



JOHN BEL EDWARDS  
GOVERNOR

State of Louisiana  
DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF CONSERVATION

THOMAS F. HARRIS  
SECRETARY

RICHARD P. IEYOUB  
COMMISSIONER OF CONSERVATION

June 28, 2016

Bruce Martin, Vice President  
Texas Brine Company, LLC (T149)  
4800 San Felipe, Texas 77056

RE: TBC's Requests for changes to required actions relating to  
Emergency Situation Associated with the Collapse of Oxy-  
Geismar No. 3 Cavern, Well SN 180708

Dear Mr. Martin:

The Office of Conservation ("Conservation") of the Department of Natural Resources ("DNR") reviewed the several requests submitted by you on behalf of Texas Brine Company, LLC ("TBC") in our meeting of April 6, 2016 concerning the emergency response activities required pursuant to several emergency declarations and directives previously issued by this office. Please find below this agency's response to these requests.

**TBC's request for a "No Further Action at This Time" (NFA-ATT)<sup>1</sup> determination throughout the Parish's evacuation area:**

Conservation believes that decisions concerning your request for the issuance of an No Further Action – At This Time (NFA-ATT) over the entire evacuation area require evaluation based upon the specific site conditions and potential risks for each portion of that area. The primary risk to be addressed prior to issuance of an NFA-ATT is the threat posed by "gas accumulations in or under buildings and other built structures"<sup>2</sup> (i.e. receptors). This risk obviously does not exist in those areas which do not contain buildings or structures underneath or within which gasses may accumulate. The evidence submitted supports that the potential pathways for gas accumulation in certain structures and buildings have been removed. Additionally, based upon information submitted to Conservation by TBC and the venting activities over the past several years, a preponderance of evidence provided suggests that

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<sup>1</sup> Conservation's use of the phrase NFA-ATT to respond to TBC's request should not be construed as application or use of DEQ's RECAP or other remedial regulatory standards, but is instead used herein solely to describe the cessation of certain additional emergency response activities associated with gas accumulation pursuant to several emergency orders previously issued by the Office of Conservation under La. R.S. 30:6.1.

<sup>2</sup> Blue Ribbon Commission on Bayou Corne and Grand Bayou Public Safety, *Gas Safety Benchmark Framework and Guidance*, March 17, 2014, page 1.

certain structures and buildings are over areas that are devoid of subsurface gas at reservoir pressures sufficient to allow for venting at the surface or accumulation under or within structures and buildings. TBC has also provided Conservation with evidence that it will continue operating all observation relief wells (ORW's) until they meet criteria for cessation of monitoring and abandonment. TBC included in their mitigation actions the stipulation they would share with operating personnel the results of the investigation to date concerning the occurrence of gas near the retail, commercial, and industrial facilities in these areas. Additionally, TBC has stated that it will continue monitoring all pressure monitoring wells (PMW's) until these wells are approved for abandonment. TBC has also agreed to provide landowners and any owners/operators of the industrial and commercial facilities in these areas a notice similar to the notice of potential risks of gas accumulation in structures which are not ventilated as was provided in paragraph 3 of the letter sent to the residents in TBC recommended areas for no further action - Area 1, as well as provide notice to owners/operators of the industrial and commercial facilities inside these areas of the Conservation notice regarding potential for encountering subsurface gas in drilling activities near salt domes. Conservation has been notified that TBC will provide methane monitors and instructions for monitor placement and use to all retail, commercial and industrial facilities in these areas. Therefore, Conservation will grant an NFA-ATT for the entirety of TBC recommended areas for no further action - Areas 2, 4, and 5 as well as the portions of Areas 3 and 6 identified below.

To help distinguish these areas please find the attached map. The evidence reviewed by Conservation supports the conclusion that the area outside of the "privately owned residential structure areas" as identified on the attached map (which roughly includes the TBC recommended areas for no further action - Areas 2, 4, and 5<sup>3</sup>, as well as the portions of Areas 3 and 6 for which the NFA-ATT is issued) does not currently contain any inhabited building or structure that would allow for gas accumulation.

Conservation will also consider issuance of an NFA-ATT for the areas with inhabited receptors (labeled "privately owned residential structure areas" on the attached map) upon receipt of information sufficient to conclude that any serious threat to life or safety has been satisfactorily mitigated and/or eliminated. Such information may include but is not limited to:

1. Proof that subsurface gas pressure in these areas has been reduced to hydrostatic pressure;<sup>4</sup> OR
2. Proof that the threat posed to the public (in general and the residents in particular) by the existing subsurface gas is equal or less than the threat posed by "swamp gas" (pre-2012 gas bubbling); OR
3. Evidence illustrating the implementation of a plan to ensure that buildings and built structures located within these areas are no longer capable of accumulating gasses; OR
4. Any other proposal which sufficiently mitigates or eliminates the threat of gas accumulation in or under the buildings or other built structures located in these areas.

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<sup>3</sup> While TBC recommended areas for no further action - area 5 does not contain any residences, it does contain Texas Brine Company, LLC's industrial facility, which maintains appropriate air monitoring and protocols as part of its normal operations.

<sup>4</sup> Hydrostatic pressure as used herein means the difference between the well shut-in pressure as measured at the top of the screened interval and the water pressure measured in the same or adjacent well and referenced to the same depth calculated using the measured water density in the well.

Finally, as to the areas including inhabited receptors (labeled “privately owned residential structure areas” on the attached map) and prior to issuance of an NFA-ATT, Conservation will require an affidavit with written statements from a currently licensed Louisiana Professional Geoscientist or Engineer with applicable expertise verifying that in his or her professional opinion any natural gas remaining in the aquifer and/or shallow subsurface (aquitard) water bearing zone(s) beneath the surface of these areas does not pose a serious threat to life or safety based upon the data and information available to TBC.

The conclusions above concerning any further actions to be undertaken by TBC were made in consideration and based upon the information provided and TBC's agreement to continue certain remedial activities and to undertake certain mitigating procedures as stated above. Therefore, it should be understood that should TBC fail to continue these activities and undertake these procedures, Conservation reserves its right to withdraw the above findings and to issue new orders and directives as necessary.

#### **TBC's Request to end bubble site passive vent well (PVW), and Knight Gas Cap (KCG) monitoring/reporting**

This agency does not object to a reduction in the monitoring and reporting requirements previously established for bubble sites, PVW, and KGS to a monitoring frequency of monthly to quarterly and reporting from quarterly to semi-annually.

#### **TBC's Request to end air monitoring and indoor air monitoring immediately**

This agency has consulted with the Louisiana Department of Environmental Quality (“DEQ”) regarding this issue and has requested a response as soon as possible. Until such time, TBC should continue to maintain all existing area and indoor air monitoring and reporting activities.

#### **TBC's Request that area subsidence monitoring reduced to annually in 2016 and stopped if results indicate subsidence rates are similar to regional historical rates. Will continue annual monitoring of immediate sinkhole area until it is similar to regional historical rates.**

This agency has no objection to TBC reducing the broader area subsidence monitoring frequency to annually in 2016. This agency will consider a request from TBC to stop the broader area subsidence monitoring if TBC demonstrates that sufficient subsidence monitoring data has been collected to establish that subsidence rates are similar to regional historical rates provided the region selected is comparable to the area within the sinkhole evacuation order. This Agency has no objection to TBC continuing subsidence monitoring as currently implemented for the area in the immediate vicinity of the sinkhole on an annual basis provided that TBC provides the annual results to the Agency on a timely basis not to exceed 3 months following the end of the subsidence monitoring annual time period. TBC should provide a plan detailing the specific area around the sinkhole that is proposed for continued monitoring as well as the rates it believes are similar to regional historical.

**TBC's Request to scale back seismic monitoring to only deep seismic monitoring via G-01 geophone well and cease shallow seismic monitoring.**

This agency cannot agree at this time that shallow seismic monitoring and reporting should cease with only deep seismic monitoring via G-01 geophone continuing. The current shallow and deep monitoring and reporting systems have only been fully and officially operating under the new protocol implemented for less than a year. Seismic events occurring above the top of the collapsed Oxy 3 side wall, western edge of the salt dome and/or below and to the east of the footprint of the sinkhole and around Oxy 1, 2, 3, 9 and 10 suggest continuation of the current deep and shallow seismic monitoring systems should remain. However, TBC may submit a detailed revised deep and/or shallow monitoring plan with adequate supporting documentation for Agency consideration if it believes a revised monitoring plan can provide adequate warning of any future catastrophic subsidence.

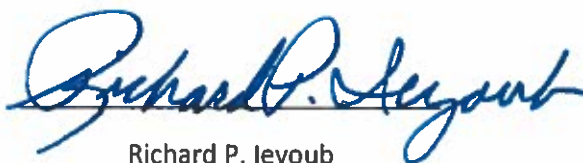
**TBC's Request to scale back area water level and inclinometer instrumentation deployment to minimal amount/number and monitor for 2016.**

This agency does not object to TBC providing a plan for scaling back existing water level and inclinometer deployment for implementation during the remainder of 2016 with intentions to submit a request with adequate supporting documentation for any further reduction of water level and/or inclinometer deployment in 2017.

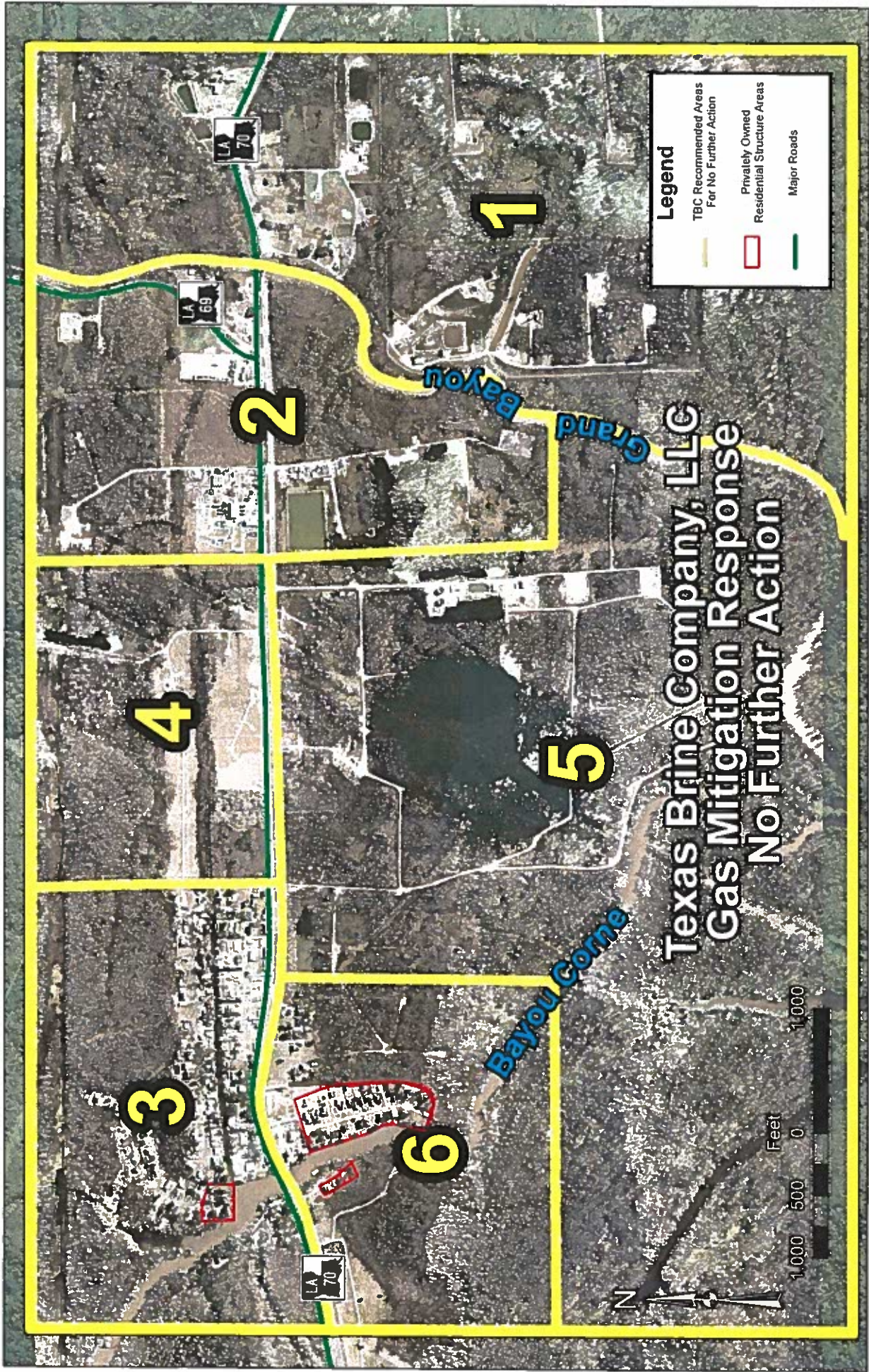
**TBC's Request to stop evacuation assistance to residents within the evacuation area.**

This agency does not find that its previous orders require continued evacuation assistance to those residents who have refused to evacuate in accordance with the Parish's declaration.

Yours very truly,



Richard P. Ieyoub  
Commissioner of Conservation



**Legend**

- TBC Recommended Areas For No Further Action
- Privately Owned Residential Structure Areas
- Major Roads

**Texas Brine Company, LLC  
Gas Mitigation Response  
No Further Action**

