



*The mission of the Mississippi Department of Environmental Quality is to safeguard the health, safety, and welfare of present and future generations of Mississippians by conserving and improving our environment and fostering wise economic growth through focused research and responsible regulation.*

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# Mississippi Department of Environmental Quality Environmental News

VOLUME 12 ISSUE 4

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## MISSISSIPPI UPDATE ON OIL SPILL RESTORATION

Great strides are underway in restoring the Mississippi Gulf Coast from injuries caused by the April 20, 2010, Deepwater Horizon Oil Spill and related response actions. With more than \$118 million in funded ecological projects aimed at making the state whole, Mississippi has a foundational start to long-term restoration of both natural resources and economic injuries.

The Deepwater Horizon Oil Spill was the largest off-shore oil spill in U.S. history, impacting resources across the Gulf of Mexico. The Mississippi Department of Environmental Quality (MDEQ) is leading the campaign to restore the Mississippi Gulf Coast's natural resources and economic injuries which occurred as a result of the oil spill. This restoration campaign is multi-faceted with efforts funded primarily through three sources: NRDA, RESTORE Act, and NFWF. MDEQ represents Mississippi on both the NRDA Trustee Council and the Gulf Coast Ecosystem Restoration Council established by the RESTORE Act. MDEQ also serves as the implementing agency working with NFWF on ecological recovery on the Mississippi Gulf Coast.



Oyster cultch early restoration project.

## NRDA – Early Restoration

As a trustee on the Deepwater Horizon Trustee Council, MDEQ works with trustees from Florida, Alabama, Louisiana, Texas, NOAA, DOI, USDA, and EPA to restore natural resources and resource services as outlined through the Oil Pollution Act and other laws. The NRDA trustees are jump-starting restoration using up to \$1 billion that BP has set aside for Early Restoration projects jointly agreed to by the trustees and BP in return for negotiated offsets against BP's liability for natural resource damages. Mississippi has funded six projects totaling over \$78 million under Early Restoration focused on natural resource and resource services restoration.

In 2012, two Early Restoration projects were implemented by MDEQ. Mississippi's Oyster Cultch Restoration project focused on restoring and enhancing oyster cultch within oyster harvest areas of the Mississippi Sound. Mississippi's Artificial Reef Habitat project enhanced nearshore artificial reefs in the coastal waters of Mississippi, aiming to increase habitat while improving the existing reefs.

The Department of the Interior implemented a project in the Mississippi District of Gulf Islands National Seashore in 2013. The Enhanced Management of Avian Breeding Habitat Injured by Response Activities in the project is intended to reduce disturbance to nesting and foraging habitat for beach nesting birds in the project areas.

In 2014, four Early Restoration projects focused both on natural resource and resource services restoration were funded. In a partnership with the National Oceanic and Atmospheric Administration (NOAA), Mississippi and NOAA funded the Hancock County Marsh Living Shoreline project which will provide for construction of a living shoreline, approximately 46 acres of marsh and subtidal oyster reefs in Hancock County. Mississippi will also fund Restoration Initiatives at the INFINITY Science Center, Popp's Ferry Causeway Park and Pascagoula Beachfront Promenade focusing on restoring lost recreational use.

In April 2015, the trustees identified two additional Early Restoration projects to be proposed for Mississippi. The first is a \$30 million project using living shoreline technologies to construct more than four miles of breakwaters, five acres of intertidal reef habitat, and 267 acres of subtidal reef habitat at eight locations across the Gulf Coast. The "Restoring Living Shorelines and Reefs in Mississippi Estuaries" project would restore intertidal and subtidal reefs and use living shoreline techniques in four bays: Grand Bay, Graveline Bay, the Back Bay of Biloxi and vicinity, and St. Louis Bay.

The second project, “Bike and Pedestrian Use Enhancements at Davis Bayou, Gulf Islands National Seashore,” would be implemented by the Department of the Interior to address lost recreational use by enhancing visitor recreational experiences at the Davis Bayou Unit of the National Park Service’s Gulf Islands National Seashore in Ocean Springs. The park’s roadway would be enhanced for pedestrians, joggers, and bicyclists. The estimated cost for this project is \$6,967,000.

### **NFWF**

Nearly \$40 million in ecological restoration and planning projects have been funded through the National Fish and Wildlife Foundation’s (NFWF) Gulf Environmental Benefit Fund. These projects address high priority conservation needs and represent important efforts to protect and enhance natural and living resources on Mississippi’s Gulf Coast.

Three projects funded in 2013 focus on evaluating coastal stream habitats, coastal bird habitats and invasive species management along the Mississippi Coast. These projects are aimed at gaining a better understanding of the restoration needs of these resources so that future efforts can garner the greatest outcomes.

Mississippi also received \$3.6 million for a multi-phase, three-year project designed to develop a comprehensive plan for restoring and conserving Mississippi’s coastal natural resources. This effort offers the first opportunity for Mississippi to establish a single, comprehensive approach to restoration planning that enables the state to prioritize projects in order to make funding recommendations that optimize environmental benefits along Mississippi’s Coast. This initiative is intended to produce meaningful and measurable outcomes, engage technical experts and key stakeholders, and produce science-based activities and results while exhibiting cost effectiveness and addressing injury to habitats and species affected by the Deepwater Horizon Oil Spill.

In 2014, Mississippi received funding for three projects. The Invasive Species Management project builds on the project funded in 2013 by incorporating management efforts on additional state lands. The Reef Fish Assessment project is a two-year effort that will implement a significant and meaningful expansion of the collection of data on both catch effort and stock assessment of reef fish species in coastal Mississippi. The Marsh Restoration project focuses on the beneficial utilization of dredge material to restore coastal marsh habitat along the Gulf Coast.

## RESTORE

The RESTORE Act creates an unprecedented opportunity for the five affected Gulf States to oversee and implement ecological and economic restoration necessitated by the 2010 oil spill. The Gulf Coast Ecosystem Restoration Council (RESTORE Council) was formed by the RESTORE Act and is comprised of governors from the five affected Gulf States, the Secretaries from the U.S. Departments of the Interior, Commerce, Agriculture, and Homeland Security as well as the Secretary of the Army and the Administrator of the U.S. Environmental Protection Agency. MDEQ was appointed by Governor Bryant to represent Mississippi on the RESTORE Council.

The uniqueness of the RESTORE Act and what it represents means that some preliminary tasks must be accomplished before projects can be funded. The U.S. Department of the Treasury and the RESTORE Council each administer two of the five components funded under the RESTORE Act. Each entity is required to establish rules, systems and processes for administration of these funds. In October 2014, The U.S. Department of the Treasury cleared the last hurdle by publishing its procedures as an Interim Final Rule. Eligible applicants under the Treasury administered components can now begin working to satisfy Treasury and RESTORE Act requirements for accessing funds. The RESTORE Council continues to work toward finalizing its rules, systems and processes for the funds it will administer.

Under the RESTORE Act, Mississippi is eligible to receive funding directly from four of the five components. Funds made available to Mississippi may be used for both ecological and economic recovery projects including research projects.

## THE JOURNEY AHEAD

While tremendous progress has been made to restore Mississippi's Coastal natural resources, the journey has just begun. Mississippi is poised to receive millions more aimed at further environmental restoration as well as economic enhancement and restoration. Through continued collaboration with the public, stakeholders and other trustees, MDEQ intends to build on the strong ecological foundation created by existing projects as progress is made to "Make Mississippi Whole."

## ENHANCE CLASS OF 2015

DEQ recently accepted two new members and nine renewal memberships into its enHance program for the 2015 class. Two of the renewing members upgraded to Leader status. The recognition was part of the annual workshop and awards luncheon recently held in Jackson. Glenn McCullough was the keynote speaker for the luncheon. In addition to recognizing the 2015 membership class, two companies were presented partnership awards for outstanding leadership in the enHance program: Cooper Tire & Rubber Company and Toyota Motor Manufacturing, Mississippi, Inc.

In presenting the awards MDEQ Executive Director Gary Rikard remarked: “It is an honor to recognize these companies that are actively striving to reduce their wastes, reduce their environmental impacts, and improve the quality of life in their communities. Their vision and leadership is to be commended, as their efforts will result in both immediate and long-term benefits for the residents of our state.”

enHance is a voluntary stewardship program begun in 2009 that recognizes committed environmental leaders who accomplish goals beyond their legal requirements. enHance is open to facilities, cities, counties, and other entities who are interested in the program, and applicants can choose from three tiers: Associate, Steward, or Leader.

Robert Zelinka presenting Plymouth Tube's Manufacturing Excellence Program.



Top: Awards luncheon speaker Glenn McCullough, Former TVA Chair and Tupelo Mayor, and MDA Executive Director nominee.

Middle: MDEQ Executive Director Gary Ri-kard with Akzo Nobel of Columbus (Leader).

Bottom: Ark-Ell Springs of Houlka (Leader).



Top: Baxter Healthcare, Cleveland (Leader).

Middle: Hunter Douglas, Tupelo (Leader).

Bottom: Mississippi Lignite Mining Company, Choctaw County (Leader).



Top: Nucor Steel and General Recycling, Flowood (Leader).

Middle: Plymouth Tube Company, Eupora (Associate).

Bottom: Super Sagless, Tupelo (Leader).



Top: City of Hernando (Steward).

Middle and bottom: enHance Partnership Awards presented to Toyota Motor Manufacturing, Mississippi, Inc. and Cooper Tire & Rubber Company for their support of the program throughout the year.





## STAFF CHANGES

### Melanie Green

Melanie Green was recently appointed Office Director of the Accounting Division within MDEQ's Office of Oil Spill Restoration. The Office of Oil Spill Restoration is responsible for the administration and oversight of NRDA, RESTORE Act, and NFWF projects necessitated by the Deepwater Horizon Oil Spill.

"I'm excited to be a part of the restoration efforts that are so important to our state. I've been involved in many aspects of the oil spill since the disaster occurred. The past five years have mostly included the accountability of funds in *disaster response* mode. I look forward to being a part of the *restoration phase* of the Mississippi Gulf Coast," said Green.

Melanie has been with the agency for 13 years. She began in the Accounts Receivable Division and has spent the last 10 years within the Budgeting Bureau assisting with the development of the agency's budget and serving as the Division Director for the Contracts and Grants Management Divisions. She is a native of Pearl and earned a B.S. in Business Administration and a Masters of Business Administration, both with an Accounting concentration, from Mississippi College. Melanie has one daughter and lives in Hinds County.

### Becky Nester

Becky Nester has been named Chief of the Metals and Metal Manufacturing Branch within the Environmental Permits Division. The Environmental Permits Division (EPD) implements and oversees most of the permitting programs for MDEQ. EPD also provides support to the Environmental Compliance and Enforcement Division (ECED) in regulating permitted facilities.

"I am honored to be given this opportunity to further our efforts to protect the environment and foster business growth through sound environmental permitting," said Becky Nester.

Becky has been with the agency almost 19 years, and was a permit writer for the last 15 years in the Agricultural Branch of EPD. She was born and raised in Jackson and earned a B.S. in Chemical Engineering from Mississippi State University. Becky, her husband Jeff, and Becky's two sons currently reside in Madison.

## SMALL BUSINESS ENVIRONMENTAL ASSISTANCE PROGRAM TO HOST WORKSHOP FOR CHILDCARE FACILITIES

MDEQ's Small Business Environmental Assistance Program will host a free workshop for childcare facility owners and operators on Tuesday, May 19, 2015, at the Jackson Marriott Hotel, located at 200 East Amite Street in Jackson. As the result of an assistance request from multiple daycare centers using septic tanks or aerobic treatment units, the need for this workshop was evident to help facilities create safer, healthier environments for children to learn and grow.

**SAVE-THE-DATE**

**MAY 19, 2015**

### Empowering Childcare Centers for a Healthy Mississippi Workshop

Mississippi Department of Environmental Quality Office of Community Engagement will be hosting a **FREE** pre-conference workshop for childcare facility owners and operators in conjunction with the 7th Empowering Communities for a Healthy Mississippi Conference. This workshop is intended to help empower the childcare industry by improving knowledge and awareness of common environmental issues.



**REGISTRATION IS FREE!**



#### ENVIRONMENTAL ASSISTANCE WORKSHOP

TUESDAY, MAY 19, 2015

JACKSON MARRIOTT DOWNTOWN

JACKSON, MISSISSIPPI 39201

10:00AM - 4:00PM

REGISTER NOW BY CALLING:

**1-800-725-6112**

*Seating is limited to 50 participants*

*Licensed childcare providers can receive 5 contact*

MDEQ Office of Community Engagement  
Small Business Environmental  
Assistance Program

For more information contact  
Taaka Scott-Bailey at 601-961-5626  
[Tbailey@mdeq.ms.gov](mailto:Tbailey@mdeq.ms.gov) or  
Jennifer Carter at 601-961-5676  
[jcarter@mdeq.ms.gov](mailto:jcarter@mdeq.ms.gov)



## DAM SAFETY AND EMERGENCY ACTION PLAN EXERCISES

By Dusty Myers, Chief, MDEQ Dam Safety Division

The Dam Safety Program classifies all regulated dams into three categories: High Hazard, Significant Hazard, or Low Hazard. The failure of High Hazard dams may cause loss of life; serious damage to residential, industrial, or commercial buildings; or damage to, or disruption of, important public utilities or transportation facilities such as major highways or railroads. Significant Hazard dams are dams that pose no threat of loss of life or major property damage but may cause significant damage to main roads or public utility services. Low Hazard dams' failures may result in damage to agricultural land or minor roads.

All High Hazard dams are required to have Emergency Action Plans (EAPs) which define the area that would be flooded downstream in the event of a dam failure and contain procedures for emergency detection, classification, and evacuation. During the development of these plans a copy is provided to local officials, but there is little opportunity for input, potentially making these plans less effective in carrying out their intended purpose of preventing loss of life from dam failures. In order to bridge this gap, MDEQ's Dam Safety Program is working with High Hazard dam owners to test the effectiveness of their EAPs by conducting tabletop exercises.

The most recent of these exercises was conducted on March 26, 2015, when the Dam Safety program, working with Pearl River Valley Water Supply District, facilitated an Emergency Action Plan tabletop exercise for the Ross Barnett Reservoir dam.



Participants from several state agencies, along with numerous county and municipal officials, came together to evaluate the effectiveness of the EAP and to make plans in the event of a dam failure or an incident at the Ross Barnett Reservoir.

The Dam Safety Program is planning tabletop exercises this summer for the Dalewood Shores Lake Dam near Meridian and the Fortieth Place Lake Dam in Hattiesburg. These exercises will give local officials the opportunity to review the plan and provide input that could be critical in saving lives and property in the event of a dam failure.

The Dam Safety Program encourages dam owners to conduct EAP exercises of their own as well. These exercises can be more or less complex than a tabletop exercise. In accordance with the Federal Guidelines for Dam Safety, there are seven types of exercises which may be done to evaluate an EAP:

### **Discussion-based Exercises**

Discussion-based exercises familiarize participants with current plans, policies, agreements, and procedures, or may be used to develop new plans, policies, agreements, and procedures. The following are types of discussion-based exercises:

- ▶ **Seminar** — an informal discussion designed to orient participants to new or updated plans, policies, or procedures (e.g., a seminar to review a new Evacuation Standard Operating Procedure). Seminars should include internal discussions as well as coordination with emergency management authorities and other organizations with a role in EAP implementation.
- ▶ **Workshop** — similar to a seminar but is used to build specific products such as a draft plan or policy.
- ▶ **Tabletop Exercise** — involves key personnel discussing simulated scenarios in an informal setting. Tabletop exercises can be used to assess plans, policies, and procedures.
- ▶ **Games** — a simulation of operations that often involves two or more teams, usually in a competitive environment, using rules, data, and procedures designed to depict an actual or assumed real-life situation.

## Operations-based Exercises

Operations-based exercises validate plans, policies, agreements and procedures; clarify roles and responsibilities; and identify resource gaps in an operational environment. Types of operations based exercises are:

- ▶ **Drill** -- a coordinated, supervised activity usually employed to test a single operation or function within a single entity, such as testing sirens and warning systems, calling suppliers, checking materials on hand, and conducting a call-down drill of those listed on the Notification Flowchart.
- ▶ **Functional Exercise** -- examines and/or validates the coordination, command, and control between various multi-agency coordination centers, such as Emergency Operation Centers (EOCs) and Joint Field Offices. A functional exercise does not involve any “boots on the ground” such as first responders or emergency officials responding to an incident in real time.
- ▶ **Full-Scale Exercises** -- a multi-agency, multi-jurisdictional, multi-discipline exercise involving “boots on the ground” response to a simulated event, such as activation of the EOC and role-playing to simulate an actual dam failure.

To find out more about dam safety and emergency action planning, please visit [www.deq.state.ms.us](http://www.deq.state.ms.us) and click on the “Dam Safety” link or contact Dusty Myers at (601) 961-5207 or [DMyers@deq.ms.gov](mailto:DMyers@deq.ms.gov).



## MDEQ PARTNERS WITH LOCAL GOVERNMENTS TO SPONSOR SPRING 2015 HHW COLLECTION EVENTS



MDEQ is providing grants and technical assistance to a number of local governments throughout the state to sponsor upcoming collection events for household hazardous wastes (HHW). Solid Waste Assistance Grants awarded by MDEQ to these communities will provide funding for the local HHW collection events. These collection events provide local options to properly and safely dispose of aerosols, corrosives, pesticides, herbicides, paints, used oil, batteries, automotive fluids, electronic wastes and other household hazardous materials. The events remove these hazardous materials from the municipal solid waste stream so they are not disposed in local landfills. Local governments that are planning to conduct HHW events that MDEQ is aware of include the following:

<b>Community Sponsor</b>	<b>Planned HHW Event Date</b>
Wayne County	May 9
Madison County	May 16
Warren County	June 6

The information listed above represents the best available information at the time of publication. These dates are subject to change and other community events may be added in the near future.

Contact local city or county officials for more details on these events. Other counties, municipalities and solid waste authorities may apply to conduct HHW events by submitting a grant application by October 1 or April 1 of each funding year through MDEQ's Solid Waste Assistance Grants Program. For more information on solid waste assistance grants or for a particular event, contact Luis Murillo or Denise Rodgers at 601-961-5171.

## MDEQ RECEIVES KMB AWARD

MDEQ's Regional Recycling Cooperative Grants Program was honored recently by the Keep Mississippi Beautiful organization at the statewide awards luncheon on April 16 in Jackson. The MDEQ program received the First Place in the State Government award for outstanding programs and efforts that improve the beauty of Mississippi and enhance the quality of life of Mississippians. The MDEQ Regional Recycling program was created several years ago by the State Legislature to provide additional investment through local government grants into the state's recycling infrastructure. The grants program was designed to promote the development of cooperative programs among municipal and county governments in rural, underserved areas of the state to collect, manage and market recyclables. Pictured receiving the award on behalf of MDEQ is Mark Williams (center) with the MDEQ Solid Waste and Recycling program from Stephanie Hutchins (left), Chairman of the Board of Directors for Keep Mississippi Beautiful and Neeley Norman (right), Assistant Director of Keep Mississippi Beautiful.





## ADOPT-A-STREAM JUNE 16 TO 17

The Mississippi Wildlife Federation and MDEQ will hold a two-day Adopt-A-Stream workshop at John W. Kyle State Park near Sardis on June 16 and 17, 2015.

**Adopt-A-Stream** is a program that promotes environmental stewardship through training workshops, outdoor field activities and by introducing participants to watershed action projects.

The two-day program provides an in-depth study of watersheds, as well as hands-on training in chemical and biological parameters important to a healthy stream. In addition, the workshop will:

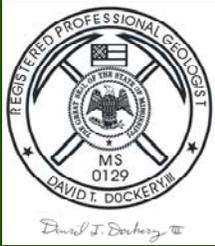
- Increase awareness of nonpoint source pollution.
- Introduce surveying and mapping of a watershed.
- Increase watershed protection awareness and possible actions that can be taken to help a watershed. A new model of *It Begins at Home* has ideas for projects such as:
  - ▶ Storm Drain Marking
  - ▶ Stream Cleanups
  - ▶ Recycling
  - ▶ Advocacy and More

### Who Should Participate?

Educators, land managers, advocacy groups, Scout troop leaders, Envirothon Team Advisors, watershed team leaders, environmental educators, concerned citizens and others. For teachers, two CEU credits are available.

### Registration Information

Registration is available on the Mississippi Wildlife Federation/ Adopt-A-Stream website: [www.mswildlife.org/AAS/](http://www.mswildlife.org/AAS/), or by contacting Debra Veeder, Adopt-A-Stream Coordinator, at (601) 605-1790 or [dveeder@mswf.org](mailto:dveeder@mswf.org) for a registration form.



## GEOLOGY IN THE NEWS: SLOPE FAILURE ON INTERSTATE 220 NORTH AT HIGHWAY 80

David T. Dockery III, RPG, Office of Geology

The recent slope failure on Interstate 220 North at Highway 80, the interchange between Interstate 20 West and Interstate 220 North in Hinds County, was a hot news topic in late February and March of 2015. Mississippi Department of Transportation personnel scrambled to stabilize the slope before it took out the heavily used interchange. One lane of the interchange was closed as heavy equipment moved dirt and a pile driver drove in some 50 steel beams, nailing the slump to the bedrock (figures 1-3).



Figure 1. Slump in Yazoo Clay on Interstate 220 North just south of Highway 80 in Jackson. Picture was taken on February 27, 2015.



Figure 2. Left, looking north at slump in Yazoo Clay on Interstate 220 North just south of Highway 80 in Jackson. Right, looking south at slump. Pictures were taken on February 27, 2015.



Figure 3. Left, looking south at slump in Yazoo Clay on Interstate 220 North at Highway 80 in Jackson on February 27, 2015. Right, looking north at slump after repairs on March 17, 2015.

An online search of news articles found a publication on the Yazoo Clay by the U.S. Army Corps of Engineers, Engineer Research and Development Center. The report, sponsored by MDOT, *State Study 151 and 236: Yazoo Clay Investigation*, by Landris T. Lee, Jr., P.E. (June 2012) is available online: <http://mdot.ms.gov/documents/research/Reports/Interim%20and%20Final%20Reports/State%20Study%20151%20and%20236%20Yazoo%20Clay%20Investigation.pdf>.

The Corps of Engineers' publication cited several articles in MDEQ's *Environmental News*. In total there were 20 articles cited for Dockery, Starnes, and Bograd, including eleven articles published in the Office of Geology's journal *Mississippi Geology* and five articles on the Yazoo Clay in MDEQ's *Environmental News*. The publication also cited Office of Geology county geology bulletins, including those for Rankin, Scott, Smith, Yazoo, Hinds, and Madison counties. Figure 4 shows the outcrop belt of the Yazoo Clay superimposed on the Interstate system across central Mississippi from Lee's publication (2012, Figure 3). The accompanying text with the figure states: "Unfortunately the metropolitan Jackson area is located directly on top of the Yazoo Clay. Any overlying non-clay deposits (alluvium, loess, etc.) are generally not thick enough to prevent moisture and water intrusion into the Yazoo clay, and these moisture changes result in expansive, swelling, shrinkage, and otherwise destructive behavior so detrimental to the roads, foundations, and related infrastructure in the central Mississippi region." The publication noted the Yazoo Clay to be 462 feet thick in the Mossy Grove core in northwestern Hinds County.

The Mossy Grove core, drilled by the Office of Geology (Figure 5) in cooperation with the Geology Department of the University of Southern Mississippi on August 19 to September 4, 1991, has been and continues to be the subject of many scientific studies (five publications cited in Lee, 2012).

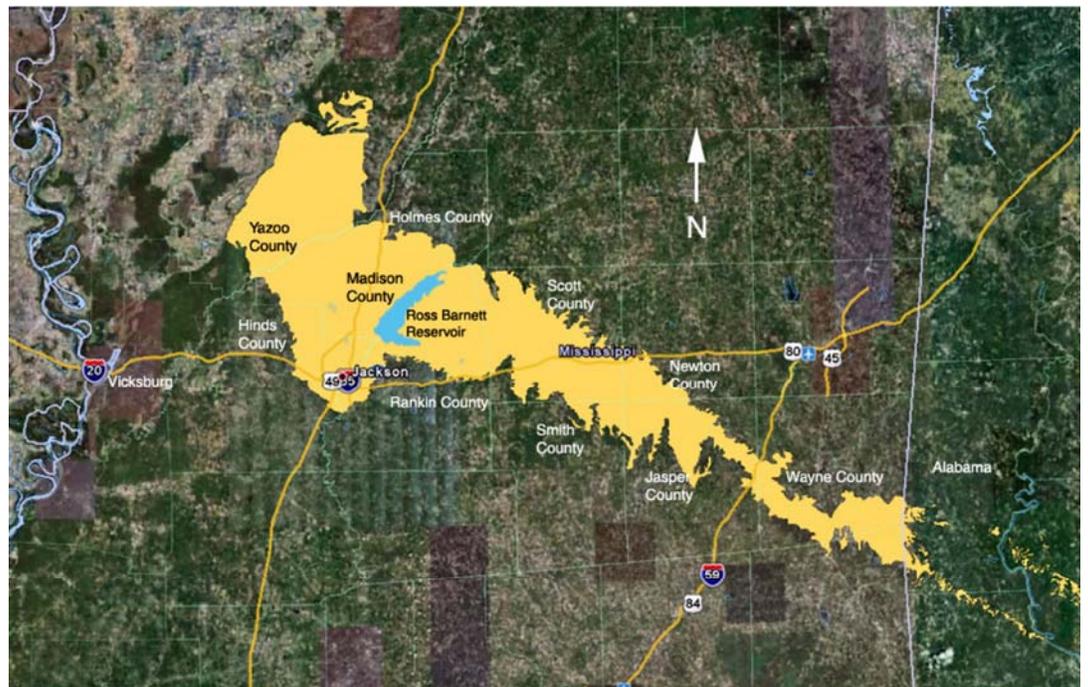


Figure 4. The Yazoo Clay outcrop belt superimposed on the Interstate system across central Mississippi from Figure 3 of Lee, June 2012, *State Study 151 and 236: Yazoo Clay Investigation*.

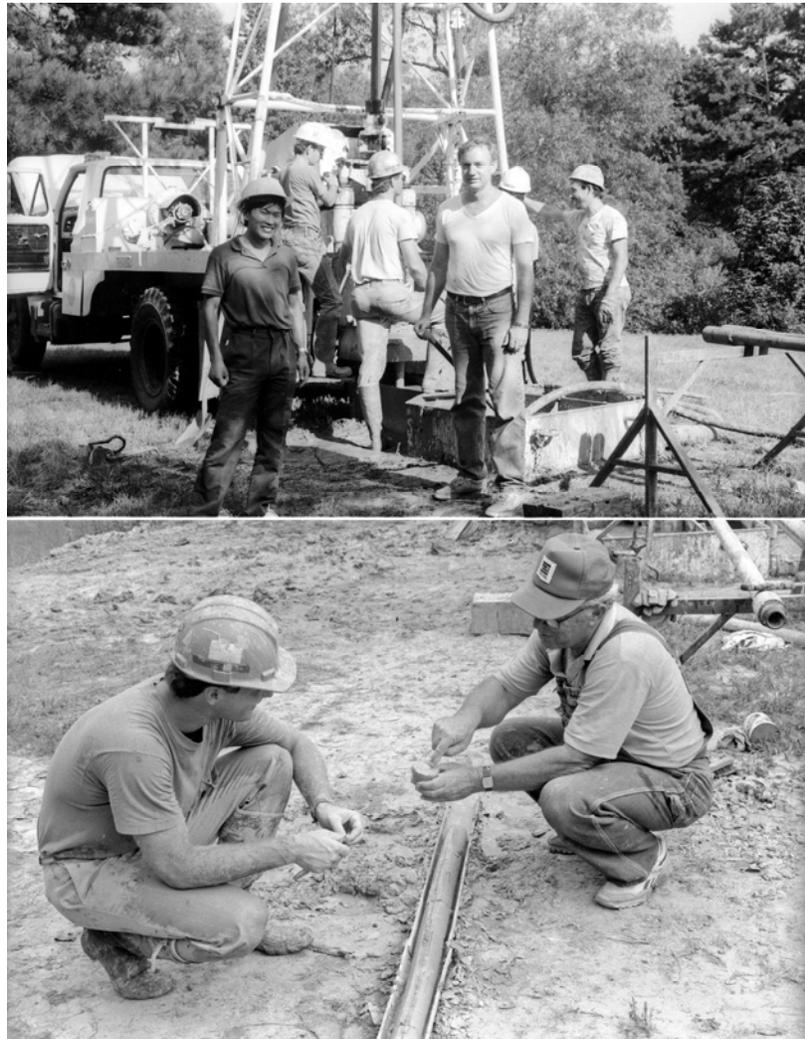


Figure 5. Top, facing the camera at left is University of Southern Mississippi graduate student Jianxin Hou and at right David Dockery. Bottom, at right is Curtis Stover, author of *Office of Geology Circular 1 on the Yazoo Clay*, telling his son Wayne Stover a thing or two about a freshly extruded Yazoo Clay core from the Mossy Grove core hole. Pictures were taken in September 1991.

One article cited by Lee, “A slope too steep: slumps in the Yazoo clay in central Mississippi” published in the July 2010 edition of MDEQ’s *Environmental News*, showed four slumps in February of 2010, two of which were located on Interstate 20 and on Interstate 220 (Figure 6). The current slump is between the two Interstate slope failures of 2010. *Environmental News* articles on slumps in the Yazoo Clay include: (1) the Millsaps College slump of January 2008, (2) the Dogwood Festival slump of February 2009, (3) the Interstate 20 and Interstate 220 slumps of February 2010, (4) the Farmer’s Market slump of February 2010, (5) the Natchez Trace Parkway slump of March 2012, (6) the Clinton Walmart slump of April 2012, (7) the Interstate 20 slump at McRaven Street of March 2013, and (8) this article on the Interstate 220 at Highway 80 slump in February 2015.

All of these are winter or early spring slope failures that were caused by increased winter rainfall totals coupled with a decreased evaporation potential due to the gray, overcast, colder, shorter winter days. Water saturation decreases the strength and cohesion of the soil and greatly increases soil weight.



Figure 6. Top, slump in Yazoo Clay on Terry Road at Interstate 20 in Jackson. Bottom, slump in Yazoo Clay on the east side of Interstate 220 North near the I-20 interchange. Pictures were taken on February 10, 2010.

## MDEQ ENVIRONMENTAL ACTION LINKS



- Draft permits currently at public notice, <http://opc.deq.state.ms.us/publicnotice.aspx>.
- Permits and certificates issued in the last 90 days, [http://opc.deq.state.ms.us/report\\_permits.aspx](http://opc.deq.state.ms.us/report_permits.aspx).
- General permit coverages issued in the last 90 days, [http://opc.deq.state.ms.us/report\\_gnp\\_issued.aspx](http://opc.deq.state.ms.us/report_gnp_issued.aspx).
- Notices of Intent for coverage under a Statewide General permit received by the Environmental Permits Division, [http://opc.deq.state.ms.us/report\\_gnp\\_notice.aspx](http://opc.deq.state.ms.us/report_gnp_notice.aspx).
- List of the 401 Water Quality Certifications currently at public notice, [http://opc.deq.state.ms.us/report\\_wqc\\_public\\_notice.aspx](http://opc.deq.state.ms.us/report_wqc_public_notice.aspx).
- List of the compliance inspections recently conducted, [http://opc.deq.state.ms.us/report\\_eced\\_tasks.aspx](http://opc.deq.state.ms.us/report_eced_tasks.aspx).
- Orders issued by the Mississippi Commission on Environmental Quality, [http://opc.deq.state.ms.us/report\\_orders.aspx](http://opc.deq.state.ms.us/report_orders.aspx).

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## PICTURE OF THE MONTH

Madison County Sunset

Taken by Lindsey Tor-  
torich, Office of Admin-  
istrative Services

