

REPORT ON THE AVAILABILITY AND DEMAND FOR QUALIFIED WATER WELL DRILLERS, DEMAND FOR SHALLOW AGRICULTURAL WELLS, AND RULES AND REGULATIONS REGARDING THE LICENSING OF WATER WELL DRILLERS IN LOUISIANA

> As Requested by: House Concurrent Resolution No. 150 of 2013

DECEMBER 18, 2013



BOBBY JINDAL GOVERNOR

State of Louisiana department of natural resources OFFICE OF CONSERVATION

STEPHEN CHUSTZ SECRETARY

JAMES H. WELSH COMMISSIONER OF CONSERVATION

December 18, 2013

Chairmen and Members, House of Representatives Natural Resources and Environment Committee and Senate Natural Resources Committee

> Re: Office of Conservation Report for House Concurrent Resolution No. 150

Dear Chairmen Dove and Long, and Committee Members,

Following consultation with the Louisiana Water Resources Commission, I am pleased to present this report to you in fulfillment of House Concurrent Resolution No. 150, which directed that my agency report on the availability and demand for water well drillers in the state, along with the potential economic impact of water well drilling licensure requirements on well installation costs, and propose recommendations to address concerns with well driller availability and changes, if any, to the state's well driller licensure requirements.

Let me direct your attention first to the Executive Summary, which outlines the agency's research process, findings, and proposed recommendations. The sections following provide much more detailed analysis of specific questions and issues, while the appendices serve as a useful reference to the whole body of work.

The complete report with appendices is available on-line at the Office of Conservation's Ground Water Resources Program webpage: <u>www.dnr.louisiana.gov/groundwater</u>.

Thank you for your continued interest in the activities of the Office of Conservation.

With kind regards, I am

Very truly yours,

James H. Welsh Commissioner of Conservation

JHW:GWS:jmr

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| EXECUTIVE SUMMARY | 3 |
|--|----|
| 1 – AVAILABILITY OF WATER WELL DRILLERS | 8 |
| 2 – RECENT DEMAND FOR WATER WELL CONSTRUCTION | 15 |
| 3 – WATER WELL CONSTRUCTION AND MAINTENANCE COSTS | 20 |
| 4 – CURRENT LICENSING REGULATIONS AND REQUIREMENTS FOR WATER WELL DRILLERS | 24 |
| 5 – VIEWS ON EXPANDING WATER WELL DRILLER NUMBERS | 26 |
| CONCLUSION | 29 |
| APPENDIX A – HOUSE CONCURRENT RESOLUTION NO. 150 OF 2013 | 30 |
| APPENDIX B – OFFICE OF CONSERVATION SURVEY OF LICENSED WATER WELL DRILLERS | 32 |
| APPENDIX C – CHARACTERISTICS OF SURVEY SAMPLE | 39 |
| APPENDIX D – REGIONAL COMPARISON OF WATER WELL DRILLER LICENSURE REQUIREMENTS | 45 |
| APPENDIX E – ROLE OF THE ADVISORY COMMITTEE FOR THE REGULATION AND CONTROL OF WATER WELL DRILLERS | 50 |

EXECUTIVE SUMMARY

At the direction of the Louisiana Legislature as expressed in House Concurrent Resolution No. 150 of 2013 (HCR 150, see Appendix A), the Louisiana Office of Conservation conducted research into several questions relative to the availability of, and demand for, water well drillers in the state, and the potential economic impact of water well drilling licensure requirements on well installation costs. This research included a detailed survey of licensed water well drillers (see Appendices B and C), a review of Office of Conservation water well registration and water well driller licensure data, an evaluation of water well driller licensure regulations from neighboring states (see Appendix D), and an analysis of available data from the U.S. Department of Agriculture on irrigation costs for farmers in Louisiana.

Specifically, the agency investigated the assertions in HCR 150 that:

- 1. "The decline in the number of licensed water well drillers has outpaced new drillers,"
- 2. "The demand for water wells, especially for shallow wells less than two hundred feet for agricultural use, has increased," and
- 3. "The decrease in the availability of licensed water well drillers and its potential impact on the rates charged have led land owners to seek options to install water wells themselves on their own land for agricultural use."

Staff also examined several key topics of study as specified by HCR 150. Specifically, these were:

- 4. "The availability and demand for qualified water well drillers,"
- 5. "The demand for shallow water wells less than two hundred feet for agricultural use," and
- 6. "The rules and regulations regarding the licensing of water well drillers."

Our findings are thus:

- "The decline in the number of licensed water well drillers has outpaced new drillers." The number of Louisiana licensed water well drillers actually has remained relatively static in recent years, decreasing only 4% from 2003-04 to 2012-13 (257 to 246 in total numbers) despite a marked contraction in demand for water wells. Water well drillers continue to be licensed in numbers that largely offset annual retirements.
- 2. "The demand for water wells, especially for shallow wells less than two hundred feet for agricultural use, has increased." The overall demand for water wells in Louisiana in fact has decreased dramatically in recent years, declining 56% between 2006 and 2012. Primarily, this drop reflects a near 200% fall off in demand for new domestic wells, from a recent peak of 2823 in

2006 to 955 in 2012. The demand for other types of wells, especially shallow agricultural-use wells, has remained relatively constant across the period 1992-2012, although several specific economic and/or environmental events have influenced temporary, short-term, above average demand during this time span.

3. "The decrease in the availability of licensed water well drillers and its potential impact on the rates charged have led land owners to seek options to install water wells themselves on their own land for agricultural use." The agency did not find any substantive evidence that demonstrates a connection between well installation rate increases and a decrease in the availability of licensed water well drillers. The number of licensed water well drillers has remained static over the past decade while overall demand for their services has decreased. In the Office of Conservation survey, Louisiana drillers stated that over the same 10-year period they have experienced rising prices for fuel, rig equipment, supplies, labor, and transportation. These costs likely have been passed onto customers or clients as higher rates charged for services. The USDA's Farm & Ranch Irrigation Survey (part of the U.S. Census of Agriculture) supports this finding, showing that between 1998 and 2008, per farm well construction and maintenance expenses in Louisiana increased an average of 49%. Yet the most recent data available also shows a 2% decline in these expenses between 2003 and 2008 (2013 numbers will be available in 2014 after the deadline for this report).

- 4. "The availability and demand for qualified water well drillers." The number of licensed water well drillers has remained relatively static in recent years, decreasing only 4% from 2003-04 to 2012-13, despite the overall demand for water wells being halved between 2006 and 2012.
- 5. "The demand for shallow water wells less than two hundred feet for agricultural use." The demand for shallow agricultural-use wells has remained relatively constant over the past two decades, although the extreme droughts in 1998-2000 and 2010-11, and the expansion in state corn production from 2006 to 2007, contributed to temporary, short-term, above average demand in those years before a subsequent reversion to the norm.
- 6. "The rules and regulations regarding the licensing of water well drillers." The current water well driller licensure regulations are within the regional norm and sufficient to meet the goals of the Office of Conservation's Ground Water Resources Program as mandated by revised statute.

To strengthen the Ground Water Resources Program and ease the flow of commerce, the Office of Conservation **recommends** that:

A. As part of its expanded reciprocity arrangement to allow for more hours in the field and reduce overall expenses, the agency continue to educate water well drillers regarding the acceptance of out-of-state continuing education credits for the state mandated continuing education requirement.

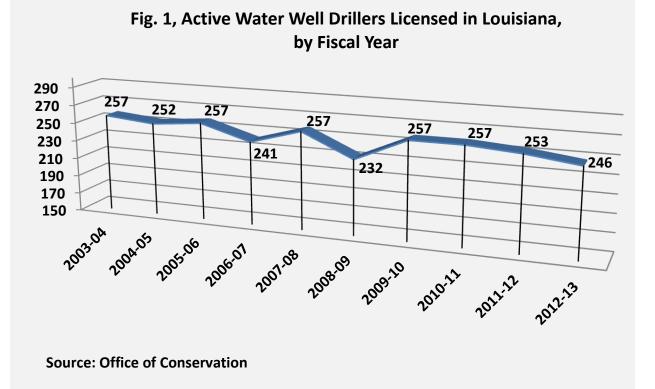
- B. To assist farmers in the timely installation of needed water wells and encourage a more complete understanding of the regulations governing the construction of irrigation wells in times of extreme climactic conditions, the agency continue its outreach and education efforts to well drillers and owners regarding the installation and notification requirements for drought relief wells.
- C. To assist land owners in need of water well drilling services, the agency encourage the Louisiana Ground Water Association, Louisiana Farm Bureau, LSU AgCenter, and other interested parties in the development of an effective "exchange" or "clearinghouse" that will match water well driller demand with supply.
- D. As part of an effort to ensure the long-term stability of the water well drilling industry in the state, the agency engage in discussions with the Advisory Committee for the Regulation and Control of Water Well Drillers, Louisiana Community and Technical College System, Louisiana Workforce Commission, Louisiana Ground Water Association, and other interested parties to research the feasibility of a training or apprenticeship program for young people interested in pursuing water well drilling as a vocation.

"We do not need more well drillers. We need more work."

 Source: Office of Conservation Survey of Licensed Water Well Drillers

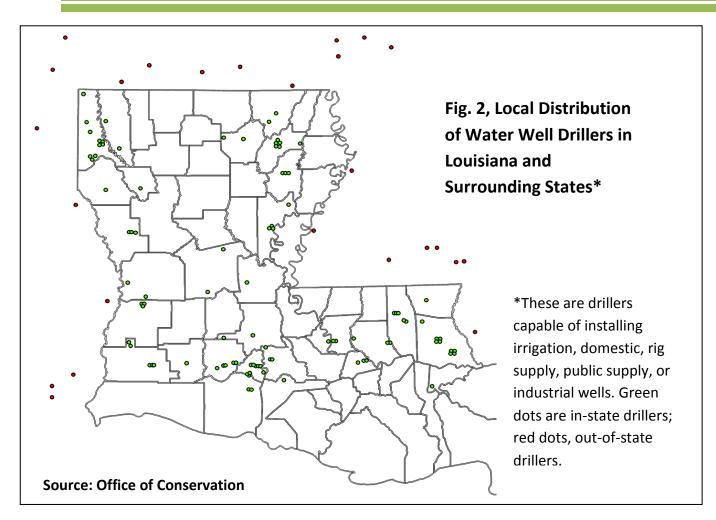
1 – AVAILABILITY OF WATER WELL DRILLERS

Despite an approximate 50% decline in demand for new water wells since 2006 (see Figs. 9 and 10), the number of active, licensed water well drillers in Louisiana has remained relatively static over the past decade, averaging about 251 license holders per year (see Fig. 1, below). Based on a comparison of these numbers, there appears to be at present an abundance of capable water well drillers in Louisiana.



"With so much competition between drillers in our area prices are too low; none of us can make a good profit because of this; if I raise my price, customers will not contract with me, etc.





As seen in Fig. 2 above, water well drillers tend to be grouped in clusters around the state that reflect different local needs (see Fig. 29, Appendix C). Caddo and Bossier Parishes in northwest Louisiana account for one cluster which meets a local demand for irrigation, rig supply, and domestic wells. Lafayette, Acadia, and other surrounding parishes in south/southwest Louisiana represent another cluster that services rice and crawfish farmers, as well as the local demand for domestic wells. The Florida parishes, particularly

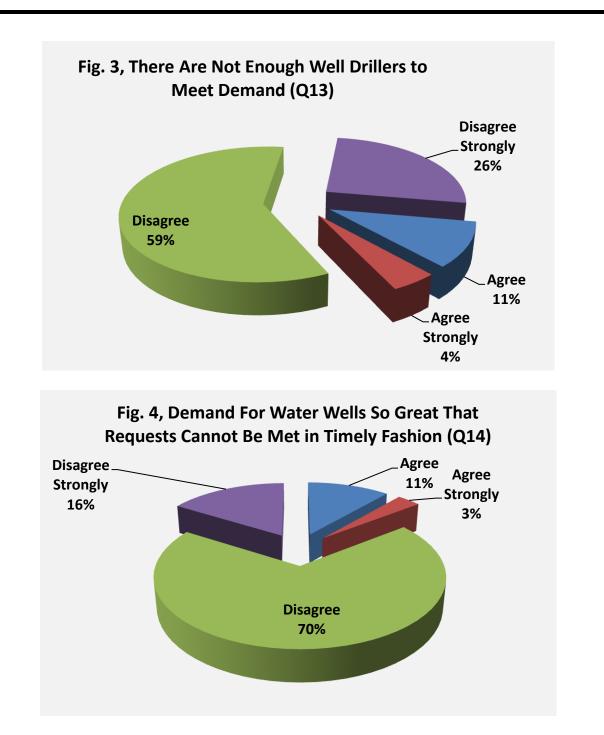
"I feel our prices are too low in this area due to a high number of drillers. Price cutting is a constant problem. I can't stay in business cutting prices. I don't know how others do it. I'm drilling much less wells these days because I cannot just give these wells away almost at cost."

Source: Office of Conservation Survey of Licensed Water Well Drillers

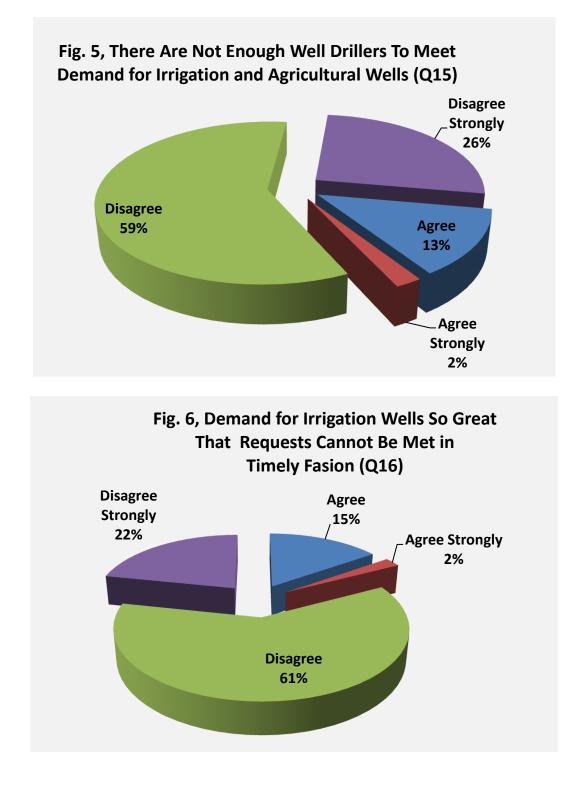
Tangipahoa and St. Tammany, make up another cluster which meets a mixed demand for irrigation and domestic wells in southeast Louisiana. Richland, Franklin, and other surrounding parishes in northeast Louisiana comprise a final cluster. These well drillers service the needs of local agriculture in the region.

In terms of actual availability, the data presented here and in Appendix C appears to indicate that there are an ample number of water well drillers to meet the state's needs. Representative sampling shows a strong distribution of well drillers by local need (see Figs. 27 and 29, Appendix C). North Louisiana, for instance, has a larger number of drillers available for rig supply, irrigation, and domestic well installation. South Louisiana has more well drillers available for domestic, public supply, and monitor well work.

This view of overall availability is reinforced by the findings from the Office of Conservation survey of licensed water well drillers. Among those who offered a response to the statement that, "There are not enough water well drillers in Louisiana to meet the current demand for water well construction and/or maintenance," 85% disagreed or disagreed strongly (see Fig. 3, next page). Only 15% agreed or agreed strongly. In response to the related statement that, "The demand for water wells in Louisiana is so great that requests for installation and/or maintenance cannot be met in a timely fashion (within 1 month)," 86% disagreed or disagreed strongly, while only 14% agreed or agreed strongly (see Fig. 4, next page).



Follow-up questions polled water well drillers' experience with regards to demand for irrigation and agricultural wells. In response to the statement that, "There are not enough well drillers in Louisiana to meet the current demand for shallow wells less than 200 feet for agricultural and irrigation purposes," 85% of drillers disagreed or disagreed strongly, while only 15% agreed or agreed strongly (see Fig. 5, next page). In response to the related statement that, "The demand in Louisiana for shallow water wells less than 200 feet to be used for agricultural and irrigation purposes is so great that requests for installation and/or maintenance cannot be met in a timely fashion (within 1 month)," 83% disagreed or disagreed strongly, while only 17% agreed or agreed strongly (see Fig. 6, below).



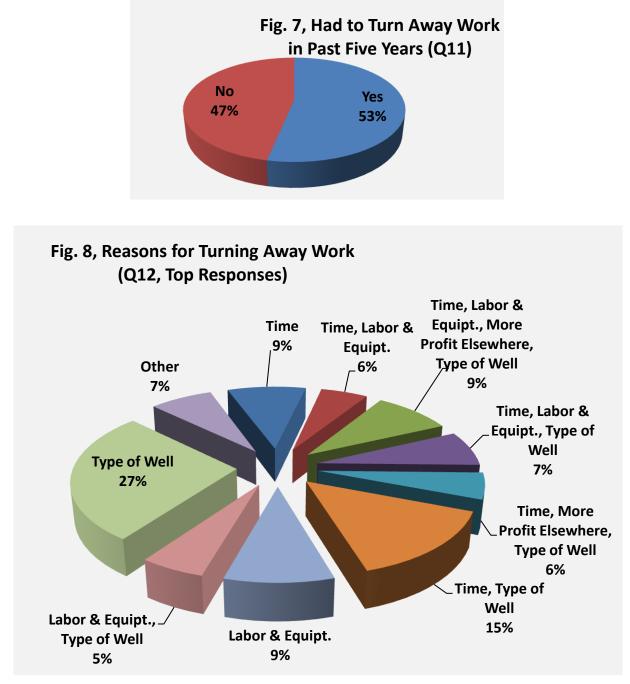
"Not all areas have enough work to support a well company."

"We have approximately 11 well drillers in northeast Louisiana. That's about a 50% increase in the last 4 to 5 years. The demand has been up the last couple of years but is now starting to decline."

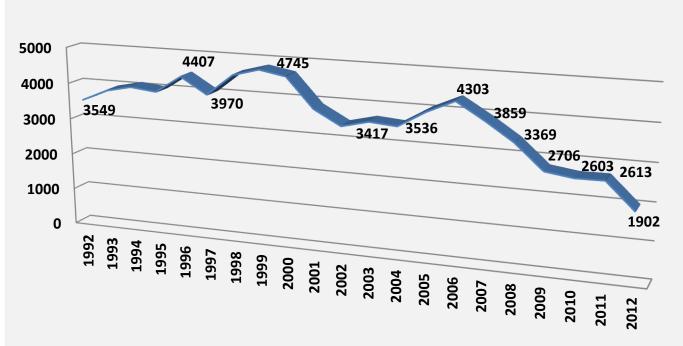
> Source: Office of Conservation Survey of Licensed Water Well Drillers

While the research shows that there has been no significant change in the overall availability of licensed water well drillers in Louisiana, thereby lessening driller access as a contributing factor in any recent well installation rate increases, the Office of Conservation nonetheless recognizes that there may be local market conditions or temporary, seasonal demands in the state that have the potential to impact well driller availability or otherwise increase costs to well owners. Still, such variations are normal for a free market environment; water well drillers tend to be located in areas that support their business and tend to do much of their work during a high-demand "busy" season. During extended periods of above average demand caused by specific economic or environmental factors ("boom" years such as with the Haynesville Shale, or during extreme droughts), there may be additional temporary, short-term shortages in available rigs and crew.

Type of license held and relevant work experience also appear to impact water well driller availability in some cases. Of the little more than half (53%) of drillers that reported having to turn away work in the past five years (see Fig. 7, next page), almost threequarters (74%) listed the type of well work requested as a determining factor in refusing a job. That is, they either did not have the necessary license to install the type of well requested (ex.: monitor well only driller asked to install an irrigation well) or, even if with the appropriate license, they did not specialize or have experience in drilling such wells (ex.: irrigation well driller asked to install an industrial well). More than a full quarter (27%) listed this as the sole determining factor (see Fig. 8, below). 52% indicated a lack of time as an issue in some instances, while a little more than a third (36%) cited a lack of qualified labor and/or necessary equipment. The data here points toward an opportunity for increased outreach and coordination within the existing free enterprise system to more effectively find a "best fit" for matching well owner demand with well driller supply.



2 – RECENT DEMAND FOR WATER WELL CONSTRUCTION IN LOUISIANA





Source: Office of Conservation

The overall demand for water wells in Louisiana has been on the decline the past halfdozen years (see Fig. 9, above). The year 2006 saw a recent peak of 4300 new wells installed and registered, followed by more than 3800 in 2007. These numbers were within the consistent range of the previous 14 years. Falling below the range were the fewer than 3400 wells registered in 2008. Then, beginning in 2009, there was an even more noticeable drop to 2700 registered wells, followed by about 2600 in 2010 and 2011 each. Only some 1900 new wells were registered in 2012. This latter figure represents a 56% drop over the number of wells registered in 2006, and a 52% drop from the 1992 to 2008 average of 3971 wells per year. The dramatic decrease in the total number of new registered wells between 2006 and 2012 primarily reflects the precipitous decline in the drilling of new domestic wells (see Fig. 10, below, and Fig. 11, next page). While the demand for other types of wells has remained fairly constant outside of a few above average years stimulated by specific economic or environmental factors, demand for domestic wells has dropped steeply due to the expansion of community water supply systems into rural areas formerly served by domestic wells only. The drilling of domestic wells reached a peak of over 3500 in 1999, but dropped to less than 1000 in 2012.

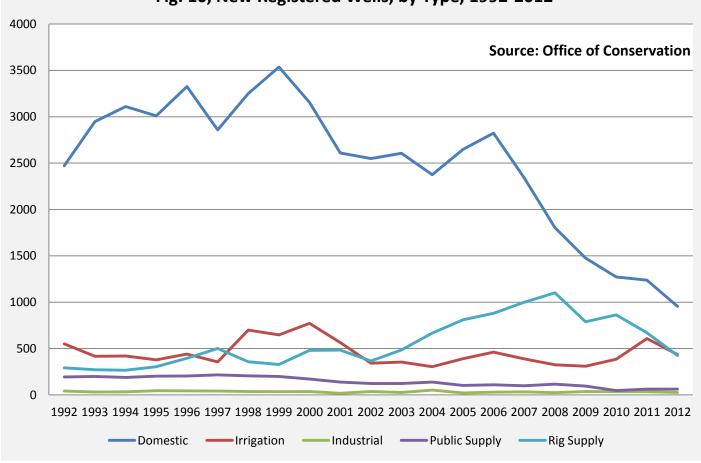


Fig. 10, New Registered Wells, by Type, 1992-2012

"In our area, I believe there are too many drillers for domestic wells. Also, an increase in large public supply community wells has caused a decrease in demand for domestic wells."

> Source: Office of Conservation Survey of Licensed Water Well Drillers

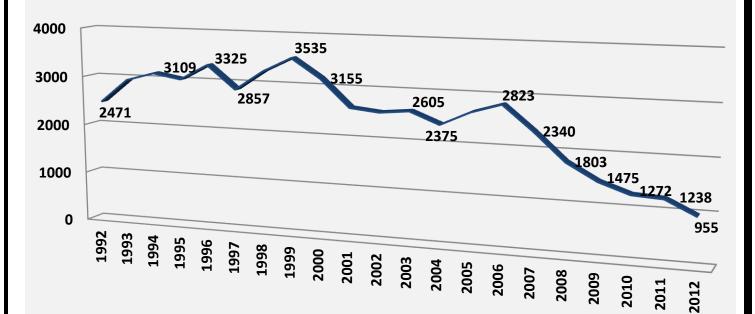


Fig. 11, New Domestic Wells Registered, 1992-2012

Source: Office of Conservation

While the demand for domestic wells has plummeted, that for other types of wells has remained steady, with a few notable exceptions. Demand for oil and gas rig supply wells was cyclically up-and-down from 1992 through 2003 (see Fig. 12, next page). In the early to mid-2000s, demand grew rapidly as energy exploration in Louisiana expanded. By 2005, the number of new registered rig supply wells was double that of 2002, and by 2008, triple the 2002 number. Of particular importance was the development in 2008 and after of the Haynesville Shale in northwest Louisiana. Rig supply wells reached a peak of just at 1100 wells in 2008 before sloughing off from 2009 through 2011 as the "boom" faded. In 2012, operators drilled only 424 rig supply wells, just 12% more than the 1992-2003 average (378), but a full 50% less than the 2004-2011 average.

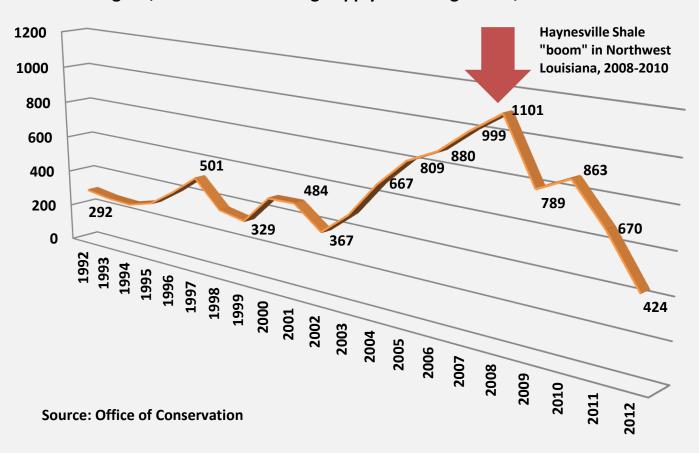
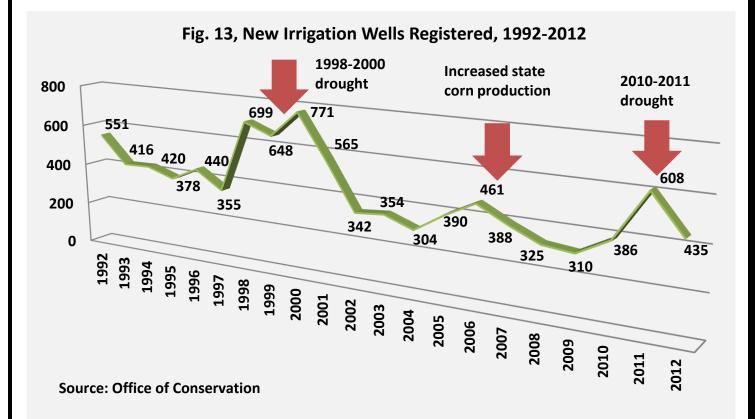


Fig. 12, New Oil and Gas Rig Supply Wells Registered, 1992-2012

Like the demand for oil and gas rig supply wells, that for irrigation or agricultural wells has undergone a similar up-and-down in response to certain economic and environmental factors (see Fig. 13, next page). Prolonged drought conditions have led to major spikes in demand twice since 1992, once in the period 1998-2000, and again in 2010-2011. During the first period, 1998-2000, new irrigation wells registered with the state averaged 706 a year, a 65% increase over the average (427) from the prior six years.

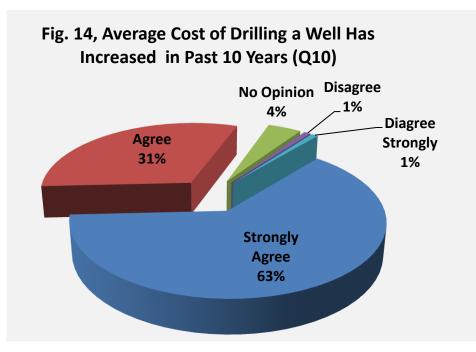
Following the abatement of that drought, new irrigation wells only averaged 383 a year between 2001 and 2010, and that includes the slight increase in 2006 associated with surging state corn production (from 290,000 harvested acres in 2006 to 730,000 in 2007, due to ethanol incentives).* During another sustained drought in 2011, farmers added a substantial number of irrigation wells (a 58% increase over the year before) but once conditions improved, demand for new wells decreased back to the norm.



*U.S. Dept. of Agriculture, National Agricultural Statistics Service, "Five Louisiana Crops Set Record Yields in 2007," press release, January 11, 2008.

3 – WATER WELL CONSTRUCTION AND MAINTENANCE COSTS

Louisiana well drillers overwhelmingly asserted in the Office of Conservation survey that the cost of drilling a well has increased in the past decade, during which time they also have experienced an overall decline in the demand for their services. 94% of survey respondents either agreed or agreed strongly with the statement that, "The average cost of drilling a well has increased in the past ten years" (see Fig. 14, below).



Further, when asked, survey respondents provided an itemized listing of supplies, materials, or services associated with water well construction or maintenance that have increased in price over this same 10-year span (see Fig. 15, next page). These represent the bottom-line "cost of doing business" for water well drillers in Louisiana. 100% cited fuel and transportation cost increases; 89% the price of rig equipment; 93% the cost of qualified labor; 94% supplies and materials; and 32% new regulatory requirements. Such increases likely have been passed onto clients and customers, including Louisiana farmers, as higher rates charged for services.

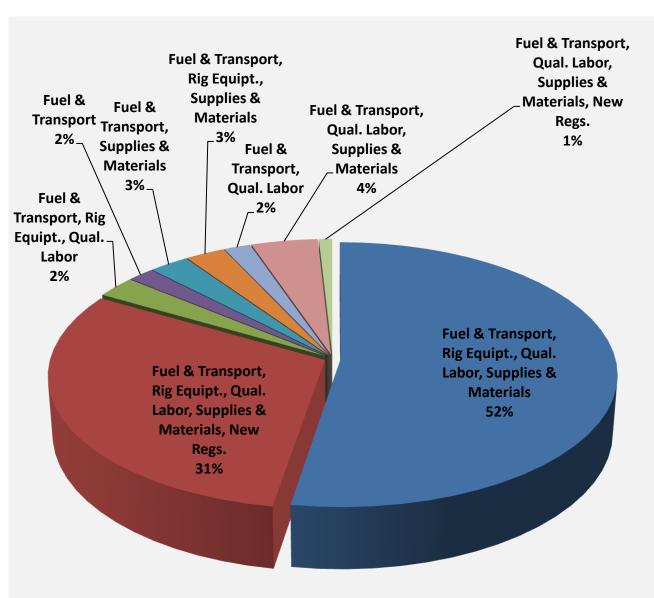
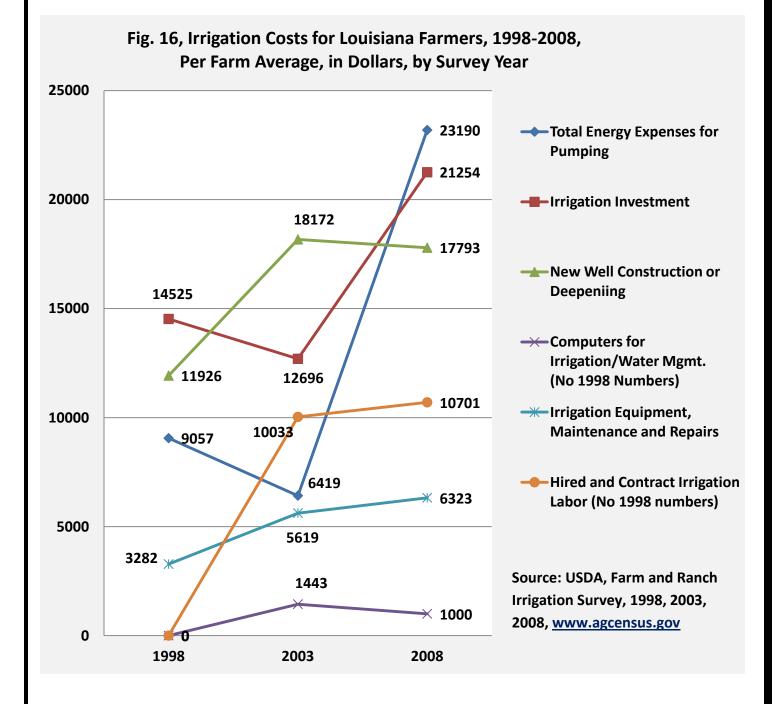


Fig. 15, Price Increases Experienced by Water Well Drillers (Q9)

The USDA's Farm & Ranch Irrigation Survey (part of the U.S. Census of Agriculture) supports this assertion as to the increased costs of water well drilling in Louisiana. The numbers show that between 1998 and 2008 per farm new well construction or well deepening expenses in the state increased an average of 49% (see Fig. 16, next page). Still, the 2008 data actually showed a 2% decline in these expenses over the 2003 average. Unfortunately, it is impossible to determine whether such a decline has continued since, as the 2013 survey will not be available until after the deadline for this report in 2014. Such expenses may have remained static, increased, or decreased. No figures existed in 1998 for hired or contract irrigation labor. These costs remained relatively static from 2003 to 2008 at over \$10,000 per farm reporting.

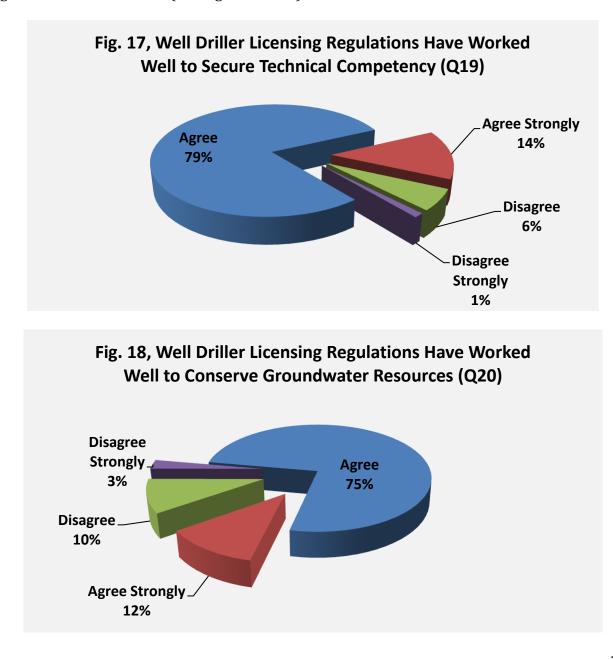


Similar to well construction expenses, overall per farm investment in irrigation operations, including construction, maintenance, repairs, equipment replacement, or other upgrades and expansions, increased by 46% during the same period, 1998 to 2008. However, energy expenses associated with pumping and irrigation operations accounted for the largest numerical and statistical increase during these years among farms reporting irrigation costs here in Louisiana. Although these costs declined between 1998 and 2003, they increased sharply by almost \$17,000, or more than 260%, between 2003 and 2008. This increase largely can be attributed to higher fuel costs. Between 2003 and 2008 gasoline prices increased on average 105%, while diesel prices increased 152% (U.S. Energy Information Administration, <u>www.eia.gov</u>).

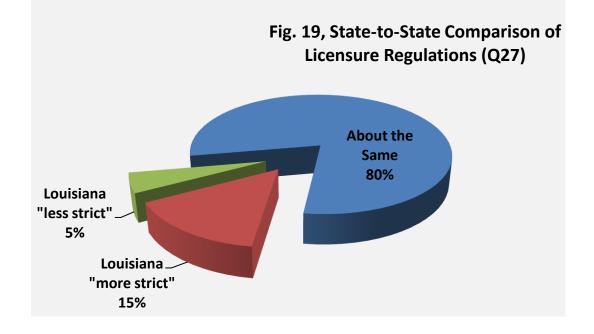
Based on these overall findings, it appears that any recent rate increases in Louisiana for water well installation and maintenance are more attributable to wider economic and market forces rather than to a decline in the availability of licensed well drillers or any undue burdens imposed upon them by the state's water well driller licensing requirements.

4 – CURRENT LICENSING REGULATIONS FOR WATER WELL DRILLERS

There is considerable support among water well drillers for the current regulations governing their licensure by the state. 93% of the survey respondents agreed or agreed strongly with the contention that these regulations have worked well to "secure technical competency in the field of water well drilling" (see Fig. 17, below). 87% agreed or agreed strongly that these regulations also have worked well to "protect and conserve the state's groundwater resources" (see Fig. 18, below).



Further, among those water well drillers holding both a license in Louisiana and a license in another state (often in multiple states), there is a widespread consensus that Louisiana falls well within the national, and especially the regional norm, with its licensure requirements (see Fig. 19, below). 80% rated Louisiana's regulations as "about the same" as the other states in which they held an additional license. 15% rated Louisiana as actually being "more strict" than other states, and 5% thought Louisiana less strict.



A comparison of Louisiana with its neighbors reinforces the above contention with regards to water well driller licensure regulations (see Appendix D). Arkansas appears to have a slightly more stringent certification and examination process, and stronger enforcement powers, including confiscation of drilling equipment, vehicles, and assets from so-called "rogue" drillers. Texas appears a little more lax than Louisiana in these areas. Mississippi appears as about the same. Of interest for this report, Mississippi does have an exemption from licensure for landowners constructing their own wells for single home domestic or irrigation use, although a state permit is required to withdraw water from such wells. "Is it a problem? Perhaps for a short while in extreme busy season of 2-3 months but not throughout the year. I don't see where it is a problem - at least a problem that does not exist in other states also."

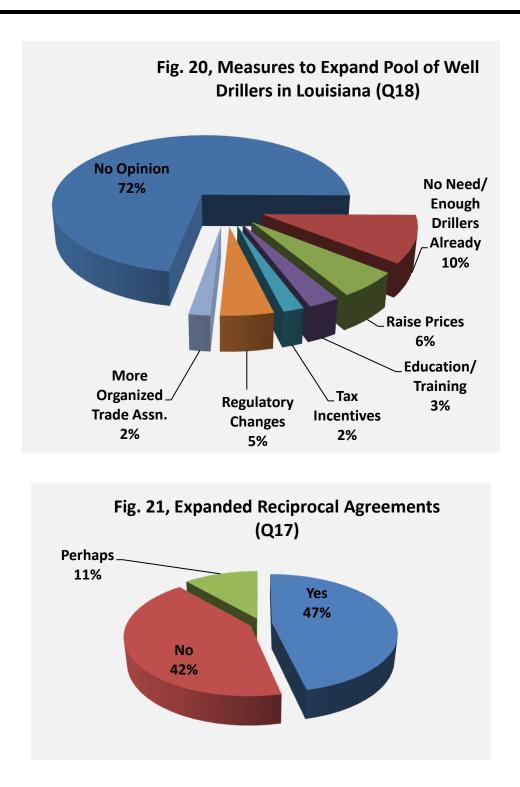
"This industry is not easy. It is hard work. Most people don't want to work for less than \$20 or \$30 per hour. Drilling companies can't afford that cost. Making it easy to get a drilling license will not help the true problem."

> Source: Office of Conservation Survey of Licensed Water Well Drillers

4 – VIEWS ON EXPANDING WATER WELL DRILLER NUMBERS

Water well drillers tended to have "no opinion" (72%) when asked what measures they would suggest to "increase the available pool of water well drillers in Louisiana" (see Fig. 20, next page). Among those that responded with a definitive answer, 10% stated that it was their belief that there were enough water well drillers already and that there was no need to expand the size of the available pool. The facts cited previously in this report showing a 50% decline in the number of recent wells registered (see Fig. 9) and a near constant supply of water well drillers (see Fig. 1) support this assertion.

Smaller percentages of well drillers suggested a variety of other actions to expand the pool of water well drillers, such as raising prices to make the field more attractive to new drillers (6%), developing tax incentives (2%), cutting regulations and continuing education requirements (5%), strengthening access to training and education for younger drillers (3%), and having a more robust trade association (2%). Water well drillers were fairly equally split (see Fig. 21, next page) as to expanding reciprocal agreements with other states. Louisiana is already fairly open in this area.



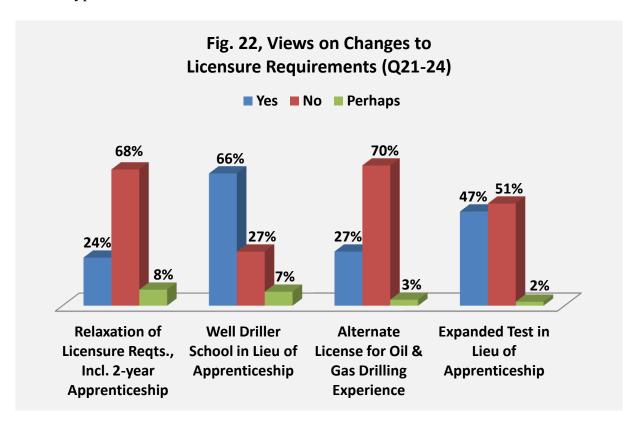
There is strong support among water well drillers for the two-year apprenticeship/supervisory requirement currently in place. In response to the survey question on this issue, more than two-thirds (68%) opposed relaxing this aspect of licensure (see Fig. 22, next page). Texas, Mississippi, and Arkansas all have similar such "As long as an apprenticeship component remained. Time in [the] field with book knowledge will always produce a better result than just book knowledge."

"Some things that can be memorized to pass a test do not qualify a person for the real test of well drilling and completion. It's dangerous and complicated."

"Oil & gas drilling is completely different from water well drilling because I have done all three."

> Source: Office of Conservation Survey of Licensed Water Well Drillers

requirements. Many drillers (66%) showed support for the substitution of some type of water well driller school or similar vo-tech program for the two-year apprenticeship, or some combination thereof. The idea of an expanded water well driller exam drew a mixed response (47% in favor, 51% opposed). Those that commented usually pointed to the need for some type of test and fieldwork combination.



Well over two-thirds (70%) of water well drillers opposed an alternate license for those with oil and gas drilling experience, stating that in their professional experience, the two kinds of work were "completely different" or "totally different" or "nothing close in comparison." No such alternative license is available in Texas, Mississippi, or Arkansas.

CONCLUSION

This report finds that the availability of licensed water well drillers in Louisiana has remained static over the past decade, while overall demand for well drilling services has declined. The demand for shallow agricultural-use wells has remained relatively constant outside of a few temporary, short-term periods of above average need. While water well installation and maintenance rates have increased, this is largely attributable to wider economic and market forces rather than to a decline in the availability of water well drillers or any burdens imposed by the state's water well driller licensing requirements.

Overall, Louisiana's licensing requirements for water well drillers are within the regional norm and sufficient to meet the goals of the Office of Conservation's Ground Water Resources Program as mandated by revised statute. They do not pose an undue impediment to joining the ranks of water well drillers in the state, nor do they impact rates charged for water well installation and maintenance in a burdensome, or even noticeable, way. These requirements, including the two-year apprenticeship and competency exam, continue to serve their main purposes of maintaining technical proficiency in the profession and protecting the state's groundwater resources. Water well drillers are ably represented through the Advisory Committee for the Regulation and Control of Water Well Drillers (see Appendix E). The Office of Conservation has no major recommendations for changes to the water well driller licensure requirements.

APPENDIX A – HOUSE CONCURRENT RESOLUTION NO. 150 OF 2013

TEXT VERSION ONLY-

ENROLLED

Regular Session, 2013 HOUSE CONCURRENT RESOLUTION NO. 150 BY REPRESENTATIVES PYLANT AND GAROFALO AND SENATOR THOMPSON

A CONCURRENT RESOLUTION

To urge and request the Department of Natural Resources, office of conservation, in consultation with the Water Resources Commission, to study, report, and make recommendations on the availability of qualified water well drillers, water well driller licensing requirements, and their impact on the rates charged for drilling of water wells and to submit the report and recommendation to the House Committee on Natural Resources and Environment and the Senate Committee on Natural Resources on or before February 15, 2014.

WHEREAS, the water resources of the state are a precious natural resource necessary for public health, safety, and economic well-being; and

WHEREAS, the water resources of the state and the United States, generally, are in high demand and are in need of conservation and protection; and

WHEREAS, an important aspect of conservation and protection of our water resources is ensuring that only qualified water well drillers install water wells, not only for the sake of their customers, but also for the general public; and

WHEREAS, every person, firm, or corporation engaged, or desiring to engage in the business of drilling water wells is by law required to be licensed; and

WHEREAS, despite the current demand for water well drillers, the decline in the number of licensed water well drillers has outpaced new drillers; and

WHEREAS, the demand for water wells, especially for shallow wells less than two hundred feet for agricultural use, has increased; and

WHEREAS, the decrease in the availability of licensed water well drillers and its potential impact on the rates charged have led land owners to seek options to install water wells themselves on their own land for agricultural use; and

WHEREAS, Act No. 437 of the 2009 Regular Session of the Legislature transferred, along with other responsibilities ground water resource management, the administration of the laws, rules, and regulations providing for the licensing of water well drillers from the Department of Transportation and Development to the Department of Natural Resources, office of conservation; and

WHEREAS, the House Committee on Natural Resources and Environment considered House Bill No. 208 with great discussion on several issues, including the demand of, the qualifications for, the two-year apprentice requirement for, and the testing requirements for licensing water well drillers, and the role of the advisory committee, created by R.S. 38:3098.6.

THEREFORE, BE IT RESOLVED that the Legislature of Louisiana does hereby urge and request the Department of Natural Resources, office of conservation, in consultation with the Water Resources Commission, to study and report a detailed review of the availability and demand for qualified water well drillers, the demand for shallow water wells less than two hundred feet for agricultural use, the rules and regulations regarding the licensing of water well drillers, including but not limited to qualifications, the two-year apprentice requirement, and the testing of water well drillers, as well as the role of the advisory committee created by R.S. 38:3098.6, in ensuring that only qualified water well drillers are licensed to the House Committee on Natural Resources and the Environment and the Senate Committee on Natural Resources by February 15, 2014.

BE IT FURTHER RESOLVED that the Legislature of Louisiana does hereby urge and request the Department of Natural Resources, office of conservation, in consultation with the Water Resources Commission, to propose recommendations to address the concerns of the availability of qualified water well drillers and its impact on the rates charged, changes, if any, to the rules and regulations on the licensing of qualified water well drillers, including but not limited to changes to qualifications, the two-year apprentice requirement, and the testing of prospective water well drillers, to ensure that the state's precious natural water resources are protected for public health, safety, and economic well-being, and report any such recommendations to the House Committee on Natural Resources and Environment and the Senate Committee on Natural Resources by February 15, 2014.

BE IT FURTHER RESOLVED that a copy of this Resolution be transmitted to the Department of Natural Resources, commissioner of conservation.

SPEAKER OF THE HOUSE OF REPRESENTATIVES

PRESIDENT OF THE SENATE

APPENDIX B – OFFICE OF CONSERVATION SURVEY OF LICENSED WATER WELL DRILLERS



BOBBY JINDAL GOVERNOR

State of Louisiana DEPARTMENT OF NATURAL RESOURCES OFFICE OF CONSERVATION

STEPHEN CHUSTZ SECRETARY

JAMES H. WELSH COMMISSIONER OF CONSERVATION

July 24, 2013

TO: All Louisiana Licensed Water Well Drillers

RE: House Concurrent Resolution No. 150

During the 2013 legislative session, the Louisiana Legislature approved House Concurrent Resolution No. 150 (HCR 150) which requested that the state Office of Conservation "study, report, and make recommendations on the availability of qualified water well drillers, water well driller licensing requirements, and their impact on the rates charged for drilling of water wells." A copy of the resolution is provided herewith for your convenience.

Under my statutory authority as found in La. R.S. 38:3094.B.(2), I am requiring that all licensed water well drillers operating in Louisiana complete the enclosed survey for the purpose of fulfilling my office's obligation to provide a report to the Legislature on HCR 150. *This survey is for research purposes <u>only</u> and all information provided in response to survey questions is considered confidential. No individual or corporate names will be used in the report to the Legislature.*

Please take the time to answer each question carefully and to the fullest extent possible. Your response is required on or by <u>AUGUST 16th</u>, 2013. Once complete, you may return a hard-copy of the survey to:

Louisiana Office of Conservation ATTN: Water Well Driller Survey P.O. Box 94275 Baton Rouge, LA 70804-9275

Or, you may fax a copy to (225) 242-3608, or send as a scanned attachment to matthew.reonas@la.gov.

If you have any questions, please contact Matthew Reonas, (225) 342-1496.

Thank you for your assistance with this matter.

Yours very truly,

James H. Welsh Commissioner of Conservation

JHW:GWS:jmr

Enclosures (2)

Environmental Division

Post Office Box 94275 • Baton Rouge, Louisiana 70804-9275 • 617 North 3rd Street • 9th Floor • Baton Rouge, Louisiana 70802 Phone (225) 342-8244 • Fax (225) 242-3505 • www.dnr.state.la.us/conservation An Equal Opportunity Employer

OFFICIAL SURVEY OF LOUISIANA LICENSED WATER WELL DRILLERS

Instructions: Please circle the answer or answers that most accurately describe your situation or opinion. You may add commentary in the space next to the question to provide a more complete answer if so desired. In some questions, additional space has already been provided for specific comments.

SECTION I: Background

- 1. How long have you been licensed to drill water wells in Louisiana?
 - a. Less than 5 years
 - b. 5 to 10 years
 - c. 10 to 20 years
 - d. More than 20 years
- 2. What types of wells are you licensed to drill in Louisiana?
 - a. Standard water wells only (domestic, irrigation, rig supply, public supply, industrial, etc.)
 - b. Monitor and/or environmental wells only
 - c. All of the above
- Are you also licensed to drill water wells in other states besides Louisiana? (If yes, see Section V at end of survey.)
 - a. Yes
 - b. No
- 4. What region or regions of Louisiana would you consider to be your operational territory or "home base"? (Please circle all that apply.)
 - a. Statewide
 - b. Northeast Louisiana (Monroe, Delta Parishes)
 - c. Northwest Louisiana (Shreveport to Ruston)
 - d. Central Louisiana (Alexandria, Natchitoches, Marksville, Leesville CENLA)
 - e. Southwest Louisiana (below Alexandria, west of Atchafalaya River
 - f. Southeast Louisiana (Mississippi River Parishes, Florida Parishes)
 - g. Other please describe: _

SECTION II: Business Operations and Costs

- 5. Does a particular kind of well construction or maintenance provide more than 50% of your <u>work volume</u> in Louisiana?
 - a. Yes
 - b. No
- 6. If you answered "yes" to Question 5 above, which type of well construction or maintenance provides more than 50% of your **work volume** in Louisiana?
 - a. Irrigation
 - b. Public Supply
 - c. Domestic
 - d. Industrial
 - e. Rig supply/frac supply (for oil & gas industry)
 - f. Monitor/environmental
 - g. No Answer/Does Not Apply
- Does a particular kind of well construction or maintenance provide more than 50% of your <u>total business</u> <u>revenue</u> in Louisiana?
 - a. Yes
 - b. No
- 8. If you answered "yes" to Question 7 above, which type of well construction or maintenance provides more than 50% of your **total business revenue** in Louisiana?
 - a. Irrigation
 - b. Public Supply
 - c. Domestic
 - d. Industrial
 - e. Rig supply/frac supply (for oil & gas industry)
 - f. Monitor/environmental
 - g. No Answer/Does Not Apply
- 9. Have you experienced price increases over the past ten years in any of the following items associated with the well drilling business? (Please circle all that apply.)
 - a. Fuel & transportation
 - b. Rig equipment & maintenance
 - c. Qualified Labor
 - d. Supplies & materials (cement, grouting, casings, etc.)
 - e. Expanded regulatory requirements please specify: _

- 10. Would you agree or disagree with the following statement? *The average cost of drilling a well has increased in the past ten years.*
 - a. Agree strongly
 - b. Agree
 - c. No opinion
 - d. Disagree
 - e. Disagree strongly

11. Have you ever had to turn away or refuse well drilling business in the past five years?

- a. Yes
- b. No

12. If you answered "yes" to Question 11, tell us why. (Please circle all that apply.)

- a. Not enough time
- b. Not enough qualified labor or equipment
- c. More profitable jobs elsewhere
- d. Not a type of well that I drill
- e. Other please explain: _

SECTION III: Supply and Demand

- 13. Would you agree or disagree with the following statement? *There are not enough water well drillers in Louisiana to meet the current demand for water well construction and/or maintenance.*
 - a. Agree strongly
 - b. Agree
 - c. No opinion
 - d. Disagree
 - e. Disagree strongly
- 14. Would you agree or disagree with the following statement? *The demand for water wells in Louisiana is so great that requests for installation and/or maintenance cannot be met in a timely fashion (within 1 month).*
 - a. Agree strongly
 - b. Agree
 - c. No opinion
 - d. Disagree
 - e. Disagree strongly

- 15. Would you agree or disagree with the following statement? *There are not enough water well drillers in Louisiana to meet the current demand for shallow wells less than 200 feet for agricultural and irrigation purposes.*
 - a. Agree strongly
 - b. Agree
 - c. No opinion
 - d. Disagree
 - e. Disagree strongly
- 16. Would you agree or disagree with the following statement? *The demand in Louisiana for shallow water* wells less than 200 feet to be used for agricultural and irrigation purposes is so great that requests for installation and/or maintenance cannot be met in a timely fashion (within 1 month).
 - a. Agree strongly
 - b. Agree
 - c. No opinion
 - d. Disagree
 - e. Disagree strongly
- 17. Would you support expanded or improved reciprocal agreements with other states (accepting out-of-state licenses) to increase the pool of water well drillers available in Louisiana?
 - a. Yes
 - b. No
 - c. Perhaps explain:

18. What other measures would you suggest to increase the available pool of water well drillers in Louisiana?

4

SECTION IV: Licensing Requirements

- 19. In your opinion, have Louisiana's licensure procedures and regulations worked well to secure technical competency in the field of water well drilling?
 - a. Strongly agree
 - b. Agree
 - c. No view
 - d. Disagree
 - e. Strongly disagree
- 20. In your opinion, have Louisiana's licensure procedures and regulations for water well drillers worked well to protect and conserve the state's groundwater resources?
 - a. Strongly agree
 - b. Agree
 - c. No view
 - d. Disagree
 - e. Strongly disagree
- 21. Would you support a relaxing of the licensing process for water well drillers in Louisiana, including the reduction or elimination of the currently required two-year apprenticeship?
 - a. Yes
 - b. No
 - c. Perhaps explain:
- 22. Would you support the development of a well driller training program at state vocational or technical schools in lieu of the two-year apprenticeship?
 - a. Yes
 - b. No
 - c. Perhaps explain: ______

23. Would you support an alternative water well driller's license that substituted two years of experience with oil and gas drill rig operations for the current two-year apprenticeship?

- a. Yes
- b. No
- c. Perhaps explain:

5

24. Would you support an alternative water well driller's license that substituted an expanded water well installation competency test for the current two-year apprenticeship?

a. Yes

b. No

c. Perhaps – explain: _____

25. What, if any, changes to Louisiana's licensing procedures or regulations for water well drillers would you suggest to provide for more qualified drillers in the state?

SECTION V: Licensing and Regulation (Other States)

THE FOLLOWING SECTION IS FOR WATER WELL DRILLERS WHO ANSWERED "YES" TO QUESTION 3 AND ARE LICENSED WITH OTHER STATES IN ADDITION TO LOUISIANA. IF YOU ARE NOT LICENSED WITH ANY OTHER STATE, YOU <u>DO NOT</u> HAVE TO ANSWER THE FOLLOWING QUESTIONS.

26. Please list the other state or states in which you are licensed to drill water wells.

27. In your opinion, are Louisiana's requirements for licensure as a water well driller more or less strict than those of other states in which you are licensed?

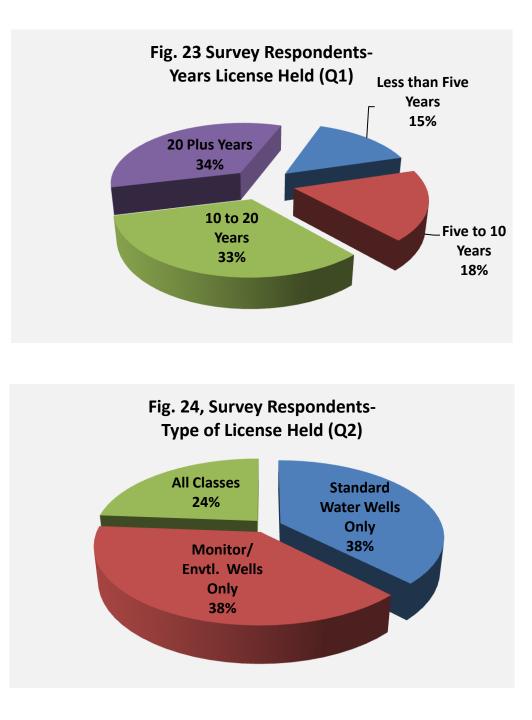
- a. More strict
- b. About the same
- c. Less strict
- 28. Please list some key differences in licensure requirements between these different states that you have experienced.

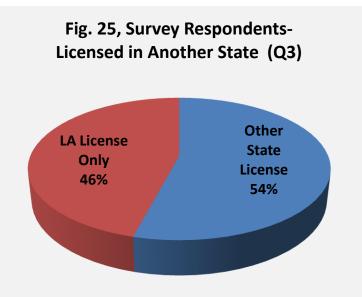
APPENDIX C – CHARACTERISTICS OF SURVEY SAMPLE

In July 2013, the Office of Conservation mailed surveys to 246 Louisiana-licensed water well drillers (see Appendix B). The survey questions were designed to gauge opinions on a wide variety of issues relative to the business of water well drilling and water well driller licensure. The Office of Conservation ultimately received 127 complete or mostly complete surveys by our deadline in August 2013. The return rate was 51.6%. Of the returned surveys, four were discarded because they were deemed by staff to be too incomplete for use, leaving 123 valid surveys as the actual sample size. The valid return rate was 50%, providing a plus/minus error rate of 6.2% with 95% confidence. Staff economists with the Department of Natural Resources found this to be an acceptable margin and deemed the survey statistically valid.

More than two-thirds (67.2%) of the survey respondents reported holding their Louisiana well driller's license for more than 10 years (see Fig. 23, next page). About onefifth (18%) reported holding their license for between five and 10 years. Less than 15% reported holding their license for fewer than five years. Overall, this was a seasoned and experienced lot of respondents that one would expect to be knowledgeable about the well drilling business in Louisiana.

A little less than 38% of the survey respondents reported their license type as that for standard water wells only, which would allow them to drill domestic, irrigation, rig supply, public supply, and industrial wells (see Fig. 24, next page). A little over 38% reported their license type as being for the drilling of monitor or environmental wells only. Almost 24% reported holding a license qualifying them to drill all types of water wells. These numbers are fairly consistent with Office of Conservation licensure records, which show a little less than 43% of drillers licensed for standard water wells, a little more than 43% licensed for monitor or environmental wells, and 14% licensed for all types of wells. There appears to be a representative balance between standard and monitor licenses. The "All Classes" segment is over-represented in this sample.

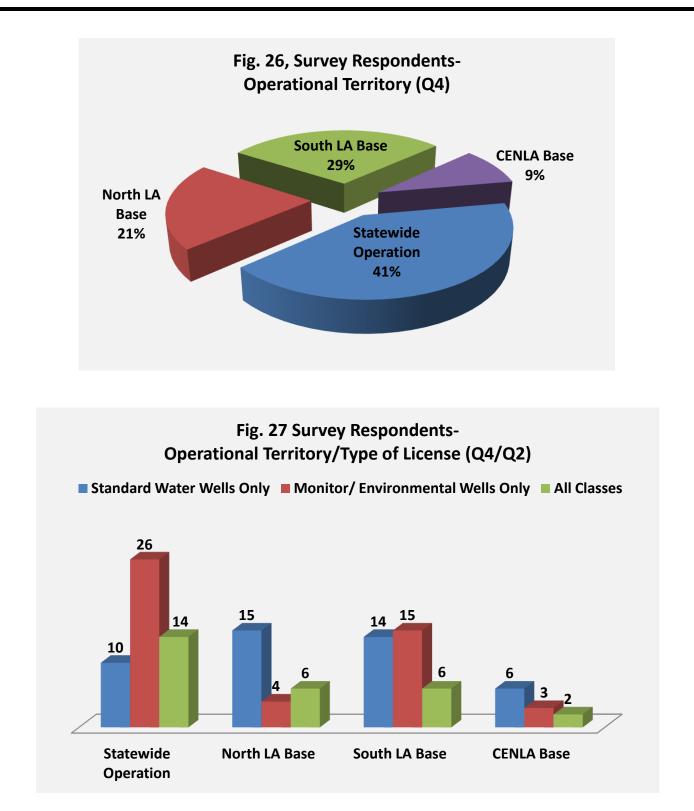




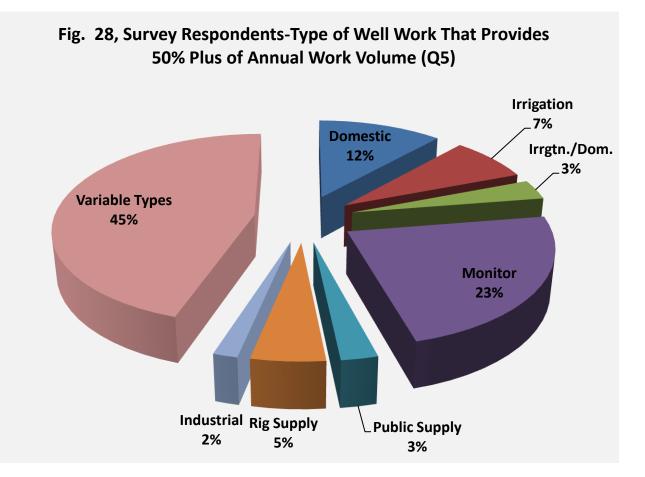
About 54% of the survey respondents reported holding additional water well driller licenses in at least one other state (Fig. 25, above). The most common states for additional licenses are: Texas (36), Mississippi (33), Arkansas (29), and Oklahoma (16). Others include Georgia, Florida, Alabama, South Carolina, North Carolina, Virginia, Kentucky, Tennessee, Missouri, Kansas, Pennsylvania, Indiana, Illinois, Michigan, Minnesota, Iowa, South Dakota, Nebraska, California, Washington, Nevada, Arizona, and New Mexico.

50 of the survey respondents reported a statewide operational territory, with 25 reporting a home base in north Louisiana, 35 a home base in south Louisiana, and 11 working primarily in central Louisiana (see Fig. 26, next page). Broken down even further by sub-region, the listing appears thus:

Northwest Louisiana: Northeast Louisiana: Central Louisiana: Southwest Louisiana: Southeast Louisiana: 13, plus 6 working in central Louisiana
7, plus 5 working across all north Louisiana
5, plus 6 working in northwest Louisiana
13, plus 5 working across all south Louisiana
17, plus 5 working across all south Louisiana

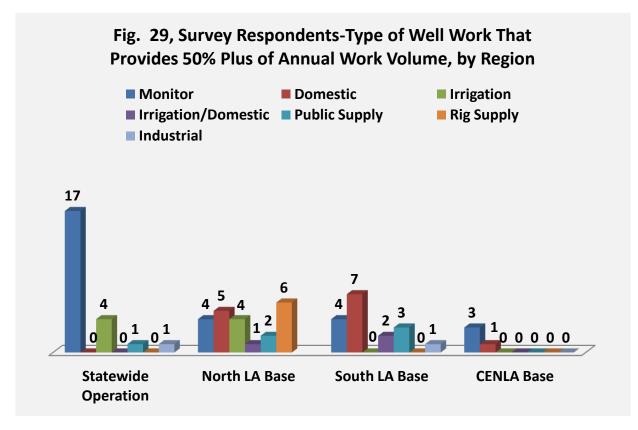


Among survey respondents with a statewide operational territory, just over half reported holding a license for monitor/environmental wells only, while a little more than a quarter (28%) were licensed for work with all classes of wells (see Fig. 27, above). Among those respondents based in north Louisiana, a full 84% reported holding a license (standard or all classes) that enabled them to drill domestic, irrigation, public supply, rig supply, or industrial wells. These numbers reflect the predominance in local demand for irrigation, domestic, and even rig supply wells, with less need for monitor wells. From a comparative perspective, among those survey respondents based in south Louisiana, only 57% held such an open license, reflecting a higher demand for monitor wells in this area.



More than half (55%) of water well drillers reported that the construction and/or maintenance of one type of well accounted for more than 50% of their annual volume of work (see Fig. 28, above). 45% noted that their work was too diversified or variable to classify by a single type of well. Monitor/environmental well drillers (23%) were the largest group of respondents working in a single field, followed by 12% of those drilling primarily domestic wells, and 7% largely installing irrigation wells. Smaller percentages represented more specialized work. From these numbers, it appears that approximately 55% of well drillers (variable + irrigation + irrigation/domestic), and perhaps more if domestic well drillers are included, are capable of meeting the demand for irrigation wells.

Fig. 29, below, shows the distribution by region of survey respondents that reported more than 50% of their annual volume of work from construction or maintenance of one type of well. Among statewide operations, 74% listed monitor/environmental wells as the main source of their work. North Louisiana drillers were the most diverse, with domestic, rig supply, irrigation, and monitor wells providing the bulk of work in fairly equal numbers. South Louisiana showed a preponderance of drillers working in domestic wells, with only two providing "irrigation/domestic" services. Again, 45% of <u>all</u> survey respondents indicated that no single type of well work accounted for more than 50% of their work volume.



APPENDIX D – REGIONAL COMPARISON OF WATER WELL DRILLER LICENSURE REQUIREMENTS

| | LOUISIANA | MISSISSIPPI | TEXAS | ARKANSAS |
|--|---|--|---|--|
| Individual or Company License | Individual or Company (Designated individual for company license) | Individual or Company (Designated individual for company license) | Individual | Individual |
| Different Types of Contractor Licenses | YES Water Wells (Standard); Monitor Wells; Both Classes | YES Water Wells (Unrestricted); Specialty Driller or Pump Installer | YES Restricted by class; also Master Driller and Master Pump Installer | YES Drilling and Pump Systems; Pump Systems Only; Drilling Only; Master Electricians; Master Plumbers |
| Different Registration Certificates or Endorsements | NO | YES Miss. River Alluvial irrigation wells; domestic wells less than six inches in diameter; geotechnical boreholes; monitor wells; geothermal systems; pump installation or servicing | YES Water wells; injection wells; monitor wells; dewatering wells; geothermal wells; pump installer (single phase, three-phase, turbine, windmill/pump jack/hand pump) | YES Consolidated (for all wells other than monitor in rock formations); Unconsolidated (for all wells other than monitor in sand, clay, or gravel); Monitor and piezometer wells; Hydrofracturing; Geothermal systems; Pump Installer Certificates (Turbine, Submersible, Jet, Monitoring/Purging/S ampling, Positive Displacement, Plugging) |

| | LOUISIANA | MISSISSIPPI | TEXAS | ARKANSAS |
|---|---|---|--|--|
| Must file an application with | YES | YES | YES | YES |
| appropriate state agency setting out qualifications | Office of Conservation | Dept. of Environmental Quality (MDEQ) | Dept. of Licensing and Regulation | Commission on Wate Well Construction |
| Review of | YES | YES | YES | YES |
| applications by appropriate agency or advisory committee | Advisory Committee on the Regulation of Water Well Drillers | MDEQ | Dept. of Licensing and Regulation; Water Well Drillers Advisory Council | Commission on Wate Well Construction |
| Must take a licensing examination | YES | YES | YES | YES |
| | Option for oral or written exam | Written | Written or oral | Written |
| Exemptions for Registered Professional Engineers and Registered Professional Geologists | NO | NO | NO | YES |
| Annual licensing renewal process, without qualifying examination | YES | YES | YES | YES |
| License fee | YES | YES | YES | YES |
| | \$100 annually | \$100 annually | Driller license, \$215 annually; Installer license; \$215 annually; Combination license, \$325 annually | Drilling and Pump System License, \$350 annually; Pump System Only License, \$175 annually; Drilling Only License, \$175 annually; Others, \$125 annually |

| | LOUISIANA | MISSISSIPPI | TEXAS | ARKANSAS |
|--|--|--|---|---|
| Age requirement, character and knowledge clause for licensure | YES 18 years or older, "of good moral character," knowledge of rules and regulations | YES 21 years or older, "of good moral character," knowledge of rules and regulations | NO | YES 18 years or older, "of good moral character," knowledge of rules and regulations |
| Experience clause for licensure | YES Two years' experience under the supervision of a licensed driller, OR "comparable drilling experience acceptable to the department" | YES Three years' experience; proof of possession or access to necessary tools and equipment | YES Must have qualifying number of installations to sit for relevant license examination | YES Completed apprenticeship program, OR held similar license in last 10 years, OR hold similar license from another state |
| References | YES Names and addresses of two licensed drillers familiar with applicant's experience | YES Notarized affidavits from three licensed water well contractors as to applicant's experience | NO | YES Apprenticeship supervisor, or other acceptable to Commission |
| Requirements for maintaining a license | YES Must abide by rules and regulations | YES Must abide by rules and regulations | YES Accurate representations of license; no unauthorized practice; other ethical mandates | YES Abide by rules and regulation |

| | LOUISIANA | MISSISSIPPI | TEXAS | ARKANSAS |
|--------------------------------|--|--|--|---|
| Continuing Education | YES Six hours annually | YES Four hours annually | YES Four hours annually | YES Six hours annually |
| Record Keeping Requirements | YES | YES | YES | YES |
| Identification Requirements | YES All rigs and service vehicles must be marked with license number | YES All rigs and service vehicles must be marked with license number | YES All rigs must be marked with license number | YES License displayed at business |
| Licensure Reciprocity | YES Will grant license to driller from any other state provided standards are equivalent and other state will accord similar privilege | YES Will grant license to driller with similar license or certificate; must pass test on state laws, regulations, and construction standards | YES Can waive in-state license requirements for qualified out-of- state applicants with similar license | YES Will grant license to driller with similar license or certificate; must pass test, pay fees; as long as other state has similar reciprocal agreement |
| Apprenticeship Program | NO No formal program, but two years experience necessary for licensure must be gained under a licensed driller "or other comparable drilling experience" | NO No formal program, but three years experience necessary for licensure must be gained under a licensed driller | NO No formal program; licensed driller cannot supervise more than three unlicensed assistants at a time | YES Formal program Able to apply for licensure after one year on supervisor recommendation, or after three years on application by apprentice |

| | LOUISIANA | MISSISSIPPI | TEXAS | ARKANSAS |
|--|---|--|---|---|
| License Revocation Process | YES Based on violations, lack of competence, failure to file reports, etc.; hearing and appeal process | YES Based on violations, lack of competence, failure to file reports, etc.; hearing and appeal process | YES Based on violations, lack of competence, failure to file reports, etc.; hearing and appeal process | YES Based on violations, lack of competence, failure to file reports etc.; hearing and appeal process |
| Civil and Criminal Penalties | YES Civil and Criminal | YES Civil | YES Civil | YES Civil and Criminal; also confiscation of well drilling rig and equipment |
| Certified or licensed driller must be on- site during work | NO Licensed driller must be available | NO Licensed drillers may certify competency of employees in absence of licensee; must submit list to MDEQ | NO Unlicensed assistant is o.k. as long as licensed driller within 2 hours travel time, and available by immediate communication | YES |
| Bond Requirement | NO | NO | NO | YES |
| Landowner Exemptions | YES Landowner may construct or plug well WITHOUT LICENSE on own property for single family permanent residence, or for watering livestock, in compliance with all applicable standards and regulations | YES Landowner or lessee may drill well WITHOUT LICENSE on own property for domestic use (permanent residence), or for irrigation of crops on farm, in compliance with all applicable standards and regulations | YES Any person installing or repairing water well pumps or equipment on own or leased land for personal use does not require a license | YES Landowner installing pumping equipment only in wells on own property for persona use does not require a license |

APPENDIX E – ROLE OF THE ADVISORY COMMITTEE FOR THE REGULATION AND CONTROL OF WATER WELL DRILLERS

Advisory Committee for the Regulation and Control of Water Well Drillers

R.S. 38:3098.6

A. The Department of Natural Resources is hereby authorized to appoint a committee to serve in an advisory capacity and to make recommendations for the regulation and control of water well drillers as defined in this Chapter. This advisory committee shall consist of the following members:

- (1) The commissioner of conservation or his designee.
- (2) The secretary of the Department of Natural Resources or his designee.

(3) The president of the Louisiana Engineering Society or his designee.

- (4) The secretary of the Department of Health and Hospitals or his designee.
- (5) One representative of the United States Geological Survey.

(6) One domestic well driller selected by the governor from a list of three submitted by the Louisiana Ground Water Association.

(7) One municipal and industrial driller selected by the governor from a list of three submitted by the Louisiana Ground Water Association.

(8) One irrigation driller selected by the governor from a list of three submitted by the Louisiana Ground Water Association.

(9) Two drillers at large selected by the commissioner of conservation from the industry as a whole.

B. The first appointment of the domestic well driller and one at large driller shall be for one year; the first appointment of the irrigation well driller and one at large driller shall be for two years; the first appointment of the municipal and industrial driller shall be for three years; thereafter, all appointments shall be for four year terms.

C. The chairman and vice chairman shall be selected by the members of the committee.

D. The members who are public employees shall receive no pay or allowances for their attendance at meetings of the advisory committee. All other members of the advisory committee shall receive no salary or per diem but may be compensated for expenses actually incurred in official activities approved by the office out of funds derived from license fees collected under the provisions of this Chapter. Such compensation shall be based upon proof to the satisfaction of the office in accordance with policies adopted by the legislative auditor in such matters.

Duties

- 1. Serve in an advisory capacity and to make recommendations for the regulation and control of water well drillers.
- Determine if a licensee who is delinquent on his renewal fee for more than one year should be considered a new applicant.
- 3. Determine if someone who has had their license revoked should be considered a new applicant.

<u>Current By-Laws, adopted under the Department of Transportation and Development and</u> published in Section 5.4.1.0 of the Water Well Rules, Regulations and Standards

<u>By-Laws and Meetings.</u> The advisory committee shall hold a minimum of one regular meeting each quarter, usually in February, May, August, and November, as specified by the chairman. Notice of the meetings shall be given by the Department at least fifteen days prior to the meetings. Designated committee members must inform the Department if they are unable to attend a meeting. Committee members do not have the privilege of sending replacements. Six members will be considered as a quorum for transacting business.

The chairman and vice-chairman shall be elected by the members of the committee during the third quarter meeting of each year to serve a term of one year.

A special meeting of the advisory committee may be called by the chairman or by three committee members, upon notification of all members, with five days notice. All notices of regular or special meetings of the committee will be sent to the official addresses of the members, as recorded by the committee.

The chairman shall preside at all meetings of the committee and shall, at any and all hearings of the committee, decide all questions of evidence and procedure, subject to the approval of a majority of the members of the committee present. The chairman or the person occupying the chair shall vote only to break a tie.

In the absence of the chairman and vice-chairman of the committee, the members present shall choose from their number an acting chairman.

In the case of the vacancy of the position of any officer of the committee by reason of death, resignation, disqualification or otherwise, the remaining members of the committee shall, at the next scheduled meeting, elect a successor to serve for the unexpired term.

In the case of the vacancy of any member of the committee by reason of death, resignation, disqualification or otherwise, the committee shall petition appropriate authority to appoint a replacement.

In the case of unexcused absenteeism by any member of the committee, three consecutive unexcused absences from the committee meetings shall be considered a de facto resignation by that member.

LOUISIANA DEPARTMENT OF NATURAL RESOURCES OFFICE OF CONSERVATION

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