DISCOVER DEQ
LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY NEWSLETTER

January 2015 Issue Number: 36

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Technology helps improve water quality

Divide and conquer: that's essentially the philosophy of a watersheds restoration program that targets waterways with poor water quality. Andy Venuto is an Environmental Scientist 3 in DEQ's Nonpoint Source Program (NPS). That program targets the type of water pollution that is not generated from a discrete conveyance, such as a discharge pipe, but is generated during rainfall events. Section 319 of the Clean Water Act required that the states develop a NPS Management Plan. The plan details activities designed to reduce and control nonpoint sources of pollution from the various types of land-uses that contribute to water quality problems across the United States.

The idea, Venuto said, is to divide Louisiana's watersheds into smaller, more specific units and pinpoint any pollution sources within that unit. "We're making a real solid attempt to delist watersheds from the impaired watershed list, meaning we clean them up. The majority of impaired watersheds in Louisiana are impaired from nonpoint sources."

To achieve that goal, the agency has to determine where the pollution originates. So there is a strong push to define smaller watersheds. That's easier to do in an area like the Rocky Mountains. There if a drop of water falls in one place it winds up in the Pacific Ocean but if it falls a short distance away it winds up in the Gulf of Mexico. Louisiana has no continental divide, but it's still possible to figure out where the water in a bayou originates.

"A watershed has tributaries that drain into the main stem. You can delineate a drainage basin or a watershed around an outlet. That's basically what the subsegments are. Everything in that subsegment is supposed to drain past the ambient monitoring site (located at the end of the main stem of the watershed.) This is supposed to give you an assessment of the water quality in that particular subsegment (sedimentation, fecal coliform, dissolved oxygen, etc.)," Venuto said.

Using cartography and data from a variety of sources, including satellites, Venuto, who has extensive experience in geographic information systems, and others at DEQ determine where the tributaries join every river, bayou and creek in a watershed With the assistance of DEQ's Surveys Group sampling sites are selected to provide coverage over the whole subsegment.

"We take the subsegments and we delineate them even smaller so that we've got small little catchments. Each catchment's outlet originates from a sampling location. DEQ Water Surveys team pulls a sample. We acquire a whole year of data at these sample sites and focus on the ones that have the highest number of hits (for various water quality issues). We call that the rapid water quality assessment. So it's a year of data that we have collected once or twice a month," Venuto said.

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As DEQ delineates watersheds around the state, signage is erected to mark each one's boundaries.

"The idea is to try to target where the problem is located. We either do that through sampling or if we don't have sampling data then we run a Surface Water Assessment Tool (SWAT). It's been around for a long time. What that model can give you is it looks at elevation data in terms of digital elevation model. We use a Light Detection and Ranging (LIDAR) remote sensing method which measures elevation by illuminating a target with a laser and analyzing the reflected light) data which gives you five meter horizontal postings and sub-foot vertical (precision). So you get pretty accurate elevation data, which you need in Louisiana because we're pretty flat, we don't have much of it (elevation). Another factor is soil type. Different soils all have different characteristics. Some are more water permeable than others. Some transport away easier than others," Venuto said. "In addition, you've got land-use data. Every year the USDA puts out a set of land-use data called the CropScape Data Layer, and we use that. It will tell you about that particular growing season – if it was corn, hay, pasture. Was it double cropped? Did you have soybeans and then winter wheat? You've got that information."

All of data is input into an analytical program. "The elevation, soil type and land-use layers are put into the SWAT model and the output will result in an estimated sediment yield based on 'hyrologic drainage units." Venuto said. "For example, it may say a specific area contributes a lot of sediment. Then we know, we need to target some resources in that area."

"We can give that data to the Louisiana Department of Agriculture and Forestry (LDAF) who, in turn, uses the data to sign up the farmers impacting the critical areas," Venuto said. "LDAF then recommends conservation practice tailored to the particular problem. For example, if it's fecal coliform contributed by cattle, the solution may be as simple as fencing a stream off from the cattle and providing a new watering place. If it's sediment from erosion, then moving the edge of the field further back from the stream bank can be a simple practice."

Gwen Berthelot, environmental scientist manager, oversees the program. "We're excited about the potential of this approach. This technology gives us another tool to achieve our mission of rehabilitating water quality in impaired Louisiana streams."

"The people of Louisiana deserve to have clean waterways where they can fish, swim and just go to enjoy the beautiful scenery," Deputy Secretary Alex Appeaning said. The program is one of many water quality projects Appeaning administers at DEQ. "This program is designed to identify specific areas where those activities may be in jeopardy and to provide remedies targeted to specific threats to water quality," Appeaning said. "We have great support from Secretary Peggy Hatch to pursue these types of advances, and our staff is both expert and enthusiastic. We are very proud of this work."

For more information on nonpoint source pollution go to www.nonpoint.deq.louisiana.gov.

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Chance McNeely named assistant secretary for Office of Environmental Compliance

On Jan. 12, DEQ Secretary Peggy Hatch named Chance McNeely assistant secretary for environmental compliance, a recently vacated unclassified position. McNeely was previously a policy advisor in the Office of the Governor where he served as a liaison to DEQ.

Chance McNeely

"I appreciate the opportunity to serve the people of Louisiana in this new capacity. Working with stakeholders and DEQ staff to advance the agency's efforts to protect Louisiana's environment and the well-being of its citizens will be my top priority," McNeely said.

A native of Stonewall in Desoto Parish, McNeely graduated from LSU with a bachelor's degree in agricultural business. Before joining the Jindal administration, McNeely served as legislative staff member in the U.S. House of Representatives with a focus on energy and environmental issues.

"Chance McNeely brings a fresh dynamic to the job," Hatch said. "His background in government and policy give him a unique perspective on the process of environmental regulation."

Central Louisiana's waterways undergo monthly water quality testing

Throughout the fall, environmental scientists based out of DEQ's Kisatchie Regional Office substation in Pineville took water quality samples from various waterways in central Louisiana. The surveys are a routine part of each regional office's ongoing duties year-round relating to conducting water surveys in waterways that fall under each office's jurisdiction.

The primary goal of DEQ's water survey teams across the six regional offices and two regional office substations is to preserve the water quality of Louisiana's water bodies and ensure that all of them are meeting water quality standards that support their designated uses such as fish and wildlife propagation, and/or recreational use relating to fishing, swimming and boating.

Chris Rajewski, DEQ Environmental Scientist, is part of a team of four water quality specialists out of the Kisatchie substation who are assigned a list of waterways and tasked with extracting water samples from those on a monthly basis, year-round. The Tensas River, Red River and Ouachita River are water bodies that are targeted for monthly sampling by the Kisatchie office. whether those waterways are impaired or not. Other smaller streams, bayous and tributaries are sampled on a cycle, and some will be added or removed from the rotation based on prior test results, particular climate changes and other environmental factors.

One of the more scenic, yet fairly inconspicuous sampling sites, is the Ben Routh Recreational Area in northwestern Avoyelles Parish. Located off of La. 1196 approximately 10 miles north of Marksville, the area is predominantly a boating and fishing site that sits along the Red River. At Ben Routh, as well as other sites, water samples are generally taken from a boat launch, bridge or small overpass, while other samples may require sampling from a deployed boat in order to extract a reading closer to the center of the water body. In addition to the Red River site, Rajewski's water sampling sites vary, but commonly include Lake Concordia and Lake St. John in Concordia Parish.

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Environmental Scientist Chris Rajewski begins by bringing the water sampling canister and sampling bottles to the testing site

After the water sampling canister is filled, the sample is poured into various containers for subsequent testing in a lab

A new list of waterways requiring testing is published every October. Environmental scientists from each DEQ regional office and substation throughout the state schedules testing for those waterways under their jurisdiction and require a sample. When a water body makes the list, the reason for its inclusion may be to gather more data on a specific or general water quality issue or simply as a random test.

The testing begins with the environmental scientist inserting an MS-5 Hydrolab monitor into the water. It immediately gathers data that will produce a profile of the waterway. A specialized instrument, the Hydrolab is a meter equipped with five sensors that read water temperature, conductivity, salinity, pH, dissolved oxygen and dissolved oxygen percentage.

"The monitor analyzes the water sample based on those parameters, and the technician will annotate other factors such as weather and physical water conditions on the testing form," said Rajewski. "The data noted on the form will be reviewed against the sample to determine the environmental health conditions of that particular water body."

Next, a weighted cylinder is dropped into the water, where it is filled to capacity. The collected water from the cylinder is then poured into four plastic containers and labeled for subsequent lab testing. Each bottle's sample will be used to test for specific constituents. For example, the first bottle's sample will test for any presence of alkaline, chloride, total dissolved solids, total suspended solids and turbidity in the water. A second bottle tests for magnesium, potassium, sodium, calcium, iron, silicon and manganese. The third bottle tests for ammonia, phosphates, nitrates and nitrites. Finally, a fourth, smaller sampling bottle is used to test for any presence of fecal coliform in the water.

Conditions are noted on a survey form and the samples are placed on ice to preserve their integrity on the way to the lab.

The bottle containing the sample that specifically tests for fecal matter must be submitted to the lab within six hours of extraction in order to preserve the sample's accuracy and integrity. Failure to submit the fecal sample to the lab within the allocated time will negate it, thereby requiring a re-sample.

The technician moves onto the next water body on the schedule, noting that the timeliness of gathering and submitting the samples is crucial.

If results come back from the lab noting areas of concern or other issues with the water body, that location will be flagged and long-term readings will be required. At that point, the team will install an MS-5 Hydrolab monitor in the waterway which will be affixed to a post or stationary mount (typically placed out of public access to reduce theft or disturbance to the device) in order to

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get a more long-term reading. Readings will be taken every 15 minutes and fed into a computer where the data can be analyzed to determine whether or not measures need to be taken to address any areas of concern for that particular water body.

In some instances, the posting of a water advisory at a site may be necessary in order to reduce pollution or address a particular issue that may affect public health and safety. Working in conjunction with DEQ's nonpoint source group, Inspections Division and Enforcement Division, the overall goal of DEQ's water survey teams is to ensure that all of Louisiana's waters maintain their designated use and are free of harmful pollutants.

DEQ hosts Public Relations and Risk Communications class

As an agency that deals with environmental events and emergencies on a regular basis, DEQ prides itself on disseminating the correct information to the public in a timely manner. Since communications is an important part of DEQ's mission, continuing education in this area serves to enhance the agency's effort in informing the public and the media about how they may be affected by significant ongoing issues.

On Jan. 14, as part of that continuing education, the Central States Air Resource Agencies (CenSARA) hosted a Public Relations and Risk Communication class at DEQ headquarters in Baton Rouge.

Dr. Mac McCrory, CEO of the Oklahoma-based Development by Design, Inc., presented the class through a partnership with CenSARA.

DEQ environmental scientists, engineers and communications representatives participated in the class. While most of the attendees do not frequently deal directly with the media, many do deal with the public during environmental monitoring situations where stakeholders and concerned citizens may approach them to request a status update or information. Taking that into account, the instruction centered on a variety of public speaking approaches, such as how to strengthen skills as an agency spokesperson. Some topics were crisis or high-risk situations, the importance of showing empathy and concern, and how to convey a well-informed, fact-based message to the media and/or public in a confident manner.

Instructor Mac McCrory, PhD., left, gives a presentation on public relations and high risk communications.

The main area of focus throughout the class was how to communicate effectively in high-concern, low-trust, sensitive or controversial situations through a science-based approach – also known as "risk communications."

McCrory focused his instruction on introducing concepts and theories of risk communications, decision-making skills and how to effectively communicate a message to the media and public. To emphasize that point, attendees were divided into teams with each team addressing a hypothetical topic of a controversial or sensitive nature. Applying the methods discussed in the class, the role-playing exercises focused on how to convey a succinct, informative message to the media that gets the point across in the clearest way possible while avoiding conflict.

A final role-playing activity centered on negotiation and dispute resolution where pairs of students were given a topic to be addressed and resolved through the principles of effective communication. To that end, the exercise was an example of the

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advantages of encouraging face-to-face communication as opposed to texting or emailing in order to achieve a clearer message.

One important lesson in the class was how to put together a proper format and delivery of your message. McCrory stressed the significance of understanding the theoretical components of risk communications, mastering the message and effectively communicating competence as a reflection of both yourself and the agency. In media situations where someone is tasked to be a spokesperson to explain how the agency is handing the crisis or event, McCrory outlined the importance of repeating a positive message.

One attendee, Scott Templet, an engineer supervisor in DEQ's Small Business/Community Assistance Program, found the class to be very informative and advantageous. "Everyone can benefit from public relations training, as the communications skills and exercises provided in the CenSARA class can be applied to both professional situations as well as personal or family situations at home."

Jean Kelly, DEQ Public Information Officer, also took away some valuable techniques from the class. "The Public Relations and Risk Communications class was extremely beneficial because it presented a framework for both technical employees and communications people to report information. It stressed presenting a relevant, understandable message to the public."

CenSARA is an Oklahoma-based organization that promotes the exchange of air quality information, experience and data among participating organizations and interested parties. CenSARA emphasizes the importance of communication and cooperation among federal, state and local agencies through training and technical projects. Their reach covers the states of Texas, Louisiana, Oklahoma, Kansas, Nebraska, Iowa, Missouri and Arkansas.

Litter Court in St. Tammany Parish to combats litter

"There is no upside to litter," said Rick Moore, administrator of the St Tammany Parish Litter Court. "Litter is costly, unsightly, hazardous, and malodorous and poses a threat to the waterways and wildlife."

St. Tammany Parish is taking the litter problem head-on with their Litter Court. The court is part of the St Tammany Parish Department of Environmental Services. In 2013 the court investigated 252 cases, prosecuted 164 cases and collected $ 17,975.00 in fines. In 2014 the court investigated 183 cases, prosecuted 93 cases and collected $10,475.00 in fines. During the year 2012, 109,200 tons of trash, debris and garbage was collected at transfer stations; 11,603 bags of litter were collected and 304 miles of road were cleaned by litter abatement.

Rick Moore, administrator of the Litter Court and Constable, and Connie Moore, Justice of the Peace, talk to an elementary school class about litter.

The Litter Abatement Program in St. Tammany continues to evolve. The court is overseen by three Justices of the Peace (JP) and five constables work the parish. The enforcement component of the program is a litter ordinance taken from the state litter law. It imposes strict civil and criminal penalties for littering. The Litter Court convenes monthly and offenders are required to appear. The process is clear. To report littering, a citizen can contact the sheriff's office, a JP, or a constable. If the littering occurs from a vehicle, a citizen should write down the license tag description of the vehicle,

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time and date. Roadside trash should be reported to the environmental services department or code enforcement. Litter can be anything including signs. When a litter offense is reported, an officer investigates and issues a ticket. The fines range from $50 to $500 and the offender has to appear in court where he/she can be fined and sentenced to eight hours community service, which includes being part of the litter abatement crew picking up roadside trash.

“Being part of the litter abatement crew allows them to be part of the solution to the problem they helped create,” Moore said.

St. Tammany Parish keeps a database of repeat offenders that currently has approximately 2,000 entries.

There are simple steps that allow citizens to participate in the fight against litter:

- Report any person you see trashing the parish
- Know the law. Learn what constitutes litter. It is more than candy wrappers thrown from car windows.
- Show up as a witness in litter court
- Teach your children to respect their community and avoid littering at a young age
- Participate or organize in a clean-up day
- Educate children and others about litter abatement
- Keep a litter bag in your car
- Set an example by not littering

“Education, abatement and enforcement is what St. Tammany is trying to do,” Moore said. “We aggressively attack litter in our parish.”

The litter abatement program has taken its message to the schools to educate students not to litter but to recycle and reuse. St. Tammany Parish and the Litter Court have been participating in the Louisiana Aquatic Litter Alliance (LALA), part of the Louisiana Trash Free Waters Program. The group is meeting in February to continue its work. To access more information about the national EPA sponsored Trash Free Waters Program, go to http://water.epa.gov/type/oceb/marinedebris/.

Online form encourages the public to submit environmental ideas to DEQ

Do you have a great idea that may help to improve our Sportsman’s Paradise? Is there something you feel would better assist DEQ in its mission to protect human health and the environment? If so, we’d like to hear about it.

Anyone with an environmentally-conscious idea is encouraged to submit the idea or suggestion to DEQ through the online form available on DEQ’s website. Simply fill out the submission form online and click the “submit request” button. The submission form is only intended to provide DEQ with a brief summary of the idea. If the contribution is something that can be implemented, the submitter may be requested to provide additional information.

“DEQ welcomes any ideas or suggestions from anyone concerning ways in which we can improve the environment,” said Tegan Treadaway, Assistant Secretary for DEQ’s Office of Environmental Services.

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The online form is accessible through DEQ’s website under the Online Services link.

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"Ideas from the public are taken seriously and are very important for getting outside perspectives on how the department may improve processes or focus resources on a given environmentally related issue," said Greg Langley, DEQ Press Secretary.

Anyone interested in presenting an environmental suggestion to DEQ may do so by filling out a form in the following link: http://www.deq.louisiana.gov/portal/ONLINESERVICES/SubmitEnvironmentalIdeas.aspx.

The submission form is a convenient way in which the public can submit an idea, and ideas may also be submitted over the phone by calling toll free: 1-866-896-5337.

Arbor Day at Burden

What could be more fun for a kid than meeting Smokey Bear? Well, how about planting and registering your own tree? Or, taking a hayride? Or going on a Scavenger Hunt? Or climbing very high into a tall tree?

Arbor Day at the LSU AgCenter Botanic Gardens, the Burden Center, was a sunny day that offered kids and families all of these things and more. On Sat. Jan 17, 465 people participated in the fun-filled day. Smokey the Bear greeted everyone in front of the Orangerie. Inside, scavenger hunt directions were given out, crafts were taught and there was story time for the early birds.

Smokey the Bear meets and greets families and children as they enter the Orangerie at Arbor Day.

From the Orangerie, there was a hike through the wood to the tree planting area. There, participants picked out a tree and planted it in the Burden woods. There were holes dug and marked with streamers to match the type of tree to be planted and a number. When the tree was planted, the planter took the numbered streamer to the registration desk where the tree and the participant were registered. Each participant received a GPS coordinate so the family can follow the tree's growth. At the Barton Arboretum, children got to climb a tree – with help. They were harnessed, had a hard hat and safety glasses. Then they climbed or were hoisted up the tree. When participants were through, back at the Orangerie, they received a sapling to plant at home, a tree care book and information about their tree.

"The importance of Arbor Day is to help spread awareness about the importance of trees to the environment, our ever day lives and economy," said Dr. Jeff Kuehny, Director and Professor of Horticulture at the LSU AgCenter Botanic Gardens. "Arbor Day is also about educating the general public on the types of trees that are best for planting in their region, how to plant them and maintain them."

The Burden Center, off Essen Lane, is one of Baton Rouge's hidden treasures. It is 440 acres in the heart of Baton Rouge that include the LSU Rural Life Museum, the LSU AgCenter Botanic Gardens and Windrush Gardens. Burden offers discovery and adventure through historic, natural and educational experiences that provide a window into Louisiana's rich, cultural past. It began in the late 1800s as Windrush Plantation, a wedding gift to John Charles Burden and Emma Gertrude Barbee and the home and property were passed down through the generations. Through the desire to preserve Windrush and to provide people a place to experience the beauty of the natural world, the property was donated by the Burden Family to the LSU system.

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Volunteers help harnessed children climb a tree at the Barton Arboretum during Arbor Day at the Burden Center.

Arbor Day and Burden is just one of many activities available at the site including summer camp, the corn maze, harvest days and a Rural Life Christmas at the Rural Life Museum and much more.

You can discover more and see what events are scheduled at www.discoverburden.com.

"Rocking with Heart" theme of American Heart Association Drive

"Rocking With Heart" is the theme of this year's American Heart Association Drive. Marissa Jimenez is 10th floor co-captain of the 2015 effort at DEQ.

"It's always fun and it helps a lot of people. It's for a good cause, so I always enjoy being a co-captain for the heart walk. We get to do the bake sale so it's always fun -- and delicious. I hope everybody will try to donate to help a good cause," Jimenez said.

The DEQ effort formally kicked off with free king cake in the Pensacola Room on Jan. 20, and continues with the bake sale on Thursday, Feb. 12, culminating with the raffle drawing for goody baskets donated by executive staff members on Friday, March 20 (chances are $1 each). The agency push is part of the Capital Area Heart Walk which sponsors a 5K walk at the LSU Old Front Nine Course at the corner of Nicholson Drive and Nicholson Extension on the LSU campus starting at 9 a.m. Saturday, March 21.

DEQ employees have plenty of chances to help with the drive before that date. For a $15 donation, employees can get a Red Heart Sticker that allows them to come to work in casual dress every Wednesday and Thursday from Jan. 21 until March 9. A $2 donation will allow employees to participate in the "Wear Red Free Dress Day," on Monday, Feb. 16. For $1, employees can put their name or the name of someone they know who is affected by heart disease on a red paper heart. The paper hearts will be displayed in the windows of each floor's lobby in the Galvez Building.

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Who's Who At DEQ?

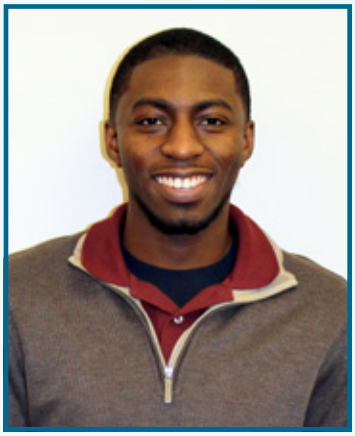
Nicole Hall – Office of Environmental Services – Geologist

Hall joined DEQ on Jan. 5. She is a geologist in the Waste Permits Division. Hall is a 2012 graduate of LSU with a degree in geology. She is a native of Belle Chasse and is married. Hall previously worked at EMSL Analytical.

Hans Karl Nsoesie – Office of Environmental Services – Environmental Chemical Specialist

Nsoesie, originally from Cameroon, West Africa, moved to the United States about six years ago, primarily to further his education. He received a Bachelor of Science degree in Chemical Engineering from the University of Louisiana at Lafayette (ULL). Nisoesie started out as a biology major at New Mexico Highlands University (NMHU). He worked at both universities as a student research assistant.

Nsoesie joined DEQ as an environmental chemical specialist working with, among other things, preparing Total Maximum Daily Load (TMDL) reports. This involves developing water quality models -- a series of mathematical equations that represent chemical reactions, biological reactions and physical transport actions that pollutants undergo in the receiving water body and projecting how much waste reductions need to be done in order to preserve our diverse aquatic species, and environment as a whole.



Karen Latuso - Office of Environmental Services - Water Permits Division,

Latuso, a native of Middleburg, Fla., graduated from LSU with a Master of Science degree in renewable natural resources. She joined DEQ in July 2014 as an environmental scientist in the Water Permits Division. Before starting work at DEQ, Latuso spent 12 years as a professional Photojournalist before she decided to change careers.

"I've met a lot of great people at DEQ so far," said Latuso. "Everyone is very warm and welcoming."

Latuso resides in Baton Rouge with her husband of one year, Steven Latuso and their two cats.

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Louisiana Department Of Environmental Quality's Fourth Quarter Summaries

4th Quarter 2014 Enforcement Actions:
http://www.deq.louisiana.gov/portal/DIVISIONS/Enforcement/EnforcementActions.aspx

4th Quarter 2014 Settlement Agreements:
http://www.deq.louisiana.gov/portal/DIVISIONS/Enforcement/SettlementAgreements.aspx

4th Quarter 2014 Air Permits:
http://www.deq.louisiana.gov/portal/tabid/2922/Default.aspx

4th Quarter 2014 Water Permits:
http://www.deq.louisiana.gov/portal/tabid/2899/Default.aspx

4th Quarter 2014 Solid and Hazardous Waste Permits:
http://www.deq.louisiana.gov/portal/divisions/wastepermits.aspx