

Quality Matters

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Doug Hood Retires from Materials and Testing



Our steady and highly-principled Materials Engineer Administrator, Doug Hood,

has retired after 33 years of dedicated service to the DOTD! Hood retired January 3, 2006. An ardent advocate for quality assurance, Doug will be greatly missed for his easygoing manner, his knowledge, and the expertise he carries away with him.

A Louisiana State University civil engineering graduate, Doug began his career with the Louisiana Department of Highways in 1972 as an Engineer Intern at District 62. He transferred to the Materials

& Testing Section to become the Physical Test Engineer in 1974. Doug was promoted to Geotechnical Engineer in 1986, and, in 2001, he became the Materials Engineer Administrator.

Luanna Cambas was selected as the new Materials Engineer Administrator, effective April 17, 2006. Before joining the Materials section, Cambas spent four years in the heart of New Orleans in a construction gang as an assistant project engineer. For the following eight years, she served as the District 02 laboratory engineer. She then served for four years as the bituminous construction engineer in the headquarters construction section.

Cambas says, "This is a great time to contribute to DOTD in the area of material quality assur-

ance. If we are going to streamline our operations, then let's use this opportunity to have a better system, not just a smaller one."

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SiteManager Materials Implementation

MatLab Contacts

Beth Roberts, P.E.

SMM Project Manager

(225) 248-4107

BethRoberts@dotd.louisiana.gov

Laura Chapman

SMM Assistant Project Manager

(225) 248-4114

LauraChapman@dotd.louisiana.gov

We are underway with the implementation project for SiteManager Materials (SMM). This 17-month implementation process will involve looking at all business processes concerning the sampling and testing of materials, programming the SMM code tables, creating all test templates, and beta testing the system. SMM will provide the following benefits to DOTD:

- Automatic generation and updating of sampling plans and 2059
- Automatic application of pay penalties/incentives for an estimate
- Immediate real-time tracking of sample status, data, and pass/fail results
- Elimination of calculation errors
- Sampling and testing time-linked to construction estimates
- Tracking of certified labs, inspectors, and testers
- Accessible database and data analysis



DOTD Chief Engineer Bill Temple speaks at the SiteManager kick-off meeting

Personnel from Materials and Testing, HQ Construction, LTRC, Information Technology, District 03, and District 58 make up the Core Team charged with making SMM a reality. Eleven subcommittees are assigned to do various tasks. Additional personnel from HQ, District 04, District 05, District 07, and District 08 have been assigned to these subcommittees to assist in this process. Subject matter experts will be called in as needed.

A kick-off meeting was held at the Materials and Testing Section in May. Info Tech, Inc. (AASHTO vendor for SiteManager) presented a brief overview of the history of SiteManager and the Materials module to the team members who will be working on this effort. Chief Engineer Bill Temple, Deputy Administrator of Operations Terri Hammack, and Materials Engineer Administrator Luanna Cambas all offered support for this process, stating that they are very excited about how this project will assist the department in more than just the construction process. Examples were given of how data from SMM can be used for research purposes, creating specifications, determining what materials are being used on what projects, and maintaining lists of certified labs, samplers, and testers.

Seven states currently use SMM: Connecticut, Kansas, Indiana, Mississippi, Missouri, Oklahoma, and Texas. Nine states are in the implementation phase: Alabama, Arkansas, Kentucky, Louisiana, Michigan, Montana, New York, and South Carolina. An additional six states are evaluating SiteManager at this time: California, Idaho, Ohio, Nevada, Oregon, and Washington.

The Cement Unit has been providing cementitious evaluation services to DOTD and other agencies for over 50 years. As the only laboratory in Louisiana to provide a full range of evaluation services for cementitious products, such as Portland cement, fly ash, slags, microsilica, non-shrink grouts and other products, the Cement Unit provides a vital resource to the Department, contractors, cement mills, and other customers.

One of the first cement laboratories in the United States to achieve AASHTO Accreditation in both Cement and Fly Ash testing, the Cement Unit has demonstrated its commitment to provide quality in testing of these materials.

Likewise, the unit participates in the Cement and Concrete Reference Laboratory (CCRL) Inspection and Collaborative Testing Programs for Cement and Pozzolan to maintain accreditations.



MatLab Contact

Khiet Ngo, P.E.

(225) 248-4134

khietngo@dotd.louisiana.gov

The Cement Unit strives to provide quality services to our customers through training, acquiring new equipment, maintaining accreditations, and providing troubleshooting services.

The pre-certification of cement, fly ash, and slag mills is one of the primary services provided by the Cement Unit. Mills in this program are located throughout the United States and in several foreign countries. The Cement Unit monitors approximately 50 different mills by testing monthly samples and reviewing test data from the mills to ensure compliance with DOTD specification requirements. The Cement Unit also monitors Certificates of Delivery from the mills, storage terminals, concrete ready-mix plants, and job site deliveries for compliance with the Department's Quality Assurance Program. The Department uses the pre-certification program to ensure that DOTD and contractors have an adequate supply of these materials for construction.

Currently, the Cement Unit staff is involved with the "harmonization" of AASHTO Specification M-85 and ASTM Specification C-150 for Portland cement. The two

Dealing with Underground Storage Tanks

MatLab Contact

Joubert Harris

(225) 248-4141

JoubertHarris@dotd.louisiana.gov



In 1988, the Louisiana Department of Environmental Quality (LDEQ) implemented its underground storage tank (UST) program, which required all owners of USTs to comply with an array of environmental regulations. USTs, commonly associated with service stations along highway corridors, are used to store gasoline, kerosene, and used oil. Due to the large number of both active and abandoned USTs in the country, the U.S. Environmental Protection Agency and LDEQ took steps to reduce the threat of petroleum contamination in our soils and

groundwater. DOTD, a sister agency to LDEQ, is required to comply with the same regulations.

Although DOTD does own and operate a number of USTs throughout the state, the ones that concern the Department—particularly the construction project program—are those that it owns but never operates. DOTD often ends up owning USTs

Once DOTD assumes ownership of either a UST or the associated contaminated soil or groundwater, it is held to the environmental regulations that require the removal of the UST and the cleanup of the site.

through routine right-of-way acquisitions for highway widening projects, new alignments and realignments, etc. Since service stations are often located close to existing roadways, the Department is almost certain to acquire the corresponding USTs during project development.

Many of the USTs acquired in the manner have been dormant since the 1920s. Some have simply been abandoned by previous owners, leaving new owners unaware of the tank's contents. In other cases, the USTs may have leaked and caused widespread contamination to both the surrounding soil and the underlying groundwater. Once DOTD assumes ownership of either a UST or the associated contaminated soil or groundwater, it is held to the environmental regulations that require the removal of the UST and cleanup of the site. This situation can create problems for the Department, particularly when it is trying to maintain a construction schedule to avoid delay penalties or facing expensive plan changes.

So what has the Department been doing in light of these challenges? First, the MatLab's Environmental Evaluation Unit (EEU) developed specifications for inclusion in the Special Provisions of pending construction contracts and the Department's Standard Specification for Roads and Bridges. In conjunction with other sections, the EEU also developed what is known as PPM 48. The EEU also implemented a statewide site investigation program, in which soil and groundwater samples are collected and tested prior to acquisition of a new right-of-way for each proposed project. DOTD has progressed over the years and completed many construction projects in compliance with the UST environmental regulations, resulting from staff training, development of new policies and procedures, a working relationship with the LDEQ, and higher levels of accountability for roadway contractors.



Despite these achievements, DOTD still spends a substantial amount of money on leaking USTs that are inoperable. With DOTD's new Project Delivery process, however, the Department is now addressing USTs earlier in the project development scheme. UST sites are now investigated as early as Stage 1 of project development. This does create a broader corridor for the EEU to investigate to help decide the best alternate for the project. While the EEU currently has three retainer contracts to address the assessment part of the LDEQ protocol, similar contracts are needed to address the corrective action and remediation of those sites determined to have levels of contamination above the regulatory limits. By identifying problem sites and addressing them early, the EEU can pass a clean alignment on to Construction, removing the threat of project delays and plan changes. If a UST is encountered during the construction phase, having a retainer contract in place would allow for a much quicker response to the environmental protocol. Ultimately, construction personnel will be able to focus on building highways rather than dealing with complicated environmental issues.

New Products Evaluation Committee

The New Product Evaluation Committee exists to provide for the structured review, evaluation, and implementation of new products and procedures submitted to the Department. See EDSM V.4.1.1.

Under our recently revised our system, we first send out a Needs Assessment to targeted groups to help us, in a quantified way, prioritize our efforts in evaluating new products. If we determine that we have a need for the product, we assign an evaluator. We now have better Evaluator instructions with a sample evaluation to provide more guidance.

The evaluator will review product literature, determine how to evaluate, then perform the evaluation.

If the product “makes the grade,” the evaluator then implements the product. Implementation might include writing and proposing new specifications to allow the product’s use, or writing a letter of recommendation to the Design or Maintenance Sections to describe the product’s specialized use.

New Products Evaluation submittals and files are coordinated maintained by Theresa Taylor at the Materials Lab.

In 35 years the Matlab has handled 2,104 new products. Currently we have 50 active products for review.

We have streamlined the process, but still hope to provide plenty of new products for doing business in Louisiana in a more efficient, effective, safe or durable way.

MatLab Contact

Theresa Taylor

(225) 248-4165

TheresaTaylor@dotd.louisiana.gov

Cement Unit Spotlight (cont. from page 3)

nationally recognized standards have differences that may appear to be minor. However, field experts have varying opinions on how these differences should be resolved. Two of these differences that the Harmonization Task Group has worked to standardize are the specification requirements for Cement Fineness and the Tricalcium Silicate content. Once all differences are resolved, they are submitted to a national panel of experts for a vote of approval. If the efforts of the Harmonization Task Group are approved, this will provide an

internationally recognized standard specification for Portland cement.

The Cement Unit continually strives to provide quality services to our customers through training, acquiring new equipment—such as our new state-of-the-art environmental chamber—maintaining accreditations, and providing troubleshooting services for cementitious materials problems. The Cement Unit works to ensure the Department utilizes only quality materials in construction and maintenance of the Louisiana transportation network.

Profiler Certification

This year's profiler certification season ushered in the wind of change. We are constantly seeking ways to improve our Profiler Certification Program, as with all the programs at Materials and Testing, while meeting current challenges and preparing for future ones.

We relocated the test tracks, increased the length of the tracks, and employed new software. We also revisited DOTD TR 644, Method of Test for Profile Roughness of Traveled Surfaces Using Automated Profilers, and made revisions that are conducive to a more productive and practical test method without sacrificing quality. This year, we did not require test runs to be printed on location. Instead, we required the runs to be electronically downloaded for processing at the office. This was done so the program could move along at a smoother pace and make better use of our resources within the allotted time frame for profiler certification.

Twenty profilers are currently being used in Louisiana. Within the first two weeks of Profiler Certification 2006, we completed checking all but two of the profilers—a new one that has not been delivered and one that is being transferred to a new vehicle. As of this writing, we are waiting for some to be modified to comply with specifications.

Cooperative Testing Program *(See EDSM V.1.1.3)*

This proficiency sample program, administered by the Materials and Testing Section, was formally established to provide an ongoing intradepartmental evaluation of the quality and accuracy of material testing. This program involves all major DOTD testing facilities including the Materials and Testing Section, the Louisiana Transportation Research Center, and the nine DOTD District Laboratories.

This program consists of all laboratories performing tests on a number of homogeneous samples every six months. In April and October of each year, samples are prepared, shipped to the Materials and Testing Section for distribution to the various laboratories and tested by specified methods. The results of the tests are forwarded to the Materials and Testing Section for statistical analysis. Any individual deficiencies discovered by the analysis are reported to the participants. Each deficient laboratory responds to the Materials Engineer Administrator with satisfactory evidence that all deficiencies were either corrected or action has been taken to correct deficiencies in the near future.

Changes to Mustang

Mustang is the Excel spreadsheet the MatLab uses to perform asphalt test calculations. The following is a summary of some of the changes made to Mustang. The latest version of Mustang is being tested by DOTD Laboratory Engineers.

- Added calculations for rice gravity and % passing
- Added ability to have up to 4 mix uses per subplot
- Increased security to each spreadsheet
- Added % Pay spreadsheet
- Added Lottman – TSR spreadsheet

Qualified Products Lists Updates

The July 2007 revision of the qualified products list will include, but is not limited to, the addition of new sources indicated below:

- QPL 02** Aggregates – Draughn Sand & Gravel, Inc., Petal, MS
- QPL 04** Quality Gasket Materials for Pipe – Quality Culvert, Inc., Astatula, FL
- QPL 25** Asphalt Mix Release Agents – Chemstation, Port Allen, LA and ZEP Manufacturing, Atlanta, GA
- QPL 42** Silicone Joint Sealants – May National Associates, Lakewood, NJ
- QPL 47** Non-Shrink Grout – Sika Corporation, Marion, OH
- QPL 52** Adhesive Anchor for Deformed Tie Bars and Dowel Bars – Ambex Concrete Technologies, Inc., Laval, Quebec, Canada
- QPL 72** Erosion Control Products – Canadian Forest Products, Ltd., New Westminster, Canada
- QPL 73** Plastic Pipe for Underdrain Systems and Yard Drains – Contech Construction, Montgomery, AL

Product source code 5022, Fayette Power Plant of LaGrange, TX will be removed from the qualified products list per the supplier's request. For more information about the Qualified Products Lists, contact Cassandra Collins at (225) 248-4120 or CassandraCollins@dotd.louisiana.gov.



Contributing Writers

Luanna Cambas, Materials Engineer Administrator
Khiet Ngo, Engineer 5
Joubert Harris, Environmental Impact Manager
Beth Roberts, Engineer 6 DCL
Laura Chapman, Engineering Technician
Theresa Taylor, Engineering Technician



Editorial Staff

Sher Creel (LTRC), Executive Editor/Designer
Emily Wolfe (LTRC), Editor/Designer
Nick Champion (LTRC), Photographer

Quality Matters is a publication of the Materials and Testing Section of the Louisiana Department of Transportation and Development. For additional information on material included in this newsletter, contact the editor at (225) 767-9145, Louisiana Transportation Research Center, 4101 Gourrier Ave., Baton Rouge, LA 70808-4443.