.g., canal automation, water measurement methods and field evaluation, groundwater and drainage modeling, and water management research)
- Environmental hydraulics (e.g., reservoir selective withdrawal, fish protection and passage, aquatic habitat restoration, water quality, river sediment flushing, reservoir and river sedimentation related to hydraulic structures, and erosion control)
- Testing and evaluation of hydraulic systems (e.g., hydraulic design, operation and maintenance troubleshooting, and hydraulic structures and machinery improvements)
- Dam safety (e.g., development and evaluation of dam safety tools including emergency spillways, dam-overtopping protection, and rock and alluvium scour)

The engineers and technicians in the Water Resources Research Laboratory work on over 100 projects per year. Some recent projects include model studies to incorporate new valves,

which were invented in the WRRL, into Arrowrock Dam outlet works; Tracy Fish Handling and Sorting Facilities model studies; stilling basin abrasion research; and fish passage methods for the endangered Silvery Minnow.

D-8561 LABORATORY SHOPS
– MIKE McDONALD

This group constructs and fabricates models and specialized testing equipment to support Reclamation's technology development program and project studies conducted in the Technical Service Center.

Laboratory shop products include:

- Custom-designed scale models
- Testing facilities
- Instruments
- Special items

D-8561 shops are equipped and staffed for carpentry, pattern making (plastics), machining, welding, instrumentation, electrical work, and other disciplines.

D-8570 LAND SUITABILITY AND WATER QUALITY GROUP
– STAN CONWAY

This group supports water and land resource suitability assessments, management, and development with technical assistance, investigations, and research.

The Land Suitability and Water Quality Group's services include:

- Developing technical standards, guidelines, and procedures for water quality and land resource investigations.
- Developing, and adapting various models including numeric, statistical, chemical process, and hydrodynamic models to evaluate water quality in rivers, reservoirs, and groundwater.
- Providing guidance and conducting investigations for contaminant substances in soil, sediment and water; wetland and riparian enhancement and creation; watershed TMDLs; salinity control; and providing water quality and land resources analysis for EISs and design/construction projects.

- Developing specifications for and conducting irrigation suitability land classification investigations for planning Reclamation irrigation projects and adding or withdrawing irrigated lands from projects.
- Conducting laboratory analyses on soil and sediment for land resources and watershed investigations including analyses for chemical and physical properties, analysis for trace elements, leachate tests, and particle sizing and counting.
- Conducting soil/water/plant compatibility investigations on lands experiencing crop production problems; where new water sources are to be used for irrigation; and for revegetation studies.

D-8570's professional staff includes soil scientists, hydrologists, physical scientists, engineers, and technicians.

D-8580 RESOURCE MANAGEMENT AND PLANNING GROUP

– DEL HOLZ

This group provides expertise in planning, recreation, cultural resources, multidisciplinary team management, public involvement, conflict resolution, social analysis, and facilitation. It also provides studies and other associated services necessary for compliance with the National Environmental Policy Act (NEPA).

The Resource Management and Planning Group consists of experts in several environmental planning areas, including:

- Resource managers who manage and facilitate multidisciplinary water resource planning and environmental compliance teams. They prepare environmental impact statements and environmental assessments including needs and key issue identification, alternative formulation, scoping, and scheduling.
- Cultural resources staff who provide expertise in historic, architectural, archeological, and ethnographic resources. Services include comprehensive field surveys; archival research; consultation with the Advisory Council on Historic Preservation and with Tribal and State Historic Preservation Offices; determinations of significance; repository evaluations; National Register listings; curation and compliance with the National Historic Preservation Act; historic context statements; and oral histories.
- Recreation specialists, who are experienced in the principles, concepts, and methodologies of outdoor recreation planning, management, and administration. This includes recreation master and conceptual planning, interpretive planning and design guidance, NEPA recreation impact analysis, recreation needs assessments, and recreation facility design guidance. Recreation specialists also provide expertise in resource management planning and team management.

- Public Involvement staff who provide expertise in soliciting public opinion, conflict resolution, consensus building, and issue identification. The group assists in scoping for environmental compliance, and developing and implementing public involvement programs.
- Social analysis staff who evaluate societal changes resulting from proposed or ongoing Reclamation activities. They provide consultation and analyses for NEPA compliance and planning studies, including environmental justice and Indian Trust Assets.

D-8580 projects include appraisal, feasibility and special studies; NEPA compliance; hazardous materials cleanup; and resource management plans.

D-2100 INTERNATIONAL AFFAIRS TEAM
– LEANNA PRINCIPE

This team is the Denver Office contact point for international activities.

The International Affairs Team's services include:

- Providing information on Reclamation expertise to foreign countries
- Responding to inquiries about visits or training opportunities at Reclamation facilities
- Developing, organizing, and coordinating Reclamation's international technical visitor and reimbursable training programs
- Providing all arrangements for visitor and training programs, including cost estimating, health insurance, travel and accommodations, enrollment for academic study, and visits to both Reclamation and non-Reclamation facilities
- Planning and coordinating international seminars and workshops
- Arranging translations of foreign-language materials into English and of English materials into a foreign language on a cost-reimbursable basis

TECHNICAL SERVICE CENTER

SUBJECT MATTER AREAS AND CONTACTS

	Code D-	Name	Number 303-
A			
Ability-to-pay	8270	Bob Hamilton	445-2724
Acid mine drainage	8311	Mike Gobla	445-3032
Activity managers (see resource management)	8580	Del Holz	445-2703
Advanced Water Treatment Research (AWTR) Program	8230	M. Kevin Price	445-2260
Aerial photography	8260	Mike Pucherelli	445-2267
Aggregate quality evaluation	8180	Bill Kepler	445-2386
Agrometeorology	8510	Dave Matthews	445-2470
Alignment, Hydroelectric units	8450	Bert Milano	445-2300
Ancillary service monitoring	8450	Bert Milano	445-2300
Aquatic systems research	8220	G. Chris Holdren	445-2178
Aquifer/stream interaction analysis	8550	Rod TeKrony	445-2505
Aquifer tests, characteristics	8550	Rod TeKrony	445-2505
Archeologic resources and analysis	8580	Jim Bailey	445-2704
Architectural, Structural and, Group	8120	Mike O'Shea	445-3272
As-built drawings	8012	Doug Smith	445-2614
AutoCAD (Committee, TSC drawings, records management)	8350	Don Serina	445-2974
Automated Data Acquisition Systems	8460	DeWayne Campbell	445-3052
Automation, powerplant and generation control	8450	Bert Milano	445-2300
B			
Bank and bed stabilization	8540	Ted Yang	445-2550
Battery testing	8450	Bert Milano	445-2300
Bioassessments	8220	G. Chris Holdren	445-2178
Bridges—Water Conveyance	8140	Jesus Romero	445-3124
Budget and schedule monitoring	8010	See specific client area for contact	
Budget and schedules developed for future work	8002	Tom Luebke	445-2600
C			
CAD, computer-aided design	8350	Don Serina	445-2974
CAD, drawings and standardization	8012	Doug Smith	445-2614
CAD three-dimensional modeling	8350	Don Serina	445-2974
CALSIM optimization system model	8520	Nancy Parker	445-2532
Calibration, instrument	8460	DeWayne Campbell	445-3052
Canal seepage testing analyses	8550	Rod TeKrony	445-2505
Canal system modeling	8510	Dave Matthews	445-2470
Canals—Water Conveyance	8140	Steve Robertson	445-3123
CD mastering and duplication	8012	Doug Smith	445-2614
Cement/pozzolan testing	8180	Kurt Mitchell	445-2387
Charge numbers established	8010	See specific client area for contact	
Chemical processes	8230	M. Kevin Price	445-2260
Chemistry for hazardous waste products	8160	Margaret Lake	445-2181
Chemistry laboratory	8220	Kevin Kelly	445-2017
Circuit breakers	8440	Boyd Leuenberger	445-2840

	Code D-	Name	Number 303-
Civil Engineering Services Division	8100	Lowell Pimley	445-3111
Claims, contract	8160	Richard Grotzke	445-3287
Class 3 cultural survey	8580	Jim Bailey	445-2704
Client Liaisons	8010	Al Bourland	445-2596
Climate analysis and simulation	8510	Dave Matthews	445-2470
Coatings technology	8180	Kurt von Fay	445-2399
Commissioner's Office client liaison	8010	Tom Mitchell	445-2603
Computer modeling, power system generation	8440	Boyd Leuenberger	445-2840
Computer modeling for water quality	8570	Stan Conway	445-2453
Computer models, develop, improve, implement	8510	Dave Matthews	445-2470
Computer-aided design (CAD)	8350	Don Serina	445-2974
Concession management	8580	Del Holz	445-2703
Concrete dams	8130	John LaBoon	445-3235
Concrete pipe—investigations	8140	Jim Keith	445-3121
Concrete pipe design	8140	Richard Fuerst	445-3118
Concrete repair	8180	Kurt von Fay	445-2399
Concrete technology	8180	Tim Dolen	445-2380
		Bill Kepler	445-2386
Conepenetrometer testing (CPT)	8340	Jeff Farrar	445-2333
Conjunctive relationships, surface and groundwater	8520	Craig Albertsen	445-2526
Conjunctive use opportunities evaluation	8550	Rod TeKrony	445-2505
Conservation—Water Supply, Use, and	8520	Craig Albertsen	445-2526
Construction control/materials testing - concrete	8180	Bill Kepler	445-2386
Construction control/materials testing - earthwork	8340	Jeff Farrar	445-2333
Construction Cost Index	8170	Dan Maag	445-3084
Construction Management Group	8160	Richard Grotzke	445-3287
Construction support, subsurface drains and wells	8550	Rod TeKrony	445-2505
Contract claims consultation services	8160	Richard Grotzke	445-3287
Contract schedules	8160	Richard Grotzke	445-3287
Control system analysis and testing	8450	Bert Milano	445-2300
Control system design	8440	Larry Rossi	445-2820
Conveyance systems automation	8140	Richard Fuerst	445-3118
Corrosion technology	8180	Tom Johnson	445-2383
Corrugated plastic drain pipe (approval)	8550	Rod TeKrony	445-2505
Corrugated plastic drain pipe (testing)	8140	Richard Fuerst	445-3118
Cost allocation	8270	Bob Hamilton	445-2724
Cost estimates	8170	Dan Maag	445-3084
Critical path method (CPM) schedules	8160	Richard Grotzke	445-3287
Cross-drainage studies	8530	Bob Swain	445-2547
Cultural resources	8580	Jim Bailey	445-2704
Cultural survey	8580	Jim Bailey	445-2704
Cutoff wall design	8311	John Cyganiewitz	445-3025
D			
Dam break inundation studies	8540	Wayne Graham	445-2553
Dam instrumentation database	8460	DeWayne Campbell	445-3052
Dam removal design (concrete dams)	8130	Tom Hepler	445-3281
Dam removal design (embankment dams)	8311	Steve Young	445-3043
Dam removal sediment dynamics	8540	Ted Yang	445-2550

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Dam safety - Inspections	8470	Chris Veesaert	445-2742
Dam safety analysis of instrumentation data	8460	DeWayne Campbell	445-3052
Dam safety client liaison	8010	Betty Dinneen	445-3029
Dam Safety Document Management System (DSDAMS)	8470	Rennie Seymour	445-2607
Dam Safety Information System (DSIS)	8470	Rennie Seymour	445-2607
Dam safety research, hydraulic models	8560	Nate Snortland	445-2395
Dam safety technical priority rating system	8470	Chris Danley	445-2755
Dam safety training	8470	Chris Veesaert	445-2742
Dam safety—Reclamation SEED and SOD client liaison	8010	Betty Dinneen	445-3029
Dam seepage geochemistry	8290	Doug Craft	445-2182
Dam tender training	8470	Bill Bouley	445-2754
Demonstration testing	8230	M. Kevin Price	445-2260
Desalination and Water Purification Research and Development (DWPR) Program	8230	M. Kevin Price	445-2260
Desalting pilot plants	8230	M. Kevin Price	445-2260
Desktop publishing and printing	8011	Joe Carriero	445-2572
Dewatering system study and design	8550	Rod TeKrony	445-2505
Director, Technical Service Center	8000	Michael Roluti	445-2720
Diversion structures	8140	Steve Robertson	445-3123
Diving Team	8470	Jerry Sharman	445-2749
Doble Program	8450	Bert Milano	445-2300
Document conversion	8012	Doug Smith	445-2614
Document preparation and publication	8011	Joe Carriero	445-2572
Document scanning, high resolution	8260	Mike Pucherelli	445-2267
Drainage, Ground Water and	8550	Rod TeKrony	445-2505
Drawing conversions	8012	Doug Smith	445-2614
Drawings, technical engineering, specifications, as-built	8012	Doug Smith	445-2614
Drought indices	8530	Bob Swain	445-2547
Dynamic analysis of embankment dams	8313	David Gillette	445-2986
E			
Early warning systems, (emergency management)	8470	Chris Veesaert	445-2742
Early warning systems, (hydrologic monitoring)	8530	Dave Fisher	445-2542
Earth Sciences and Research Laboratory Group	8340	Tom Lippert	445-2330
Earthquake loading	8330	Jon Ake	445-3169
Ecological Planning and Assessment Group	8210	Michael Armbruster	445-2232
Ecological Research and Investigations Group	8220	G. Chris Holdren	445-2178
Economics Group	8270	Bob Hamilton	445-2724
Editing	8011	Joe Carriero	445-2572
Electrical equipment component and design selection	8440	Boyd Leuenberger	445-2840
Electrical Design Group	8440	Vacant	445-2828
Electromagnetic fields measurement	8450	Bert Milano	445-2300
Electronics, design, diagnostics	8450	Bert Milano	445-2300
Embankment Dams	8313	Clarence Duster	445-2993
Emergency Action Plans	8470	Chris Veesaert	445-2742
Emergency management	8470	Chris Veesaert	445-2742
Endangered Species Act compliance	8210	Michael Armbruster	445-2232
Engineering Geology Group	8320	Jim Krulik	445-3192
Engineering, Geotechnical	8300	Rich Throner	445-2953
Estimating, Specifications, and Value Program	8170	Bob Baumgarten	445-3076
Engineers estimate	8170	Dan Maag	445-3084

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Environmental Chemistry, project work	8160	Margaret Lake	445-2181
Environmental Chemistry, research	8220	Kevin Kelly	445-2017
Environmental engineering	8230	M. Kevin Price	445-2260
Environmental impact assessment	8580	Del Holz	445-2703
Environmental hydraulics	8560	Brent Mefford	445-2149
Environmental justice	8580	Del Holz	445-2703
Environmental Research	8220	G. Chris Holdren	445-2178
Environmental Services Division	8200	Bill Karsell	445-2698
Environmental restoration	8160	Richard Grotzke	445-3287
Environmental studies	8210	Michael Armbruster	445-2232
Equipment, Hydraulic	8420	Dan Drake	445-2874
Equipment, special for field studies	8340	Jeff Farrar	445-2333
EWS, early warning systems	8530	Dave Fisher	445-2542
Excavation stability	8320	Charles Redlinger Pete Shaffner	445-2768 445-3152
Excavations, underground	8312	Gregg Scott	445-3233
Excitation systems alignment	8450	Bert Milano	445-2300
F			
Facilitation	8580	Del Holz	445-2703
Factory inspection	8160	Richard Grotzke	445-3287
Fault activity assessments	8330	Larry Anderson	445-3170
Feasibility studies	8580	Del Holz	445-2703
Field exploration (geologic)	8320	Peter Shaffner	445-3152
Field testing, electric power	8450	Bert Milano	445-2300
Financial analyses of projects	8270	Bob Hamilton	445-2724
Fire detection and alarm systems	8440	Larry Rossi	445-2820
Fish and moss screens	8410	Bob Todd	445-2855
Fish evaluations and impacts on operations, research	8290	Diana Weigmann	445-2112
Fish evaluations and impacts on operations, compliance	8210	Michael Armbruster	445-2232
Fish facilities	8140	Arthur Glickman	445-3120
Fisheries Applications Research Group	8290	Diana Weigmann	445-2112
FIST (Facilities, Instructions, Standards, and Techniques) Manual Program	8450	Bert Milano	445-2300
Flash boundary calculations	8450	Bert Milano	445-2300
Flood frequency analyses	8530	Lou Schreiner	445-2546
Flood Hydrology Group	8530	Lou Schreiner	445-2546
Forecast precipitation and runoff	8510	Dave Matthews	445-2470
Foreign participants	2100	Leanna Principe	445-2127
Foundation design	8312	Bill Engemoen	445-2960
Foundation improvement methods	8313	Perry Hensley	445-2986
Foundation material research	8340	Tom Lippert	445-2330
G			
Gate and valve design	8420	Dan Drake	445-2874
Gate and valve testing program	8450	Bert Milano	445-2300
Generator analysis	8440	Larry Rossi	445-2820
Generator testing and troubleshooting	8450	Bert Milano	445-2300
Geochemistry of dam seepage	8290	Doug Craft	445-2182

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Geographic Information Systems (GIS)	8260	Mike Pucherelli	445-2267
Geographic Information, Remote Sensing and	8260	Mike Pucherelli	445-2267
Geological expertise for earthquake hazards	8330	Larry Anderson	445-3170
Geology, Engineering	8320	Jim Krulik	445-3192
Geomorphology	8530	Dan Levish	445-3175
Geophysical exploration	8330	Rich Markiewicz	445-3167
Geophysics, Seismotectonics and	8330	Jerry Wright	445-3161
Geosynthetic design	8311	Bob Dewey	445-2976
Geosynthetics materials	8180	Jay Swihart	445-2397
Geotechnical Engineering Group 1	8311	Bob Dewey	445-2976
Geotechnical Engineering Group 2	8312	Chuck Redlinger	445-2768
Geotechnical Engineering Group 3	8313	Perry Hensley	445-2986
Geotechnical Services Division	8300	Rich Throner	445-2953
GIS based wildlife management models	8210	Michael Armbruster	445-2232
GIS, geographic information systems	8260	Mike Pucherelli	445-2267
Global positioning systems (GPS)	8260	Mike Pucherelli	445-2267
Governor alignment program	8450	Bert Milano	445-2300
GP Region client liaison	8010	Barb Schuelke	445-3607
Graphic spatial database	8260	Mike Pucherelli	445-2267
Ground motions	8330	Jon Ake	445-3169
Grounding, plant and personal protective	8450	Bert Milano	445-2300
Groundwater recharge	8550	Rod TeKrony	445-2505
Ground Water and Drainage Group	8550	Rod TeKrony	445-2505
Grouting	8180	Kurt von Fay	445-2399
H			
Harmonics, power system	8450	Bert Milano	445-2300
Hazardous and toxic substances in soil and water	8570	Stan Conway	445-2453
Hazardous waste collection and disposal	8005	George Taylor	445-2214
Hazardous waste remediation techniques	8340	Tom Lippert	445-2330
Hazardous waste site characterization	8320	Mark Vandeberg	445-3306
Hazardous waste site field investigations	8340	Mark Gemperline	445-2334
Heating, ventilating, and air conditioning equipment	8410	Bob Todd	445-2855
HEC model applications	8510	Dave Matthews	445-2470
Herbicide application techniques	8220	Fred Nibling	445-2202
High-voltage facilities	8440	Boyd Leuenberger	445-2840
High-voltage generator diagnostics	8450	Bert Milano	445-2300
Historic resources	8580	Jim Bailey	445-2704
Historical site preservation - structures	8180	Kurt von Fay	445-2399
Hydraulic analyses for dams	8130	John LaBoon	445-3235
Hydraulic design/analysis for high-velocity, high-pressure flow	8130	John LaBoon	445-3235
Hydraulic Equipment Group	8420	Dan Drake	445-2874
Hydraulic laboratory	8560	Cliff Pugh	445-2151
Hydraulic structure designs/modifications—dams	8130	John LaBoon	445-3235
Hydraulic structure designs/modifications— water conveyance	8140	Richard Fuerst	445-3118
Hydraulic system evaluation	8560	Cliff Pugh	445-2151
Hydraulic transient analysis	8140	Jim Keith	445-3121
Hydraulics, River—Sedimentation and	8540	Ted Yang	445-2550
Hydroacoustic fishery studies	8290	Diana Weigmann	445-2212
Hydroelectric Research and Technical Services Group	8450	Bert Milano	445-2300

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Hydrologic studies	8520	Craig Albertsen	445-2526
Hydrological aspects of dam safety	8530	Lou Schreiner	445-2546
Hydrology, flood	8530	Lou Schreiner	445-2546
Hydrometeorological database design	8510	Dave Matthews	445-2470
Hydrometeorology studies	8530	Lou Schreiner	445-2546
HYDROSS-HSS modeling system	8520	Nancy Parker	445-2532
I			
IDIQ (Indefinite Delivery Indefinite Quantity)	8010	Al Bourland	445-2596
Illustrations, presentations	8012	Doug Smith	445-2614
Independent system operators	8450	Bert Milano	445-2300
Indian Trust Assets evaluation	8580	Del Holz	445-2703
Inflow design hydrographs	8530	Lou Schreiner	445-2546
Information, systems support	8010	Betty Dinneen	445-3029
Infrared Inspection Program	8450	Bert Milano	445-2300
Infrastructure Services Division	8400	Mark Boyle	445-2828
Innovative technologies	8230	M. Kevin Price	445-2260
Inspection of electrical equipment	8440	Boyd Leuenberger	445-2840
Instream flow studies	8210	Michael Armbruster	445-2232
Instrumentation, electronic and electric power	8450	Bert Milano	445-2300
Instrumentation, Structural Behavior and	8460	DeWayne Campbell	445-3052
Insulation, high-voltage testing and diagnostics	8450	Bert Milano	445-2300
Integrated atmosphere-watershed ecosystem models	8510	Dave Matthews	445-2470
Integrated database systems	8520	Craig Albertsen	445-2526
Intergraph CADD	8350	Don Serina	445-2974
International Affairs client liaison	8010	Tom Mitchell	445-2603
International inquiries, training, and visitor's program	2100	Leanna Principe	445-2127
Interrelationships between environment and aquatic systems	8220	G. Chris Holdren	445-2178
Irrigation modeling	8510	Dave Matthews	445-2470
Irrigation structures	8140	Richard Fuerst	445-3118
K			
K88 Working Capital Fund, P&A	8002	Tom Luebke	445-2600
L			
Laboratory and bench-scale testing	8230	M. Kevin Price	445-2260
Laboratory models	8560	Cliff Pugh	445-2151
Laboratory Shops	8561	Mike McDonald	445-2167
Laboratory Tours	8560	Angela Medina	445-2139
Land classification for irrigation	8570	Stan Conway	445-2453
Land Suitability and Water Quality Group	8570	Stan Conway	445-2453
Landscape design	8120	Mike O'Shea	445-3272
Landslides (geology) Landslide Register	8320	Ken Skipper	445-3196
Landslides(geotechnical)	8311	Karl Dise	445-3030
Layout and design of publications, reports	8011	Joe Carriero	445-2572
LC Region client liaison	8010	Tom Mitchell	445-2603
Life analysis of existing and new equipment	8420	Dan Drake	445-2874
Life extension	8450	Bert Milano	445-2300
Lighting systems	8440	Larry Rossi	445-2820
Limnological studies	8220	G. Chris Holdren	445-2178

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M			
Machine condition monitoring	8450	Bert Milano	445-2300
Magnetic fields exposure	8450	Bert Milano	445-2300
Manual writing, editing, publication	8011	Joe Carriero	445-2572
Maps/drawings, plotting	8260	Mike Pucherelli	445-2267
Material quantity estimates	8410	Bob Todd	445-2855
Materials Engineering and Research Laboratory Group	8180	Dave Harris	445-2375
Materials property databases	8180	Kurt von Fay	445-2399
Matrix team management	8580	Del Holz	445-2703
Mechanical Equipment Group	8410	Bob Todd	445-2855
Mediation conflict resolution	8580	Del Hotz	445-2703
Membrane storage and cleaning	8230	M. Kevin Price	445-2260
Meteorology, River Systems and	8510	Dave Matthews	445-2470
Mine reclamation	8311	Mike Gobla	445-3032
Mobile water treatment pilot plant	8230	M. Kevin Price	445-2260
Models, economic	8270	Bob Hamilton	445-2724
Models, groundwater flow	8550	Rod TeKrony	445-2505
Models, power system	8440	Boyd Leuenberger	445-2840
MODSIM river simulation model	8520	Nancy Parker	445-2532
Modular Modeling System collaboration	8510	Dave Matthews	445-2470
Monetary benefits of actions	8270	Bob Hamilton	445-2724
Motors, electric	8440	Larry Rossi	445-2820
MP Region client liaison	8010	Al Bourland	445-2596
Multidisciplinary team management	8580	Del Holz	445-2703
N			
National Inventory of Dams	8470	Wade Feltman	445-2799
Native American Affairs Office	8010	Tom Mitchell	445-2603
Natural soil and rock slopes, and landslides	8311	Karl Dise	445-3030
Natural channel processes	8540	Ted Yang	445-2550
NEPA Compliance	8580	Del Holz	445-2703
New work, scope of	8010	See specific client area for contact	
Newsletter production and publication	8011	Joe Carriero	445-2572
NEXRAD precipitation analysis	8510	Dave Matthews	445-2470
NOAA River Forecast Center interface	8510	Dave Matthews	445-2470
Nonparametric statistical analysis	8510	Dave Matthews	445-2470
Numerical analysis	8311	Ashok Chugh	445-3026
O			
Office of Program and Policy Services client liaison	8010	Al Bourland	445-2596
Operation and maintenance program, power	8450	Bert Milano	445-2300
Operation and maintenance program, water	8470	Bill Bouley	445-2754
Operations support functions	8010	Al Bourland	445-2596
Other Government agencies client liaison	8010	Betty Dinneen	445-3029
Outlet works	8130	John LaBoon	445-3235

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P			
P&A client liaison	8002	Tom Luebke	445-2600
PDF products	8012	Doug Smith	445-2614
Paleohydrology	8530	Dan Levish	445-3175
Penstock Inspection Program	8450	Bert Milano	445-2300
Petrographic analysis	8340	Doug Hurcomb	445-2336
Phreatophyte control	8220	Fred Nibling	445-2202
Pilot-scale testing	8230	M. Kevin Price	445-2260
Pipelines	8140	Linda Bowles	445-3114
Piping and Seepage	8311	John Cyganiewicz	445-3025
Planning—plan formulation	8580	Del Holz	445-2703
Planning engineering	8140	Richard Fuerst	445-3118
Planning studies	8580	Del Holz	445-2703
Plant control and automation	8440	Larry Rossi	445-2820
Plants, Electrical	8440	Larry Rossi	445-2820
Plastics technology	8180	Jay Swihart	445-2397
PN Region client liaison	8010	Barb Schuelke	445-3607
Power and transmission systems	8440	Boyd Leuenberger	445-2840
Power Equipment Bulletins	8450	Bert Milano	445-2300
Power system waterways—design	8140	Richard Fuerst	445-3118
Power system stability and stabilizers	8450	Bert Milano	445-2300
Power system waterways hydraulic transients	8420	Dan Drake	445-2874
Powerplant and pumping plant layout	8120	Mike O'Shea	445-3272
Powerplant automation	8450	Bert Milano	445-2300
Powerplant equipment	8410	Bob Todd	445-2855
Precipitation analysis and prediction	8510	Dave Matthews	445-2470
Presentation graphics	8012	Doug Smith	445-2614
Preservation of historic structures	8580	Jim Bailey	445-2704
Pressure vessel, inspections	8450	Bert Milano	445-2300
Probable maximum flood	8530	Lou Schreiner	445-2546
Probable maximum precipitation	8530	Lou Schreiner	445-2546
Project management	8580	Del Holz	445-2703
Program analysts and assistants	8010	Al Bourland	445-2596
Protective coatings technology (paint)	8180	Tom Bortak	445-2376
Protective relaying	8440	Boyd Leuenberger	445-2840
PRSYM Power and Reservoir Modeling System	8510	Dave Matthews	445-2470
Public involvement	8580	Del Holz	445-2703
Public meeting facilitation	8580	Del Holz	445-2703
Public safety assessments	8470	Chris Veesaert	445-2742
Publication graphics	8012	Doug Smith	445-2614
Pumps, hydraulic equipment	8420	Dan Drake	445-2874
Q			
Quality assurance (Hazardous waste)	8140	Jeff Baysinger	445-3194
R			
Recreation	8580	Del Holz	445-2703
Recreation-use benefits	8270	Bob Hamilton	445-2724
Recreation analysis	8580	Del Holz	445-2703
Regional Atmospheric Modeling System (RAMS)	8510	Dave Matthews	445-2470
Regional transmission organizations	8450	Bert Milano	445-2300

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Remote Sensing and Geographic Information Group	8260	Mike Pucherelli	445-2267
Replacement, rapid, of malfunctioning components	8460	DeWayne Campbell	445-3052
Report writing, editing, publishing	8011	Joe Carriero	445-2572
Research, ecological	8220	G. Chris Holdren	445-2178
Research, electric power	8450	Bert Milano	445-2300
Research, environmental chemistry	8220	Kevin Kelly	445-2017
Research, Hydroelectric	8450	Bert Milano	445-2300
Research Laboratory, Earth Sciences and	8340	Tom Lippert	445-2330
Research Laboratory, Materials Engineering and	8180	Dave Harris	445-2375
Research Laboratory, Water Resources	8560	Cliff Pugh	445-2151
Research, water treatment engineering	8230	M. Kevin Price	445-2260
Reservoir surveys	8540	Ron Ferrari	445-2551
Resource Management and Planning	8580	Del Holz	445-2703
Resource study initiation	8580	Del Holz	445-2703
Riparian habitat enhancement	8570	Stan Conway	445-2453
Riprap and slope protection	8311	Bob Dewey	445-2976
Risk analyses	8311	Karl Dise	445-3030
Risk assessment (dams)	8311	Karl Dise	445-3030
Risk-based profiling	8311	Karl Dise	445-3030
Risk reduction alternatives at unsafe dams	8311	John Cyganiewicz	445-3025
River improvements	8140	Richard Fuerst	445-3118
River Hydraulics and River Mechanics	8540	Ted Yang	445-2550
River/reservoir responses to change	8540	Ted Yang	445-2550
River restoration	8540	Ted Yang	445-2550
River system optimization simulations	8510	Dave Matthews	445-2470
River Systems and Meteorology Group	8510	Dave Matthews	445-2470
RO&M examination of major structures	8470	Chris Veesaert	445-2742
Roads	8140	Mark Leavitt	445-3227
Rock material testing (geotechnical)	8340	Jack Touseull	445-2346
Rock mechanics	8312	Gregg Scott	445-3233
Roller-compacted concrete	8180	Tim Dolen	445-2380
S			
Safety of dams - Inspections	8470	Chris Veesaert	445-2742
Safety Officer, TSC	8005	George Taylor	445-2214
Salinity control studies	8570	Stan Conway	445-2453
Sampling hazardous waste site investigations	8340	Mark Gemperline	445-2334
SAMS program	8510	Don Frevert	445-2473
Satellite imagery	8260	Mike Pucherelli	445-2267
SCADA, support	8440	Boyd Leuenberger	445-2840
SCADA software evaluation and development	8450	Bert Milano	445-2300
SCADA system security	8450	Bert Milano	445-2300
Scale models	8561	Mike McDonald	445-2167
Scanning documents, high resolution	8260	Mike Pucherelli	445-2267
Science and technology client liaison	8010	Al Bourland	445-2596
Scoping new study objectives, technical tasks, costs	8580	Del Holz	445-2703
Scour studies	8540	Ted Yang	445-2550
Sealants/sealers	8180	Jay Swihart	445-2397
Security of embankments	8313	Perry Hensley	445-2986
Security, Facility assessments	8130	Dave Hinchliff	445-3256
Sediment physical and chemical testing	8570	Juli Fahy	445-2187
Sedimentation and River Hydraulics Group	8540	Ted Yang	445-2550
SEED and SOD client liaison	8010	Betty Dinneen	445-3029

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SEED examinations	8470	Chris Veesaert	445-2742
Seepage analyses, structures	8311	Mark Pabst	445-2998
Seismic networks	8330	Chris Wood	445-3187
Seismological studies	8330	Jon Ake	445-3169
Seismotectonic field mapping	8330	Larry Anderson	445-3170
Seismotectonics and Geophysics Group	8330	Jerry Wright	445-3161
Selenium removal research	8230	Andy Murphy	445-2259
Service agreements developed	8010	See specific client area for contact	
Shops, Laboratory	8561	Mike McDonald	445-2167
Shotcrete	8180	Kurt von Fay	445-2399
Site characterization for hazardous wastes	8320	Mark Vandeberg	445-3306
Site selection for hydraulic structures, etc.	8140	Richard Fuerst	445-3118
Slides for presentations	8012	Doug Smith	445-2614
Slope stability	8313	Dave Gillette	445-2994
Snow Estimation and Updating System (SEUS)	8510	Dave Matthews	445-2470
Social analysis, impacts of Government actions	8580	Del Holz	445-2703
Soil and rock sampling/insitu testing	8340	Jeff Farrar	445-2333
Soil and rock slope landslides	8311	Karl Dise	445-3030
	8320	Ken Skipper	445-3196
Soil, physical and chemical testing	8570	Juli Fahy	445-2187
Soil, rock, and foundation material research	8340	Tom Lippert	445-2330
Soil, rock, and foundation testing	8340	Tom Lippert	445-2330
Solar ponds, solar powered pumping	8230	M. Kevin Price	445-2260
SOP's, Standing Operating Procedures	8470	Bill Bouley	445-2754
Specifications drawings	8012	Doug Smith	445-2614
Specifications preparation	8170	Greg Gulsvig	445-3081
Specifications preparation reviews	8170	Greg Gulsvig	445-3081
Specifications constructability reviews	8160	Richard Grotzke	445-3287
Spillways	8130	John LaBoon	445-3235
Stability analyses of embankments	8313	Dave Gillette	445-2994
Statistical analysis	8510	Dave Matthews	445-2470
Statistical analyses-hydrology	8530	Lou Schreiner	445-2546
Stochastic hydrology applications	8510	Dave Matthews	445-2470
Stream restoration	8540	Tim Randle	445-2557
	8560	Rod Wittler	445-2156
Streamflow forecasting	8510	Dave Matthews	445-2470
Strong motion instrumentation	8330	Chris Wood	445-3187
Structural Analysis Group	8110	Thom Fisher	445-3267
Structural and Architectural Group	8120	Thom Fisher	445-3267
Structural Behavior and Instrumentation Group	8460	DeWayne Campbell	445-3052
Structural design—hydraulic structures	8140	Richard Fuerst	445-3118
Subsurface exploring and sampling	8320	Jim Krulik	445-3192
T			
Tailings dams	8311	Mike Goble	445-3032
Technical Communications Group	8011	Joe Carriero	445-2572
Technical engineering drawings	8012	Doug Smith	445-2614
Technical Service Center	8000	Michael Roluti	445-2720
Technical team management	8580	Del Holz	445-2703

	Code D-	Name	Number 303-
Technical update lectures	8300	Karen Johnson	445-2953
Tectonic settings of features	8330	Larry Anderson	445-3170
Terrestrial photogrammetry	8320	Pete Shaffner	445-3152
Testing geotechnical	8340	Jeff Farrar	445-2333
Testing, power system and apparatus	8450	Bert Milano	445-2300
Toxicity evaluation of aquatic systems	8220	G. Chris Holdren	445-2178
Track existing work for accomplishment	8010	Al Bourland	445-2596
Transformer diagnostics	8450	Bert Milano	445-2300
Translations	2100	Leanna Principe	445-2127
TSC Environmental, Health and Safety Officer	8005	George Taylor	445-2214
Tunnel Communications	8450	Bert Milano	445-2300
Tunnel mapping	8320	Steve Beason	702-295-4088
Tunnels	8140	William Thompson	445-3128
Turbine design	8420	Dan Drake	445-2874
U			
UC Region client liaison	8010	Tom Mitchell	445-2603
Underground excavations	8312	Gregg Scott	445-3233
Unit commitment (generation)	8450	Bert Milano	445-2300
Uprate studies	8440	Larry Rossi	445-2820
Underwater inspection services	8450	Bert Milano	445-2300
V			
Value engineering/analysis studies	8170	Frank McLean	445-3091
Value engineering/analysis training	8170	Norm Hyndman	445-3251
Value engineering program administration	8170	Frank McLean	445-3091
Vibration, testing, and analysis	8450	Bert Milano	445-2300
Vibration, testing, and fatigue analysis	8410	Bob Todd	445-2855
	8560	Warren Frizell	445-2145
Video editing	8012	Doug Smith	445-2614
Voltage regulator alignment and troubleshooting	8450	Bert Milano	445-2300
Visitor and employee facilities	8410	Bob Todd	445-2855
Visual Presentations Group	8012	Doug Smith	445-2614
W			
Wastewater treatment systems	8230	M. Kevin Price	445-2260
Water conservation analysis	8520	Craig Albertsen	445-2526
Water conservation research	8560	Cliff Pugh	445-2151
Water Conveyance Group	8140	Richard Fuerst	445-3118
Water delivery equipment	8420	Dan Drake	445-2874
Water hammer analysis	8140	Jim Keith	445-3121
Water quality chemical analyses	8220	Kevin Kelly	445-2017
Water quality models for rivers, etc.	8570	Stan Conway	445-2453
Water Quality, Land Suitability and	8570	Stan Conway	445-2453
Water remediation of hazardous chemicals	8230	M. Kevin Price	445-2260
Water requirements	8520	Craig Albertsen	445-2526
Water resource suitability	8570	Stan Conway	445-2453
Water Resources Research Laboratory	8560	Cliff Pugh	445-2151
Water Resources Services Division	8500	Jim Pierce	445-2120
Water Reuse and Recycling, Title XVI	8230	M. Kevin Price	445-2260

	Code D-	Name	Number 303-
Water rights	8520	Craig Albertsen	445-2526
Watershed analysis	8520	Craig Albertsen	445-2526
Watershed and River Systems Management Program	8510	Dave Matthews	445-2470
Water stops	8180	Jay Swihart	445-2397
Water Supply, Use, and Conservation Group	8520	Craig Albertsen	445-2526
Water Treatment Engineering and Research Group	8230	M. Kevin Price	445-2260
Water use efficiency	8520	Craig Albertsen	445-2526
Waterways and Concrete Dams Group	8130	John LaBoon	445-3235
Weather forecasts	8510	Dave Matthews	445-2470
Web based graphics and page design	8012	Doug Smith	445-2614
Web page design and development	8011	Joe Carriero	445-2572
Weed control research	8220	Fred Nibling	445-2202
Welding Procedures	8450	Bert Milano	445-2300
Well and well field design	8550	Rod TeKrony	445-2505
Well-head protection studies	8550	Rod TeKrony	445-2505
Wetlands enhancement and creation	8570	Stan Conway	445-2453
Wetlands, groundwater hydrology/hydraulics	8550	Rod TeKrony	445-2505
Wetlands research	8220	G. Chris Holdren	445-2178
Wetlands site landscape design	8120	Mike O'Shea	445-3272
Wetlands—water conveyance features	8140	Richard Fuerst	445-3118
Wildlife studies	8210	Michael Armbruster	445-2232
Workflow coordination in TSC	8010	See specific client area for contact	
Writing and editing assistance	8011	Joe Carriero	445-2572
Y			
Yucca Mountain Project	8320	Ken Skipper	445-3196
Z			
Zebra mussel and corbicula control	8220	Fred Nibling	445-2202

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 Leffel, Sharon 2585
 Lewis, Lonnie 2586
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 Rozales, Tony 2624
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Structural Analysis D-8110

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Mills-Bria, Barbara 3229
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Munoz, Rich 3230
Nuss, Larry 3231
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Payne, Terry 3232
Reynolds, Rose 3239
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Structural and Architectural D-8120

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Kumar, Kuldeep 3279
LaFond, Dick 3226
Lajimodiere, Bernard 2996
Neumaier, James 3280
O'Shea, Mike 3272
Pattie, John 3273
Pierce, Mary Lou 3274
Ruchti, Paul 3290
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Waterways and Concrete Dams D-8130

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Godaire, David 3249
Hall, Ernest 3244
Hepler, Tom 3261
Heyder, Walt 3246
Higinbotham, Steve (contract employee) 2627
Hinchliff, Dave 3256
Hovenden, Carol 2601
Mares, Dan 3252
Markley, John 3254
Maxwell, Lorraine (timekeeper) 3137
McGovern, Bob 3243
Mitchell, Phoebe 3033
Rupp, Jennifer 2491
Scobell, Tom 3706
Stanton, Doug 3265
Steers, Mark 3259
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Water Conveyance D-8140

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Edwards, Dave 2750
Gesundheit, Dave 3119
Glickman, Art 3120
Keith, James 3121

CIVIL ENGINEERING SERVICES DIVISION - D-8100 – continued

Water Conveyance D-8140 – continued

Leavitt, Mark	3227
McDaniel, Anne C.	3116
Robertson, Steve	3123
Romero, Jesus	3124
Sayer, Ken	3125
Streifel, Art	3126
Tan, Frederick	3127
Thompson, Bill	3128
Wagner, Jason	3136

Construction Management D-8160

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Madrid, Bob	3291
Paul, Dave	3296
Smith, Carlton	3303

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Estimating, Specifications, and Value Program D-8170

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Cook, Tom	3292
Copeland, Keith	3079
Donaldson, Dan	3080
Grush, Craig	3081
Gulsvig, Greg	3082
Higgins, Mike	3083
Hyndman, Norman	3251
Maag, Dan	3084
Magalong, Connie	3085
McLean, Frank	3091
Siebert, Gary	3089
Tran, Elizabeth	3087
VanOtterloo, Brad	3538
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Materials Engineering and Research Laboratory D-8180

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Hart, Jeffery L.	2381
Johnson, D. Thomas	2383
Jones, Eric R.	2384
Kellstadt, David W.	2385
Kepler, William F.	2386
Mitchell, Kurt D.	2387
Myers, Gregory J.	2389
Pepin, Richard A.	2391
Reo, Steven C.	2392
Schaffer, John J.	2394
Swihart, John J. (Jay)	2397
Travers, Fred A.	2398
von Fay, Kurt F.	2399

ENVIRONMENTAL SERVICES DIVISION - D-8200

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Ecological Research and Investigations D-8220

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U.S. Geological Survey Biological Resources Division D-8220

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Chem Lab D-8221

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Water Treatment Engineering and Research D-8230

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Delagah, Saied 2248
Gonzales, Daniel 2250
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ENVIRONMENTAL SERVICES DIVISION - D-8200 – continued

Water Treatment Engineering and Research D-8230 – continued

Irvine, Scott	2253
Jurenka, Robert	2254
Leitz, Frank	2255
Martella, Susan	2257
Moody, Charles	2258
Murphy, Andrew	2259
Porras, Yuliana	2265
Remmers, Harry	2261
Rodriguez, Robert	2262
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Remote Sensing and Geographic Information D-8260

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Clark, Douglas	2271
Cogan, Daniel	2291
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Fenton, Kathleen	2274
Goettlicher, Bill (contract employee)	2275
Holroyd, Edmond	2276
Lewallen, Joyce (contract employee)	2018
Meyer, Trudy	2278
Miller, Ronald	2279
Oliver, Karri	2281
Pennell, Jean	2282
Salas, David (contract employee)	3619
Whitesell, Bruce	2287
Wille, Kurt (contract employee)	2285
Wright, Patrick (contract employee)	2288

Economics D-8270

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Ekstrand, Earl	2731
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Harpman, David	2733
Lichtkoppler, Richard	2792
Munger, Dawn	2734
Nelson, Dennis	2735
Piper, Steve	2736
Platt, Jonathan	2737
Vinton, Richard	2738

Fisheries Applications Research D-8290

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GEOTECHNICAL SERVICES DIVISION - D-8300

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Miedema, Dave 3034
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Geotechnical Engineering Group 2 D-8312

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Lowther, Lynne 3151
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Meyer, Richard 3154
Orlandini, Phil (contract employee) 3183
Pearson, Ronald 3147
Rohrer, Peter 3150
Rood, Laurel 3201
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Turlington, Gary 3203
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GEOTECHNICAL SERVICES DIVISION - D-8300 – continued

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 Krill, Karl 2338
 Shanahan, Tony 2340
 Shehorn, Les 2341
 Stansbury, Roger 2342
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Joyce, Charles	2863
Lee, Christopher	3617
Mazza, Pete	2865
Ritt, Alex	2866
Rodriguez, Jose' (Rod)	2867
Schlein, Paul	2868
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Hordinski, Steve	2882
Hulse, Dave	2881
Hummel, Terry	3103
Jackson, Steve	2883
Read, Don	2884
Rood, Gary	3102
Smith, Ken	2885
Turnage, Toby	2864
Zelenka, Bob	2886

Electrical Design D-8440

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Galiunas, Elizabeth	2834
Gamuciello, Lisa	2835
Gillette, Butch	2815
Hoang, Vince	2836
Johansen, Rod	2837
Keller, James	2838
Leuenberger, Boyd	2840
Maxey, Douglas	2833
Nelson, Mark	2280
Nguyen, Kimmi	2851
Noi, Richard	2819
Patterson, Jay	2753
Ronda, Joe	2843
Rossi, Larry	2820
Schuette, Gunter	2822
Schuh, Mike	2821
Seitz, Jay	2844
Toland, Dan	2823
Uchiyama, Joe	2845
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INFRASTRUCTURE SERVICES DIVISION - D-8400 – continued

Hydroelectric Research and Technical Services D-8450 – continued

Brown, Gilbert	2317
Cawthorne, Gary	2817
Cline, Roger	2293
DeHaan, Jim	2305
Eastment, Eric	2324
Germann, John	2295
Girgis, George	2310
Jacobs, Malin	2306
King, Buford	2318
Lantz, Allison	2326
McStraw, Bill	2294
Myers, Nathan	2643
Nakamoto, Nathan	2524
Osburn, Gary	2297
Parson, Dianne	2302
Patterson, Shawn	2311
Price, Paul	2299
Salas, Carmela	2648
Shusterman, Dmitry	2323
Skufca, Frank	2320
Stitt, Steve	2316
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Inspections and Emergency Management D-8470

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Daniels, Jeffrey		2848
Danley, Chris		2755
Faris, Leon		2747
Feltman, Wade		2599
Fischer, Jerry		2748
Gagner, Kevin		2746
Meyer, Susan		2486
Seymour, Rennie		2607
Sharman, Jerry		2749
Sorensen, Grant		2744
Swanson, Charlie		2757
Sweeney, Lisa		3260
Wanker, Patrick		2594
Woodby, Bob		2758
Young, Wayne		2743

Structural Behavior and Instrumentation D-8460

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Davis, Roy	3055
Goins, Danny	3057
Jong, Martha	3058
Kelsic, Rick	3059
Klish, Dave	3060
Martin, Gary	3707
Poland, Allan	3056
Purto, Gerri	3051
Rosenfield, Jack	3061
Ross, Karen	3062
Sewell, Jim	3063
Stateler, Jay	3064
Suggs, John	3065
Welch, Randy	3066

WATER RESOURCES SERVICES DIVISION - D-8500

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River Systems and Meteorology D-8510

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King, Dave 2471
Leverson, Verne 2487
Medina, Jon 2488
Meyer, Steffen P. 2475
O'Connor, Dennis 2480
Rieker, Jeff 2484
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Flood Hydrology D-8530

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Kamstra, Lex 2544
Klawon, Jeanne 3264
Klinger, Ralph 3173
Levish, Dan 3174
Norval, Monica 2545
Swain, Bob 2547

Water Supply, Use, and Conservation D-8520

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Fax 445-6351 Room 506

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Lyons, Joe 2531
Mull, Ty 2494
Nuanes, Sharon 2533
Parker, Nancy 2532
Perry, Thomas 2567
Stroup, Duane 2527
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Sedimentation and River Hydraulics D-8540

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Delcau, Mitchell 2552
Feinberg, Bruce 3241
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Fotherby, Lisa 2476
Graham, Wayne 2553
Greimann, Blair 2563
Hilldale, Robert 3135
Holmquist-Johnson, Chris (contract employee) 2565
Huang, Victor (IPA) 2158
Klumpp, Cassie 2554
Lai, Yong 2560
Makar, Paula 2555
Melena, Jim 2556
Randle, Tim 2557
Samad, Mohammed 2559
Young, Christi 2561

WATER RESOURCES SERVICES DIVISION - D-8500 – continued

Ground Water and Drainage D-8550

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Cunningham, Jack	2510
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Pruitt, Tom	2512
Rappmund, Ronnie	2513
Smith, Delbert M.	2516
Starr, Mickey	2517
Talbot, Bob	2518

Cody, Mark 2511
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Water Resources Research Laboratory D-8560

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Demoyer, Connie	2152
Einhellig, Robert F.	2142
Fitzwater, Jerry R.	2143
Frizell, K. Warren	2145
Frizell, Kathleen	2144
Gill, Tom	2201
Hanna, Leslie	2146
Higgs, James	2147
Kubitschek, Joseph	2148
Mefford, Brent	2149
Rieniets, Cheryl	2150
Vermeyen, Tracy	2154
Wahl, Tony	2155
Wittler, Rodney	2156

Laboratory Shops D-8561

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Armstrong, Neal			2160
Black, Jason			2166
Bradley, Dennis			2161
Cheek, Dane			2162
Cuny, Richard			2163
Flores, Manuel			2164

Land Suitability and Water Quality D-8570

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Fahy, Juli	2188
Hoffman, Steven	2454
Jibson, Jack	2466
Mangelson, Ken	2456
Osterberg, John	2462
Stiles, Eric	2458
Turney, Annette	2465
Yahnke, James W.	2015

Resource Management and Planning D-8580

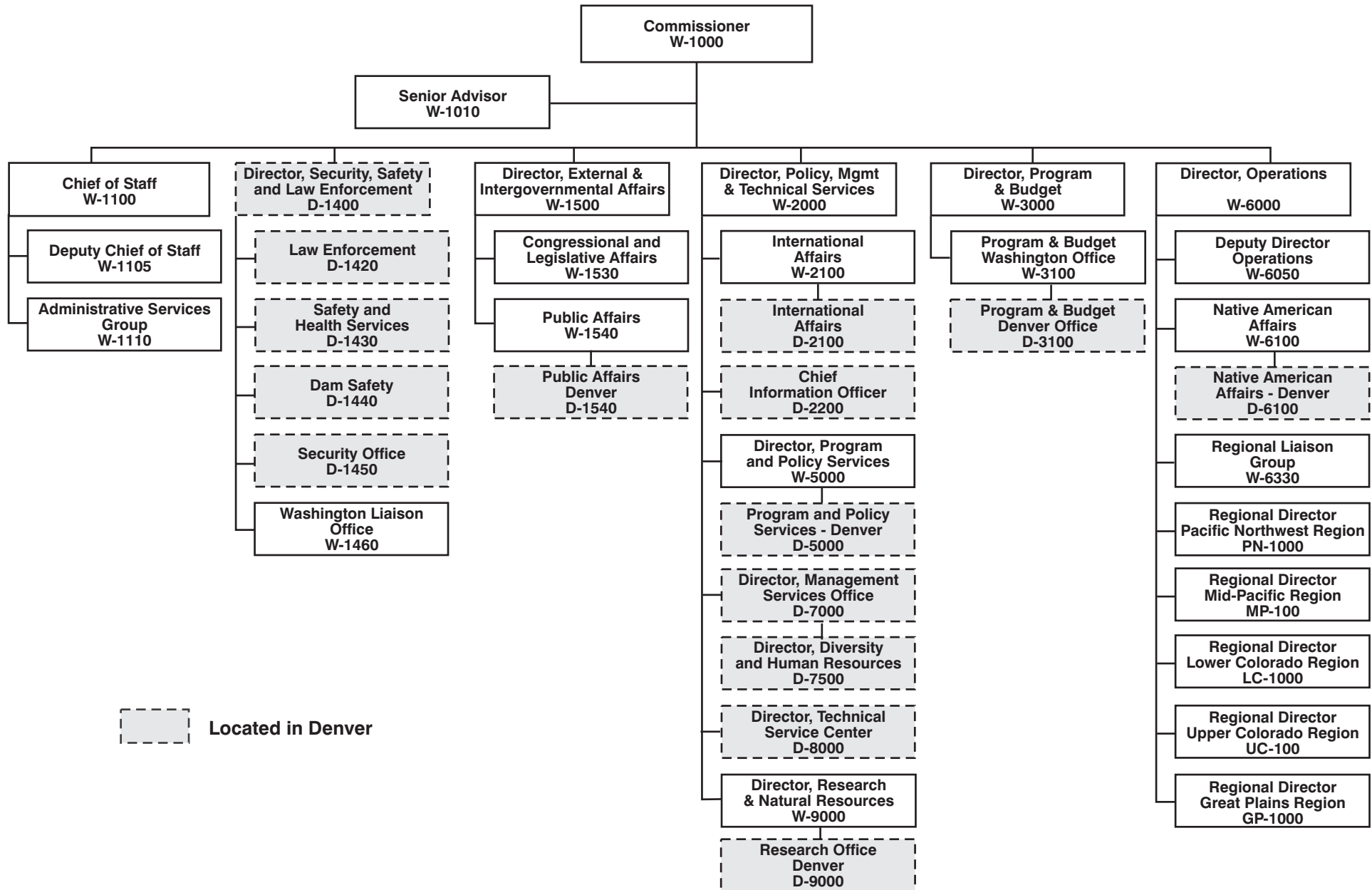
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Fax	445-6780	Room	610

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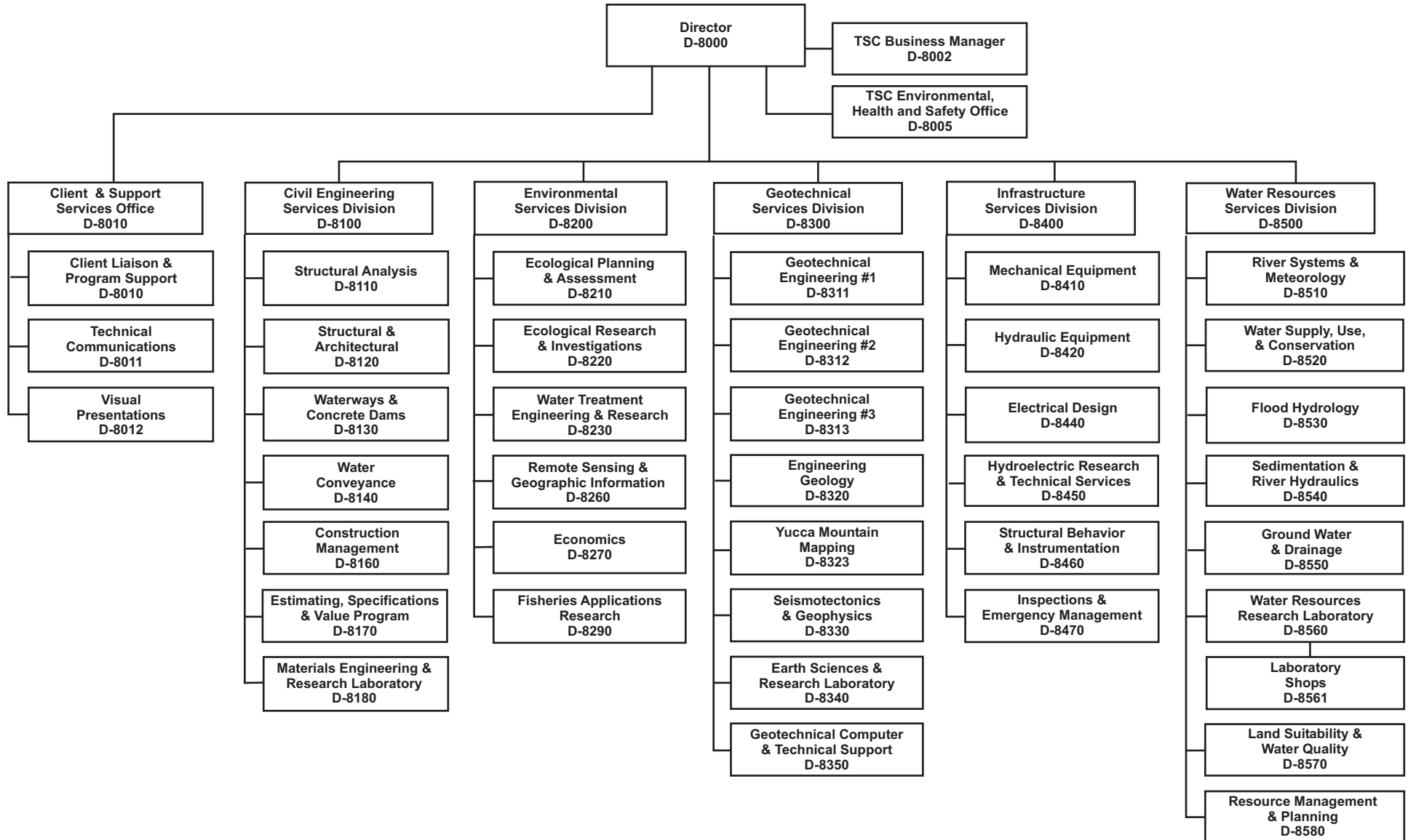
Bailey, James	2704
Black, Susan	2705
Coulter, Thayne	2706
DeVore, Chad	3689
Flynn, Kurt	2605
Johnson, Marlene	2117
McCaig, Robert	2708
Quinn, Erin	2709
Redhorse, Rebecca	2710
Welch, Darrell	2711

Department of the Interior Bureau of Reclamation

As of 5/19/03



Bureau of Reclamation Technical Service Center



**United States Department of the Interior
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Regional Boundaries**



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Bureau of Reclamation Mission

To manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American Public.