

GEOLOGIC RESOURCES DIVISION
NATIONAL NATURAL RESOURCES PROGRAM CENTER
Quarterly Report - October/November/December 1995

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GENERAL

GRD Programs Get Press Coverage - The Fall '95 issue of Park Science included a brief article on the service's recent MOU with the U.S. Geological Survey (USGS). The article mentions ongoing cooperative projects between the NPS and USGS and solicits additional project proposals in support of park research, resource management, and interpretation. Also highlighted in this issue is an abstract of John Burghardt's paper on radiological hazards at abandoned radioactive mine and mill sites. In response, GRD has received several requests for the paper from the field. (Burghardt)

Partnerships are the Wave of the Future - Division staff met with staff from the Information and Management Division with the purpose of strengthening the Divisions' interaction and cooperating on fund raising opportunities. Major issues that were discussed are Inventory and Monitoring baseline data for geologic resources, and the formation of partnerships with other federal departments, states, and private industry. In response to the meeting, the Division submitted approximately 25 park projects related to geology and disturbed lands restoration for consideration of corporate funding. (Smith)

Welcome Aboard Ron Kerbo - Our Cave Management Specialist, Ron Kerbo, has physically made the move from Santa Fe to Denver as of January 8, 1996. So he is with the rest of the division staff in the office at West Alameda Parkway, Lakewood, Colorado. His new telephone number is (303) 969-2097. We are glad to have Ron aboard and feel his specialty will add depth to the division's capacity to address geologic resource management issues.

Welcome Aboard Phil Moyle - The division is fortunate to be able to pick up the services of Phil Moyle, geophysicist/geologist from the Bureau of Mines Spokane, Washington office. The Bureau of Mines has agreed to fund Phil's appointment with the NPS until such time as his retirement in the Fall 1996. Phil will be assisting the division with its Disturbed Lands Reclamation Program at abandoned mine sites and in the performance of validity examinations of mining claims on NPS lands.

Welcome Aboard Allyson Mathis - Allyson is a seasonal employee in Capitol Reef who has volunteered to join the division for the month of February. She is a geologist with interest and experience in geologic interpretation at several parks. We are glad to have Allyson make a contribution in getting some of our geologic resource management programs off the ground. Her phone number while here at the division will be (303) 969-2153. (Higgins)

GEOLOGY

Partnership with the U.S. Geological Survey - To facilitate the recently signed Memorandum of Understanding and the emerging partnership which includes \$2 million in funding from the Survey, the NPS is exploring the possibility of collocating one office each in Reston, Virginia, and Denver, Colorado. There are a number of geologic program initiatives the two agencies will be working together on in the next few years, and these collocated offices are intended to facilitate understanding of each other's mission and improve communication research and information sharing. (Higgins)

Geologic Events Calendar - One might assume that with geologic time being measured in the millions of years, who needs a calendar of events. While that is true, those of us who talk about geologic resources need a forum to do so, hence the need for conferences, workshops, symposia, society meeting field trips, training and other items of interest. The Geological Society of America already maintains an automated calendar of major geologic events that the NPS may be able to obtain access to. We are having discussions with the Society to possibly make that calendar more comprehensive and hopefully more useful at the state level. If the NPS can gain access to the calendar that information will be passed along systemwide through home page, bulletin boards, or cc:Mail. (Higgins)

Historic Yellowstone Manuscript resurfaces after 100 years - A 1,000-page unpublished U.S. Geological Survey (USGS) manuscript was recently discovered in the National Archives. The December 1995 issue of the American Association of Petroleum Geologist (AAPG) publication "Explorer" has a very interesting cover article about the lost manuscript, its scientific value and current efforts to publish it. The story goes back to 1893 when Arnold Hague, one of the original geologists for the USGS, was appointed by Clarence King as "Geologist in Charge of the Survey of the Yellowstone National Park and Vicinity." That year and for at least seven field seasons afterward, Hague and a roster of notable assistants packed mules with their supplies and trudged out to remote sections of the park and adjacent areas where they would set up camp and proceed to explore, map and collect data. Vague reference to the work have been found in other publications but the document was said by USGS librarians to never have been written. Currently, efforts are being pursued to publish the lost manuscript. If you are interested in the article and can not locate a copy of the AAPG Explorer, you can contact the GRD, Bob Higgins via cc:Mail for a copy.

GSA Today Article Highlights Need for Increased Geologic Interpretation in Parks - The November '95 issue of Geological Society of America (GSA) Today has an article (pp. 216-218) written by Heidi Doss, an interpreter at Acadia, and her husband, Paul Doss, a professor of geology at Colby College, Maine. The article is entitled "Enhanced Earth Science Research and Public Education in the U.S. National Park System," and is all about how geologic researchers should initiate and play more active roles in geologic interpretation in NPS units. Division staff responded to the authors and the GSA staff and are considering a response article announcing the new Geologic Resources Division, its mission, and availability to coordinate geologic research and outreach in the park system. (Burghardt)

Geologists-in-the-Parks Initiative - Recently, a number of parks have expressed to the Geologic Resources Division (Denver - Natural Resources Program Center) that they would like an opportunity to hire qualified geoscientists for summer seasons and temporary positions, but they do not have the time and the means to attract such individuals. In response to this, the Division has designed an initiative to facilitate the temporary placement of geoscience professionals in the parks. This placement will take three forms depending on parks' interest and needs:

- 1) Hiring of summer seasonals via seasonal employment announcements
 - 2) Non-competitive appointments for university professors -- "Professor-in-Residence"
 - 3) VIP's, room and nominal board provided by park
- *University professors and secondary school teachers would be available during summers, leave-of-absences, and sabbaticals, and could be placed by the park through any of the three methods listed above.

The Division will take the following steps:

- 1) Write articles in newsletters of national and regional earth science teachers associations and geoscience associations
- 2) Publish advertisements in geoscience journals
- 3) Advertise at national and regional earth science teachers and geoscience association meetings
- 4) Direct mail advertisements of the program to society members and universities
- 4) Advertise the program on the world wide web

We plan to initiate the program on a small scale and, if successful, consider expanding in size and function. Ideas for expansion include: cooperating with a private group to create a scholarship program to fund a temporary position, work with SCA, encourage off season participation by teachers and professors that teach alternate quarters, and working with the USGS to facilitate details of geoscientists into parks. (Smith)

Update, Cave and Karst Management - Recent projects have included bat gates on caves in Mammoth Cave National Park, assessments of

cave resources at Petroglyphs National Monument, cultural sensitivity of the caves of Hawaii Volcanoes National Park, recommendation for the protection, development and interpretation of Cathedral Caverns State Park, Alabama, and cave management and protection in the Ukraine, including the Crimean peninsula, China, and Mexico.

We also provided Service leadership when Lechuguilla Cave (located in Carlsbad Caverns National Park) was threatened by oil and gas exploration on adjacent BLM managed lands. This leadership resulted in the passage of H.R. 698, the Lechuguilla Cave Protection Act. The Act finds that "Lechuguilla Cave...(has) internationally significant scientific, environmental, and other values and should be ... protected ... against ... adverse effects of mineral exploration and development...." The Act withdraws all Federal lands within the boundaries of a cave protection area from all forms of mineral and geothermal leasing! The cave protection area (along the North boundary of Carlsbad Caverns National Park) was established by an expert panel of geologists and speleologists put together by the National Park Service.

We have produced Memoranda of Understanding with the National Speleological Society and Bat Conservation International, provided the team leader for the rewriting of the cave and karst management section of NPS-77, provided program management direction for the service, reviewed cave management documents (including General Management Plans for cave areas) servicewide, and conducted servicewide cave management seminars and workshops. We also provided the lead for the recent feasibility study to establish a National Cave and Karst Research Institute within the National Park Service. This process continues with our participation in the drafting of legislation for the establishment of the Cave and Karst Institute. (Kerbo)

MINERALS MANAGEMENT

Pipelines, Pipelines, Pipelines - The Department of Transportation is pursuing new regulations for hazardous liquid transmission pipelines that cross environmentally sensitive areas. Last summer Sharon Kliwinski, WASO, with the assistance of the Division, submitted NPS comments directed toward ensuring that all NPS units were considered "unusually sensitive areas" (USAs). There has been some reluctance by industry and the DOT to accept this definition, or even to agree upon what constitutes a USA. To provide Sharon with some hard data, the Division merged several CAD databases and generated a map and separate database displaying which parks had liquid pipelines crossing them. The total was 130 pipelines inside of or within 1 mile of 51 park units. The data was forwarded to Sharon for a December meeting. So entertaining was the exercise, GRD staffers intend to complete the process for gas pipelines as well. (Heise, O'Dell)

CSM Conference Considered a Success, Attendance Down, Paper Quality Up, Noted Colorado Nature Photographer Provokes Crowd -

The Colorado School of Mines Symposium on Environmental Issues in the Oil Industry came off without a hitch this October. The Division is a major contributor and participant in this symposium. Attendance was about 125, down from last year's nearly 200. The quality of the talks was significantly better than last year, with many of them having direct applicability to our office. These include low impact drilling operations, air quality issues, migratory bird mortality, and spill remediation. Nature photographer John Fielder was an invited luncheon speaker who gave an exceptional slide presentation on Rocky Mountain National Park, but not before admonishing his largely industrial audience to do a better job of taking care of the land. In a post symposium meeting, the organizing committee reviewed comments and evaluations of the October meeting and made these decisions: The next conference is planned for July 1997. It will be shortened (and price reduced) to 2 days. In an effort to keep the conference in the public eye, a field trip out of Durango is planned for this July to visit fields operating on sensitive U.S. Forest Service and Bureau of Land Management lands. A visit to Hovenweep may be included. Additional information and Symposium proceedings are available from the Geological Resource Division. (Heise)

NPS Explains Small Miner Exemption to Mining Claimants in Federal Register Notice -

Under the Omnibus Budget Reconciliation Act of 1993 and Bureau of Land Management (BLM) regulations, all holders of unpatented mining claims, including those in parks, must pay an annual \$100 maintenance fee for each mining claim, mill site, and tunnel site by August 31 of each year, or else forfeit their claims. One of the few narrow exceptions to this requirement is the "small miner exemption." To be eligible for this exemption, small miners with claims in National Park System units must comply with both BLM and NPS regulations. BLM suggested and NPS agreed that it would be in the public interest to explain the interface between the two sets of regulations and the fact that incomplete compliance with the regulations results in forfeiture of one's claims. Accordingly, with the assistance of Roger Haskins of the BLM, the Division prepared a Federal Register notice explaining the interface between the BLM and NPS regulations. The notice appeared in the Federal Register on Monday, January 22, 1996. (Fulwyler, McCoy, Covington)

Division Compiles Mining-Related Provisions in Park Enabling Statutes in Response to Congressional Request -

In response to a request from Duane Thompson of the Congressional Research Service, the Division prepared a list of the provisions in various park enabling statutes that specifically pertain to mining. The provisions range from directing the NPS to specifically regulate mining to placing conditions on the Service's authority to acquire private mineral estates. If you would like a copy, please contact Julia Fulwyler at 303-969-2012. (Fulwyler)

Division Prepares Limited Revisions to NPS Procedures Manual - In 1988, the NPS prepared and distributed the NPS Procedures Governing Mining Claims: 36 CFR Part 9, Subpart A. The Procedures were designed to assure consistent application of the regulations and NPS policy Servicewide. At the suggestion of park staff, the Division is revising the document to: (1) require a cursory review of proposed plans of operations earlier in the review process than is recommended by the current version of the Procedures, (2) institute a procedure of returning to operators proposed plans that fail to contain all elements required by 36 CFR § 9.9, rather than outright rejecting such plans as currently recommended by the Procedures, and (3) explain that 36 CFR § 9.10 (c), providing for automatic approval of proposed plans of operations after expiration of the time periods set forth in 36 CFR § 9.10 (b), has been struck down as illegal by the Ninth Circuit Court of Appeals. The revisions also include a few editorial changes and a sample letter to be sent to claimants when a proposed plan of operations fails to contain all the information required by § 9.9. Prior to implementation, the revisions will be circulated to the field for review and comments. (Fulwyler, McCoy)

RECLAMATION

Department of Interior Budget Initiative Highlights AML Stormwater Program - Out of the six or so major departmental priorities specified in a letter from Secretary Babbitt to Alice Rivlen, Office of Management and Budget, one was the newly-created stormwater initiative. The Secretaries of Interior and Agriculture are proposing to commit \$8.2 million in reallocated agency funding in FY97 for the cleanup of abandoned mines on Federal lands. There is also a commitment to adopt a "watershed" approach to this task, an idea that came out of the DOI/DOA task group working on the National Pollution Discharge Elimination System (NPDES) general permit for storm water runoff at abandoned mine sites. Both are significant commitments by the Secretary. The NPS has agreed to commit \$200,000 in reallocated funds or staff time. Hopefully with this Departmental support, the agencies will be motivated to move ahead with an integrated AML program. We must remember, however, these commitments were made prior to the current budget impasse. (Higgins)

Mine Assessment for Bats Conference a Success Despite Furlough - Bat Conservation International (BCI) coordinated this conference in Phoenix during the first furlough, November 14-16. Of the 70 participants anticipated, almost 60 were able to attend. The conference was financed by the USDA Forest Service, which made up the bulk of participants. (USFS worked during the furlough.) Employees from other federal agencies attended out of personal interest on their own time despite the furlough, and several others (including John Burghardt of this division) presented as volunteers for BCI. Also presenting were noted bat researchers Scott Altenbach, Pat Brown, and Ginney Dalton. The State of Arizona sent representatives from the Mine Inspector's office,

Fish and Game, and Environmental Quality Divisions, and several local mining companies also attended. The purpose of the conference was to educate federal, state, and private land managers on the importance of preserving bat habitat in abandoned mines, learning proper surveying techniques, and assessing habitat potential where direct inspection is not possible. [Burghardt]

ASSISTANCE TO THE FIELD AREAS

PACIFIC GREAT BASIN FIELD AREA

Funding, Finally! - Joshua Tree National Park and Lake Mead National Recreation Area received funding to stabilize the Lost Horse and Katherine abandoned mine sites, respectively. The money was granted through a Western Region disaster funding initiative since both mine sites suffered damage from the heavy rains that occurred in the winter of 1995. Joshua Tree received approximately \$150,000 to fill a large collapse hole with polyurethane foam. The collapse hole is threatening to swallow up an historic mill building, which is used as an interpretive site and is listed on the National Register. Lake Mead received approximately \$165,000 to stabilize an historic gold mine whose underground voids are collapsing to the surface, creating hazardous conditions for visitors, staff, and residents. The Geologic Resources Division assisted the parks in writing the funding requests, and is assisting in designing the stabilization at each site. (Smith)

Park Visitors Need Roads? Got to have Gravel! - Staff from the Division and Mojave National Preserve met with San Bernardino County Public Works on county use of sand and gravel pits in the preserve. The county is responsible for construction and maintenance of over 200 miles of roads in the preserve. The park needs the roads maintained and wants the county to continue operations. However, the NPS does not have the legal authority to allow mining of sand and gravel in the preserve except for park administrative purposes. The park and county, therefore, must enter into an agreement. The county will act as the agent of the park and may have administrative use of mineral material through a Memorandum of Understanding. No extraction and only minimal maintenance has taken place for the last 3 years due to the impending, then enacted, California Desert Protection Act. Staff discussed NPS laws and policies and devised a general plan of action. The following day GRD staff met with the county road foreman, inspected extraction sites/maintenance areas, discussed upcoming road projects and the material quantities needed. The Division will assist the park by: delineating minable areas, developing operating standards, and doing a comparison of internal extraction versus external extraction costs as required in Special Directive 91-6. (Ziegenbein)

Claimant Erroneously Demands Automatic Approval of Proposed Plans of Operations in the California Desert Parks - John Wheeling, a

claimant with mining claims in Death Valley National Park, Mojave National Preserve, and Joshua Tree National Park, asserted in a letter to those three parks that delays in reviewing and approving his proposed plans of operations constituted, pursuant to 36 CFR Part 9.10(c), automatic approval of his proposed plans of operations and all related permits. At the parks' request, the Division drafted a letter to Mr. Wheeling for the parks' signatures. The letter explained to Mr. Wheeling that two court decisions within the Ninth Circuit held that 36 CFR § 9.10(c) is void because an agency cannot exempt itself through rulemaking from its duties under Federal statute. In Northern Alaska Environmental Center et al. v. Hodel et al., No. J85-009 (D. Alaska July 22, 1985), the District Court voided 36 CFR § 9.10(c), reasoning that the NPS was allowing mining-related activities in parks absent environmental review and was therefore violating the requirements of the National Environmental Policy Act. On appeal, the Ninth Circuit Court of Appeals upheld the District Court's ruling. Northern Alaska Environmental Center et al. v. Hodel et al., 803 F.2d 466 (9th Cir. 1985). Accordingly, 36 CFR § 9.10(c) is void as a matter of law in the states governed by the Ninth Circuit, including Alaska, Arizona, California, Hawaii, Idaho, Montana, Nevada, Oregon and Washington. While this provision has not been struck down by other courts, the Director, via a memorandum dated 4/10/92, voided the provision Servicewide as a matter of policy. The letter also informed Mr. Wheeling that his submitted plans did not meet the information requirements of § 9.9 and therefore were being returned as incomplete. (Fulwyler, McCoy)

Cal Desert Act Remedies Private Surface Owner's Concern Regarding Mineral Exploration Development On Her Property in MOJA - A few years ago, prior to MOJA receiving status as an NPS unit, the owner of a surface estate in MOJA applied to the BLM for a section 209(b) conveyance. Federal Land Policy and Management Act (FLPMA) section 209(b) authorizes the transfer of federally owned mineral interests to non-federal surface owner under certain conditions. Fearing mineral exploration and development on her surface estate, the private surface owner sought to bring the minerals into her fee title and applied for a FLPMA 209(b) conveyance. That application is still pending in the BLM California state office. Upon passage of the California Desert Protection Act, MOJA became an NPS unit. Section 507 of the Cal Desert Act withdraws the lands from disposal under the public land laws and, subject to valid existing rights, effectively prohibits any type of mineral exploration or development within its boundaries. MOJA resources managers and the division maintain that in light of section 507 of the Cal Desert Act, the FLPMA 209(b) conveyance is not only prohibited but unnecessary. By withdrawing MOJA's lands from any mineral exploration or development, the Cal Desert Act accomplishes the goal which the private surface owner intended to achieve through FLPMA section 209(b). The division has contacted WASO/SOL to assist the park in convincing the BLM to withdraw the 209(b) application and return the surface owner's application fees. The park has also

contacted the private surface owner directly to assuage any concerns she may have regarding further mineral exploration or development on her property interest. (Kassman).

INTERMOUNTAIN FIELD AREA

Mesa Verde Responds to an Adjacent Sand and Gravel Operation ...

Fast! - The superintendent of Mesa Verde discovered that a state permit was being issued to extract sand and gravel adjacent to the park. The state was issuing the permit that very day! Division staff was asked for immediate help to identify issues, devise mitigations, and allow the superintendent to provide comments to the Colorado State Division of Minerals and Geology within hours. The key issues were: protection of water quality, secondary containment of fuel and other hazardous materials, fugitive dust/air quality, rapid revegetation and visual concerns. (Ziegenbein)

Division Reviews Multiple Well Plan of Operations for Lake

Meredith - Sanabi Oil Company is seeking approval to continue operations of three oil wells at Lake Meredith National Recreation Area in Texas. The Division recommended the superintendent not officially accept the plan as "complete" for formal analysis and consideration for approval. The main deficiency was the lack of operation plats that identify the area of operations. The area of operations includes present and past surface disturbance associated with the wells, including surface facilities and access roads. It is very important to clearly and accurately define the area of operations. The operations plat provides the basis for defining Sanabi's area of responsibility for reclamation. We also identified several other shortcomings in Sanabi's plan and suggested remedies that could be incorporated directly into the plan or used as conditions of approval. (O'Dell)

Operators Plug Wells in Big Thicket During Government Shutdowns -

Two different operators plugged wells in Big Thicket National Preserve in Texas during the government shutdowns. In both cases, the work was authorized under an approved plan, but the timing precluded NPS oversight. The park opted to allow the operators to proceed based on knowledge of the well plugger's good reputation. Also, the scheduling during the shutdown was not premeditated, and the NPS had been pressuring the operators to plug the wells for some time. During plan review, the Division determined that the surface casing was properly cemented through all usable quality water zones in each case. The main objective then was to prevent leakage of hydrocarbons or saltwater to the surface. Although NPS oversight during the actual pluggings was precluded by the shutdowns, any problems will be readily identified during the surface reclamation period. (O'Dell)

Drilling Near Carlsbad Caverns National Park Threatens

Lechuguilla Cave, GRD Provides Technical Assistance - In October,

Carlsbad Caverns National Park and the Bureau of Land Management became involved in a "communication crisis" over drilling proposals near the park. The Bureau, independently of the NPS, agreed to the terms of a lawsuit settlement with the oil company wanting to drill. The settlement would allow the company to drill wells north of the park without regard for the "enhanced precautionary measure" for drilling developed in the Dark Canyon EIS. The NPS had been a cooperating agency for the EIS and was deeply concerned that dropping the enhanced precautionary measures would jeopardize Lechuguilla Cave and other cave resources in and near the park. The Bureau contended that their standard stipulations and conditions of approval could accomplish the needed protection to Carlsbad cave/karst resources. Division staff promptly flew to Carlsbad to meet with Bureau technical staff to evaluate the technical aspects of the claim. Following the meeting, the Division drafted a memo for the superintendent's signature that spelled out in detail the technical aspects of agreements reached at the meeting. That memo also called for a formal written commitment from the Bureau to assure that these agreements were honored in the form of specific drilling stipulations and conditions of approval on the Yates wells. At NPS urging, the Bureau attached improved drilling, casing cementing, and mud handling requirements to the drilling permit. The permit still fell short in handling of drilling mud and cuttings disposal. The Division will continue to work with Carlsbad Caverns and the Bureau to ensure adequate protection of park resources. This will likely include onsite visits by Division staff during the site construction and drilling. (O'Dell)

Options Developed for Convest's Proposed Reclamation at the Vantage Site on Padre Island - Staff from Geologic Resources Division (GRD), Water Resources Division (WRD), and Padre Island National Seashore (PAIS) met to plan the next phase of the Vantage site cleanup. The Vantage site is a former oil and gas production facility on the Laguna side of Padre Island having areas highly contaminated by years of operations. Convest Energy acquired Vantage for their other assets and found themselves owning this contaminated site as well. WRD staff members Gary Rosenlieb and Roy Irwin reviewed the information they had compiled since an August onsite meeting when Convest proposed encapsulating the contaminated soil. Based on their research of impacts on vegetation and wildlife, the group prepared a joint GRD/WRD letter to the park Superintendent recommending four options the park can offer to Convest. These included; (1) removing the soil, (2) actively remediating the soil, (3) funding a long term research project on the remediation, or (4) any combination of the three. In each case specific cleanup criteria must be developed. The park forwarded our suggestions to Convest and, as of year's end, was awaiting their response. (Heise, Woods)

Division Gearing Up To Assist With Padre MMP - In the wake of its initial successful defense against private mineral owners claims

of onerous and ultra vires regulatory control, Padre Island has initiated the development of a Minerals Management Plan (MMP). The MMP will become an integral part of PAIS resource management program and will provide further assistance to operators who seek to exercise oil and gas rights in or adjacent to park boundaries. A final MMP is expected within two to three years. (Kassman, Woods, Heise, O'Dell).

Task Directive for Viking Exploratory Oil & Gas Well

Environmental Assessment reviewed by Division - Resource Management staff at Glen Canyon have written a task directive for preparing the Viking well EA. Essentially it defines what roles the Utah Bureau and the park will play. The Division reviewed it and volunteered to participate in the process by contributing suggestions for low impact operation technology. The park included the Division as one of the contributors and apparently budgeted for at least one site visit. The document next goes to the BLM for their review. (Heise, Woods)

Wells by Sand Dunes look dry as dust - The highly publicized and secretively drilled exploratory oil and gas wells drilled north of Great Sand Dunes, Colorado appear to have been economic busts. Industry publications report the first was plugged and abandoned, the second looks like it's due the same fate. Perhaps more significantly, there are still contractors waiting to be paid for their exploration work. Hopefully, this venture will soon be put to rest, although additional information is hard to come by as the exploration company seeks investors. Division staff continue to relay information to the Dunes. (Heise)

Southwest System Support Office Asks for Help on Siting New Visitor Center at Aztec Ruins

- The SWSSO requested input from the Division on siting a new visitor center near an existing oil well production facility. The SSO wanted to know what compliance issues might be involved on either the Federal, state, or local levels. The Division contacted the BLM, the Rocky Mountain Field Area Safety office, and both Colorado and New Mexico oil and gas commissions. Research indicates that, while most industry regulatory agencies have definite rules regarding siting a well near a structure, there are no rules addressing siting a structure near an existing well. There are numerous examples of wells in Aztec and Farmington in New Mexico and Fort Collins and Arapaho County in Colorado which have had restaurants, shopping centers, and subdivisions constructed directly alongside them. We advised the SWSSO that there are no compliance issues associated with the project, but careful review for visitor safety still seemed to be the prudent way to go. (Heise)

"Federal Family" Meets to Discuss New World Mine Environmental Impact Statement

- Division staff attended a meeting in Washington, D.C. of personnel from most Federal agencies involved in production or review of the draft environmental impact statement for the proposed New World Mine. Division involvement in this project began in December of 1990, when Crown Butte

Mining Inc., submitted a permit application to the State of Montana to mine gold, silver, and copper 2-1/2 miles northeast of Yellowstone National Park. As the contractor responsible for Draft EIS preparation is nearing completion of the preliminary draft document, Federal agencies gathered to attempt to ensure all agency concerns are addressed prior to release of the complete preliminary draft. Some of the more important issues discussed included communication and information flow between agencies, the review process, agency dispute resolution, identification (or not) of a preferred alternative, recent Presidential withdrawal of lands surrounding the mine permit area, EIS discussion of a buy out, and reasonably foreseeable future activities by Crown Butte Mining. Federal and state agencies involved in the proposed mining project have received several draft EIS chapters for review already, with more coming in the near future. The State of Montana says the draft EIS will be available to the public in March, 1996. As the EIS process continues Federal agencies will continue to communicate openly in an effort to move the EIS project along to a defensible conclusion. (Moss)

New World Engineering Work Group Meets With EIS Contractor -

Division staff participated in a New World "engineering work group" meeting held at the offices of ERO Resources, in Denver. ERO is the private consultant preparing the EIS analyzing impacts of the proposed New World gold/silver/copper mine adjacent to Yellowstone National Park. The engineering work group focused on draft chapter three of the EIS. Chapter three deals entirely with tailings impoundment design as proposed for the Fisher Creek drainage. Throughout the 2 day meeting, the work group offered a great number of suggestions to the EIS contractor for improving EIS descriptions and impacts analysis of the proposed 77-acre subaqueous (submerged tailings) impoundment. The EIS contractor and Gallatin National Forest representative heading up the group were very receptive to input from the NPS, EPA, and State of Montana. When released by the lead agencies, preliminary draft chapter three of the New World EIS should prove to be a very enlightening and analytical appraisal of Crown Butte Mining's highly controversial tailings impoundment design. (Moss, Cloues)

MIDWEST FIELD AREA

Some Days are Diamonds - The Division reviewed an exploration plan designed to define a minable diamond deposit at the Crater of Diamonds State Park in Arkansas. The state park now charges an entrance fee and provides the opportunity for people to collect gem quality diamonds. The state is interested in the possibility of leasing the land and allowing development of a commercial diamond mine at the park. The Southwest System Support Office requested Division review because the NPS oversees changes in use on areas that receive federal Land and Water Conservation Funds. They must advise the Secretary whether the proposal will require a conversion of the park land under the requirements of the Land & Water Conservation Fund Act.

The Crater of Diamonds State Park, Arkansas once applied for, and received \$723,808 from the Land & Water Conservation Fund for building improvements on their state owned park land. Acceptance of these funds commits the state to retain these lands for outdoor recreation purposes, or replace the land. Taking land out of recreation status and buying other land to replace it is called conversion. The state of Arkansas, funded by a consortium of diamond mine developers, have now proposed to do a deep drilling and bulk testing program to evaluate the economic value of the diamond-bearing lamproite diatreme (volcanic explosion vent) in the park. The State does not want to convert the lands at this time and contends that the exploration is for park-related scientific and interpretive purposes. Staff helped the SSO by evaluating the adequacy of the exploration plan, evaluating the adequacy of the Environmental Assessment and recommending measures to reduce the impacts of exploration. The Division also delineated the difference between scientific information gathering and pre-development economic evaluation of the deposit. (Ziegenbein)

Oil and Gas Plan of Operations Reviewed for Cuyahoga Valley -

Everflow Eastern Incorporated submitted a plan of operations to drill two wells on NPS surface estate in Cuyahoga Valley National Recreation Area. This is the first Cuyahoga Valley plan reviewed in over 6 years and is the first review process for current park staff. The park had supplied the operator with information on plan preparation from the NPS Procedures Manual several years ago, and had heard nothing until the plan came to them. The Division recommended not to accept the plan for formal review because it lacked specific information on access, production operations, well plugging, and spill control. The Division listed the informational shortcomings and provided examples from similar NPS-approved plans of operations. Our review also compared Ohio and Federal well drilling and plugging standards. The comments indicated where the operator would have to meet a higher Federal standard. The Division looks forward to assisting Cuyahoga Valley through the nonfederal oil and gas operations permitting process for this plan and several others in the works. (O'Dell)

Compensatory Royalty Agreements in the Works at Cuyahoga Valley -

An operator contacted the Bureau of Land Management about including Federal mineral properties in Cuyahoga Valley in drilling units. Since Cuyahoga Valley's enabling legislation does not include specific provisions, leasing Federal minerals was not an option. The Bureau can negotiate for compensation if federally-owned oil or gas will be drained by neighboring private wells. The agreement is called a Compensatory Royalty Agreement. The agreements are used as a mechanism to incorporate park lands when an operator needs the unavailable Federal mineral parcel to form a drilling area acceptable to state requirements. In agreements involving parks, the operator usually cannot occupy the surface estate overlying the federal minerals nor can they drill directionally into the federal mineral lease. For more

information on Compensatory Royalty Agreements, contact Pat O'Dell via cc:Mail or (303) 969-2013. (O'Dell)

NORTHWEST FIELD AREA

Blow Wind, Blow at Shi Shi Beach - During the first government shutdown and some "typical November Olympic Coast weather," Gustavson and Assoc. visited Shi Shi beach to gather preliminary data for the park in an attempt to identify mining prospects and put a value on the mineral reservation. For well over two years now, the park has been through a series of twists and turns with the purported owners of a mineral reservation on and upland from Shi Shi beach in Olympic National Park. The owners first approached the park with an ostensible plan to mine anything and everything at Shi Shi beach and, now, have changed course with the intent to sell the mineral reservation to the United States. In an effort to move negotiations forward to an agreeable settlement, the park contracted Gustavson and Assoc. to gather preliminary exploration data in an attempt to identify prospects in the beach sands. After that data is compiled and analyzed, Gustavson will attempt to put a fair market value for that part of the property interest. Though Gustavson did eventually collect all the data necessary to properly characterize the width and depth of the beach sands and locate potential prospects, the task was not without considerable effort. High winds and heavy rain graced park rangers and Gustavson's geologist on their first trip out to Shi Shi beach. On the return trip, Olympic Park ranger provided expert assistance to Gustavson's geologist fording a swift Petroleum Creek. Not without hesitation, Gustavson's geologist returned to the beach a few days later to complete his work. Gustavson's final report should be finished near the beginning of February. The park, with the Division's assistance, will then meet with the purported owner and their representatives to discuss Gustavson's findings. (Kassman, Shaver, Covington, Cloues, Moss)

SOUTHEAST FIELD AREA

Drilling Operations at Big Cypress Resume After 8 Years of Inactivity - Following approval of their master plan of operations in July, Calumet Florida, Incorporated began drilling at Raccoon Creek in early September. The field's previous operator, Exxon, completed the last well drilled in Big Cypress National Preserve in late 1987. Three months later and \$1 million dollars over budget, Calumet is still trying to complete their first well. Delays due to downhole drilling problems have not had any environmental consequences. With one exception, Calumet is doing very well in regards to plan compliance. A continuous water quality monitoring and early warning system called for in the plan is not yet in place despite the active drilling program. The park issued Calumet a letter of noncompliance and expects a quick remedy. Twice monthly water quality sampling/testing has not indicated any problems. The results of the first well will play a large part in the

operator's plans to drill another 9 wells in Raccoon Point. Also, the proposed seismic survey in the Raccoon Creek Field is not likely to happen this winter due to the extremely high rainfalls and resulting water levels in the area. (O'Dell)

GENERAL

GRD programs get press coverage - The Fall '95 issue of *Park Science* included a brief article on our recent MOU with the U.S. Geological Survey (USGS). The article mentions ongoing cooperative projects between the NPS and USGS and solicits additional project proposals in support of park research, resource management, and interpretation. An abstract of John Burghardt's paper on radiological hazards at abandoned radioactive mine and mill sites was also highlighted in this issue. In response, GRD has received several requests for the paper from the field. [Burghardt]

Mine Assessment for Bats Conference a success despite furlough - Bat Conservation International (BCI) coordinated this conference in Phoenix during the first furlough, November 14-16. Of the seventy participants anticipated, almost 60 were able to attend. The conference was financed by the USDA Forest Service, which made up the bulk of participants. (USFS worked during the furlough.) Employees from other federal agencies attended out of personal interest on their own time despite the furlough, and several others (including John Burghardt) presented as volunteers for BCI. Also presenting were noted bat researchers Scott Altenbach, Pat Brown, and Ginney Dalton. The State of Arizona sent representatives from the Mine Inspector's office, Fish and Game, and Environmental Quality Divisions, and several local mining companies also attended. The purpose of the conference was to educate federal, state, and private land managers on the importance of preserving bat habitat in abandoned mines, learning proper surveying techniques, and assessing habitat potential where direct inspection is not possible. [Burghardt]

GSA Today article highlights need for increased geologic interpretation in parks - The Nov. '95 issue of *GSA Today* has an article (pp. 216-218) written by Heidi Doss, an interpreter at Acadia, and her husband, Paul Doss, a professor of geology at Colby College, Maine. The article is entitled "Enhanced Earth Science Research and Public Education in the U.S. National Park System," and is all about how geologic researchers should initiate and play more active roles in geologic interpretation in NPS units. Division staff responded to the authors and the GSA (Geologic Society of America) staff and are considering response announcing the new Geologic Resources Division, its mission, and availability to coordinate geologic research and outreach in the system. [Burghardt]

Partnerships are the Wave of the Future - GRD staff met with staff from the Information and Management Division with the purpose of strengthening the Divisions' interaction and cooperating on fund raising opportunities. Major issues that

were discussed are Inventory and Monitoring baseline data for geologic resources, and the formation of partnerships with other federal departments, states, and private industry. In response to the meeting, GRD submitted approximately 25 park projects related to geology and disturbed lands restoration for consideration for corporate funding. (Smith)

Geologists-in-the-Parks Initiative - Recently, a number of parks have expressed to the Geologic Resources Division (Denver - Natural Resources Program Center) that they would like an opportunity to hire qualified geoscientists for summer seasons and temporary positions, but they do not have the time and the means to attract such individuals. In response to this, the GRD has designed an initiative to facilitate the temporary placement of geoscience professionals in the parks. This placement will take three forms depending on parks' interest and needs:

- 1) Hiring of summer seasonals via seasonal employment announcements
- 2) Non-competitive appointments for university professors -- "Professor-in-Residence"
- 3) VIP's, room and nominal board provided by park
- *University professors and secondary school teachers would be available during summers, leave-of-absences, and sabbaticals, and could be placed by the park through any of the three methods listed above.

The Division will take the following steps:

- 1) Write articles in newsletters of national and regional earth science teachers associations and geoscience associations
- 2) Publish advertisements in geoscience journals
- 3) Advertise at national and regional earth science teachers and geoscience association meetings
- 4) Direct mail advertisements of the program to society members and universities
- 4) Advertise the program on the world wide web

We plan to initiate the program on a small scale and, if successful, consider expanding in size and function. Ideas for expansion include: cooperating with a private group to create a scholarship program to fund a temporary position, work with SCA, encourage off season participation by teachers and professors that teach alternate quarters, and working with the USGS to facilitate details of geoscientists into parks. (Smith)

PROFESSIONAL DEVELOPMENT

PACIFIC GREAT BASIN FIELD AREA

Funding, Finally! - Joshua Tree National Park and Lake Mead National Recreation Area received funding to stabilize the Lost Horse and Katherine abandoned mine sites, respectively. The money was granted through a Western Region disaster funding

initiative since both mine sites suffered damage from the heavy rains that occurred in the winter of 1995. Joshua Tree received approximately \$150,000 to fill a large collapse hole with polyurethane foam. The collapse hole is threatening to swallow up an historic mill building, which is used as an interpretive site and is listed on the National Register. Lake Mead received approximately \$165,000 to stabilize an historic gold mine whose underground voids are collapsing to the surface, creating hazardous conditions for visitors, staff, and residents. The Geologic Resources Division assisted the parks in writing the funding requests, and is assisting in designing the stabilization at each site. (Smith)

Park Visitors Need Roads? Got to have Gravel! - Staff from GRD and Mojave National Preserve met with San Bernardino County Public Works on county use of sand and gravel pits in the preserve. The county is responsible for construction and maintenance of over 200 miles of roads in the preserve. The park needs the roads maintained, and wants the county to continue operations. However, the NPS does not have the legal ability to allow mining of sand and gravel in the preserve except for park administrative purposes. The park and county, therefore, must enter an agreement. The county will act as the agent of the park and may have administrative use of mineral material through a Memorandum of Understanding. No extraction and only minimal maintenance has taken place for the last three years due to the impending, then enacted, California Desert Protection Act. Staff discussed NPS laws and policies and devised a general plan of action. The following day GRD staff met with the County Road Foreman, inspected extraction sites/maintenance areas, discussed upcoming road projects and the material quantities needed. GRD will assist the park by: delineating minable areas, developing operating standards, and doing a comparison of internal extraction versus external extraction costs as required in Special Directive 91-6. (Ziegenbein)

INTERMOUNTAIN FIELD AREA

Mesa Verde Responds to an Adjacent Sand and Gravel Operation .. Fast! - The Superintendent of Mesa Verde discovered that a state permit was being issued to extract sand and gravel adjacent to his park. The state was issuing the permit that very day! GRD staff helped to identify issues, devise mitigations, and allow the Superintendent to provide comments to the Colorado State Division of Minerals and Geology within hours. The key issues were: protection of water quality, secondary containment of fuel and other hazardous materials, fugitive dust/air quality, rapid revegetation and visual concerns. (Ziegenbein)

Division Reviews Multiple Well Plan of Operations for Lake Meredith - Sanabi Oil Company is seeking approval to continue

operations of 3 oil wells at Lake Meredith National Recreation Area in Texas. The Division recommended the Superintendent not officially accept the plan as "complete" for formal analysis and consideration for approval. The main deficiency was the lack of operation plats that identify the area of operations. The area of operations includes present and past surface disturbance associated with the wells, including tank farms and access roads. It is very important to clearly and accurately define the area of operations. The operations plat provides the basis for defining Sanabi's area of responsibility for reclamation. We also identified several other shortcomings in Sanabi's plan and suggested remedies that could be incorporated directly into the plan or used as conditions of approval. (O'Dell)

Operators Plug Wells in Big Thicket During Government Shutdowns -

Two different operators plugged wells in Big Thicket National Preserve in Texas during the government shutdowns. In both cases, the work was authorized under an approved plan, but the timing precluded NPS oversight. The park opted to allow the operators to proceed based on knowledge of the well plugger's good reputation. Also, the scheduling during the shutdown was not premeditated, and the NPS had been pressuring the operators to plug the wells for some time. During plan review, the Division determined that the surface casing was properly cemented through all usable quality water zones in each case. The main objective then was to prevent leakage of hydrocarbons or saltwater to the surface. Although NPS oversight during the actual pluggings was precluded by the shutdowns, any problems will be readily identified during the surface reclamation period. (O'Dell)

Drilling Near Carlsbad Caverns National Park Threatens

Lechuguilla Cave, GRD Provides Technical Assistance - In October, Carlsbad Caverns National Park and the Bureau of Land Management became involved in a "communication crisis" over drilling proposals near the park. The Bureau, independently of the NPS, agreed to the terms of a lawsuit settlement with the oil company wanting to drill. The settlement would allow the company to drill wells north of the park without regard for the "enhanced precautionary measure" for drilling developed in the Dark Canyon EIS. The NPS had been a cooperating agency for the EIS was deeply concerned that dropping the enhanced precautionary measures would jeopardize Lechuguilla Cave and other cave resources in and near the park. The Bureau contended that their standard stipulations and conditions of approval could accomplish the needed protection to Carlsbad cave/karst resources. Division staff promptly flew to Carlsbad to meet with Bureau technical staff to evaluate the technical aspects of the claim. Following the meeting, the Division drafted a memo for the superintendent's signature that spelled out in detail the technical aspects of agreements reached at the meeting. That memo also called for a formal written commitment from the Bureau to assure that these agreements were honored in the form of specific drilling

stipulations and conditions of approval on the Yates wells. At NPS urging, the Bureau attached improved drilling, casing cementing, and mud handling requirements to the drilling permit. The permit still fell short in handling of drilling mud and cuttings disposal. The Division will continue to work with Carlsbad Caverns and the Bureau to ensure adequate protection of park resources. This will likely include onsite visits by Division staff during the site construction and drilling. (O'Dell)

MIDWEST FIELD AREA

Some Days are Diamonds - The GRD reviewed an exploration plan designed to define a minable diamond deposit at the Crater of Diamonds State Park in Arkansas. The state park now charges an entrance fee and provides the opportunity for people to collect gem quality diamonds. The state is interested in the possibility of leasing the land and allowing development of a commercial diamond mine at the park. The Southwest System Support Office requested GRD review because the NPS oversees changes in use on areas that receive federal Land and Water Conservation Funds. They must advise the Secretary whether the proposal will require a conversion of the park land under the requirements of the Land & Water Conservation Fund Act.

The Crater of Diamonds State Park, Arkansas once applied for, and received \$723,808 from the Land & Water Conservation Fund for building improvements on their state owned park land. Acceptance of these funds commits the state to retain these lands for outdoor recreation purposes, or replace the land. Taking land out of recreation status and buying other land to replace it is called conversion. The State of Arkansas, funded by a consortium of diamond mine developers, have now proposed to do a deep drilling and bulk testing program to evaluate the economic value of the diamond-bearing lamporite diatreme (volcanic explosion vent) in the park. Arkansas State does not want to convert the lands at this time and contends that the exploration is for park-related scientific and interpretive purposes. Staff helped the SSO by evaluating the adequacy of the exploration plan, evaluating the adequacy of the EA and recommending measures to reduce the impacts of exploration. The GRD also delineated the difference between scientific information gathering and pre development economic evaluation of the deposit. (Ziegenbein)

Plan of Operations Reviewed for Cuyahoga Valley - Everflow Eastern Incorporated submitted a plan of operations to drill two wells on NPS surface estate in Cuyahoga Valley National Recreation Area. This is the first Cuyahoga Valley plan reviewed in over 6 years and is the first review process for current park staff. The park had supplied the operator with information on plan preparation from the NPS Procedures Manual several years ago, and had heard nothing until the plan came to them. The

Division recommended not to accept the plan for formal review because it lacked specific information on access, production operations, well plugging, and spill control. The Division listed the informational shortcomings and provided examples from similar NPS-approved plans of operations. Our review also compared Ohio and Federal well drilling and plugging standards. The comments indicated where the operator would have to meet a higher Federal standard. The Division looks forward to assisting Cuyahoga Valley through the nonfederal oil and gas operations permitting process for this plan and several others in the works. (O'Dell)

Compensatory Royalty Agreements in the Works at Cuyahoga Valley -

An operator contacted the Bureau of Land Management about including Federal mineral properties in Cuyahoga Valley in drilling units. Since Cuyahoga Valley's enabling legislation does not include specific provisions, leasing Federal minerals was not an option. The Bureau can negotiate for compensation if federally-owned oil or gas will be drained by neighboring private wells. The agreement is called a Compensatory Royalty Agreement. The agreements usually come up near parks when an operator needs the unavailable Federal mineral parcel to form a drilling area acceptable to state requirements. In agreements involving parks, the operator usually cannot occupy the surface estate overlying the federal minerals nor can they drill directionally into the federal mineral lease. For more information on Compensatory Royalty Agreements, contact Pat O'Dell via cc:Mail or (303) 969-2013. (O'Dell)

NORTHEAST FIELD AREA

SOUTHEAST FIELD AREA

Drilling Operations at Big Cypress Resume After 8 years of Inactivity

- Following approval of their master plan of operations in July, Calumet Florida, Incorporated began drilling at Raccoon Creek in early September. The field's previous operator, Exxon, completed the last well drilled in Big Cypress National Preserve in late 1987. Three months later and \$1 Million dollars over budget, Calumet is still trying to complete their first well. Delays due to downhole drilling problems have not any environmental consequences. With one exception, Calumet is doing very well in regards to plan compliance. A continuous water quality monitoring and early warning system called for in the plan is not yet in place despite the active drilling program. The park issued Calumet a letter of noncompliance and expects a quick remedy. Twice monthly water quality sampling/testing has not indicated any problems. The results of the first well will play a large part in the operator's plans to drill another 9 wells in Raccoon Point. Also, the proposed seismic surveys in the Raccoon Creek Field is not likely to happen this winter due

to the extremely high rainfalls and resulting water levels in the area. (O'Dell)

ALASKA FIELD AREA