



# Texas Brine Company, LLC

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November 22, 2013

Commissioner James H. Welsh  
P.O. Box 94275  
Baton Rouge, LA 70804

**RE: In response to State of Louisiana Department of Natural Resources Office of Conservation's Second Amendment to Declaration of Emergency and Directive**

Commissioner Welsh,

In response to the Second Amendment and Declaration of Emergency and Directive order issued by the Louisiana Department of Natural Resources (LDNR), Office of Conservation on September 25, 2012, Texas Brine Company, LLC (TPC) understands the seven items listed in the document.

In the above mentioned, TBC was specifically directed and ordered to perform certain tasks outlined in the above mentioned document. Below are the required responses, as directed.

1. TBC's counsel provided LDNR legal counsel with a response to Directives 1-3 on September 28, 2012.
2. TBC understands Directive 4, which is to provide all daily logs and field notes from all contractors conducting investigation into subsidence and natural gas bubbling. The Daily Action Summary and results for current information can be found in the Attachment section of this report.
3. TBC understands Directive 5, which directs TBC to immediately allow for split or share any sample taken on site related to Well 3A (Serial Number 974265), the cavern, other wells facilities or other site locations. The Daily Action Summary of today's collection can be found in Attachment section of this report.
4. TBC understands Directive 6, which directs TBC to immediately report the results (final and preliminary) of any tests, logs samples or data collection performed on Well 3A, the cavern, other wells, facilities or site locations that indicate a change in any previously known conditions related to the investigation of the subsidence or natural gas bubbling

events, and continue to report any such results. The Daily Action Summary and the Results related to this Directive can be found in Attachment section of this report.

5. TBC understands the Directive 7, which states that TBC will provide a daily summary of all tests, or logs performed or samples taken from Well 3A and the cavern as well as any results of those tests or logs, including preliminary as of September 25, 2012 and going forward. The Daily Summary and Results related to this Directive can be found in Attachment section of this report.

Please note that the drilling rig used for the Observation Well 3A has been removed and the site is being rigged down and returned to pre-drilling condition. As such, daily drilling reports for this well have ceased. Plans are being made for longer term potential gas venting/flaring requirements and possible hydrocarbon material recover from Well 3A.

In addition, previous daily summary reports issued to LDNR have included significant duplicate information as there is a fair amount of overlap in the information requested in each of the Directives included in the September 25, 2012 order. All requested information associated with the Directives issued in the September 25, 2012 order are included in the Attachment section of this report.

TBC believes that the submittal of this report satisfies the requirements of the Declaration of Emergency and Directive issued on September 25, 2012. As directed this report is submitted by email to [conservationorder@la.gov](mailto:conservationorder@la.gov), ref. "Emergency Declaration-Texas Brine Company LLC-9/25/2012.



Bruce E. Martin

Vice President, Operations

Texas Brine Company, LLC

## **Summary Table for Daily Events**

TBC Oxy Grand Bayou Data Management-Environmental										
Contractor	Responsibilities	Collected By		Date Collected		Delivered to Lab	Results from Lab	Laboratory	Method	Date to Agencies
Sage	Stationary Air Monitoring	08:20 Britt Barnett (Code Red) - 07:00 - 17:00 Neighborhood: Eric Rucinski - 07:15 - 15:15 Chad Deshotel (Code Red) - 00:00 - 06:00, 18:00 - 24:00 Roxana Dubose (Code Red) - 06:00 - 18:00		11/21/2013		NA	NA	NA	NA	11/22/2013
	Residential Air Monitoring	Sage has been requested to suspend bimonthly residential air monitoring. Therefore, Sage will discontinue these activities.		NA		NA	NA	NA	NA	NA
	Gas Seep Sampling	No work performed		11/21/2013		NA	NA	NA	NA	NA
	Well Gas Sampling	No work performed		11/21/2013		NA	NA	NA	NA	NA
	Under Slab Gas Sampling	No work performed		11/21/2013		NA	NA	NA	NA	NA
	Indoor Air Monitoring	No work performed		11/21/2013		NA	NA	NA	NA	NA
Respec	Inclinometers/Tilt Meters/Transducers	11/21/2013	No work Conducted		NA	NA	NA	NA	NA	NA
	InSAR Reflector Installations	11/21/2013	No work Conducted		NA	NA	NA	NA	NA	NA
	Subsidence Survey-Fenstermaker	11/21/2013	No work Conducted		NA	NA	NA	NA	NA	NA
	Shallow Geophone Installation	11/21/2013	No work Conducted		NA	NA	NA	NA	NA	NA
	Deep Geophone Installation	11/21/2013	No work Conducted		NA	NA	NA	NA	NA	NA
	Amendment #3, Directive #2	11/21/2013	No work Conducted		NA	NA	NA	NA	NA	NA
	Expansion of geoprobe gas sampling locations	11/21/2013	No work Conducted		NA	NA	NA	NA	NA	NA
	DPVE	11/21/2013	No work Conducted		NA	NA	NA	NA	NA	NA
	Abandon Casing Survey	11/21/2013	No work Conducted		NA	NA	NA	NA	NA	NA
	MIHPT	11/21/2013	No work Conducted		NA	NA	NA	NA	NA	NA
Miller	Weekly Stability Survey	No work performed		November 21, 2013		NA	NA	NA	NA	NA
	Misc. Survey Work	K. Pichoff		November 21, 2013		NA	NA	NA	NA	NA
	Sinkhole Hydro/Perimeter Survey	No work performed		November 21, 2013		NA	NA	NA	NA	NA
Pisani	Surface Water	NA		November 21, 2013		NA	NA	NA	NA	NA
	Sinkhole	NA		November 21, 2013		NA	NA	NA	NA	NA
	Industrial Well Water	NA		November 21, 2013		NA	NA	NA	NA	NA
	MRAA Well Water	NA		November 21, 2013		NA	NA	NA	NA	NA
	GP/ORW Water	NA		November 21, 2013		NA	NA	NA	NA	NA
	Cavern Water	NA		November 21, 2013		NA	NA	NA	NA	NA
	Discharge/Outfall Water	NA		November 21, 2013		NA	NA	NA	NA	NA
	Geoprobe Wells	NA		November 21, 2013		NA	NA	NA	NA	NA
<b>Grand Bayou Well 3A</b>										
Summary of Today's events										
Oxy 3A										
Daily Operations at 3A		7am		11/22/2013						
11/22/2013		822.19				Relief Well #1				
See ORW-01 Flare Spreadsheet										
11/22/2013										

## **Attachments**

## **Daily Action Summary**

**November 21, 2013**

### **Stationary Air Monitoring**

#### Sinkhole Perimeter Air Monitoring

- Bijet Mukherjee onsite from 07:30 to 08:20. Changed out the monitors between 07:47 and 08:04. Collected data from the monitoring database and forwarded to Jill Martin in the Baton Rouge office for processing.
- Eric Rucinski (onsite for neighborhood ORWs air monitoring) assisted in deployment of new monitoring units between 13:33 and 13:53. These new monitoring units are compatible with the monitoring system installed for the neighborhood ORWs air monitoring program. The former monitors were demobilized between 14:26 and 14:42.

NOTE: The monitoring location ORW-5a was relocated to ORW-5 in an effort to support new monitoring equipment being delivered early next week. The coordinates for ORW-5 are 30.00952, -91.14611. Additionally, a map of the sinkhole perimeter air monitors is attached.

- Britt Barnett of Code Red (monitor sub-contractor) onsite from 07:00 to 17:00. Assisted in battery change outs and maintenance of the monitoring equipment.

#### Neighborhood ORWs Air Monitoring

- Eric Rucinski onsite from 07:15 to 15:15. Changed out the monitors between 07:34 and 10:10. Collected data from the monitoring database and forwarded to Jill Martin in the Baton Rouge office for processing.
- Code Red (monitor sub-contractor) onsite for continuous 24/7 monitoring:
  - Chad Deshotel onsite from 0:00 to 06:00 and 18:00 to 24:00
  - Roxana Dubose of Code Red onsite from 06:00 to 18:00.

Technicians also assisted in battery change outs and maintenance of the monitoring equipment as necessary.

### **Residential Air Monitoring**

- Sage has been requested to suspend bimonthly residential air monitoring. Therefore, Sage will discontinue these activities. The last event was conducted on March 26, 2013.

### **Gas Seep Sampling**

- Not Scheduled

**Well Gas Sampling**

- Not Scheduled

**Under Slab Gas Sampling**

- Not Scheduled

**Air Indoor Monitoring**

- Not Scheduled

**Texas Brine - Belle Rose, Louisiana**  
**Hourly Air Monitoring Data**  
**Neighborhood Monitoring**

\*Time indicates start of time period (ex. 12:00:00 AM gives the time period 12:00:00 AM to 12:59:59 AM)

Date-Time *	Observation Relief Well -49 at the Well Head ORW-49-WH			Observation Relief Well - 49 in the Exclusion Zone ORW-49-S			Observation Relief Well - 50 in the Exclusion Zone ORW-50-S			Observation Relief Well - 50 in the Exclusion Zone ORW-50-S		
	H2S (ppm)	LEL (%)	O2 (%)	H2S (ppm)	LEL (%)	O2 (%)	H2S (ppm)	LEL (%)	O2 (%)	H2S (ppm)	LEL (%)	O2 (%)
11/21/2013 01:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 02:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 03:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 04:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 05:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 06:00:00 AM	0.0	0.0	20.9	0.0	0.0	20.9	0.0	0.0	20.9	0.0	0.0	20.9
11/21/2013 07:00:00 AM	0.0	0.0	20.9	0.0	0.0	20.9	0.0	0.0	20.9	0.0	0.0	20.9
11/21/2013 08:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 09:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 10:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 11:00:00 AM	0.0	0.0	21.0	Monitoring location demobilized at approximately 10:10 AM on 11/21/2013. Installation of ORW-49 is complete; thus, monitoring in the exclusion zone is no longer necessary.	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 12:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 01:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 02:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 03:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 04:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 05:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 06:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 07:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 08:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 09:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 10:00:00 PM	0.0	0.0	21.0		0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 11:00:00 PM	0.0	0.0	21.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	
11/22/2013 12:00:00 AM	0.0	0.0	21.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	

Notes:



Texas Brine - Belle Rose, Louisiana  
 Hourly Air Monitoring Data  
 Sinkhole Perimeter Monitoring

\*Time indicates start of time period (ex. 12:00:00 AM gives the time period 12:00:00 AM to 12:59:59 AM)

Date-Time *	Observation Relief Well -5					Observation Relief Well -5					Observation Relief Well -9					Observation Relief Well -11					South of OG3A-1					Onsite Trailers					
	ORW-5a					ORW-5					ORW-9					ORW-11a					Pad #9					TR-1					
	CO (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	SO2 (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	
11/21/2013 01:00:00 AM	0.0	0.0	0.0	0.0	21.3	Monitoring at ORW-5 began at approximately 01:43 PM on 11/21/2013	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.4	0.0	<1.0	0.0	0.0	20.9
11/21/2013 02:00:00 AM	0.0	0.0	0.0	0.0	21.3		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	21.4	0.0	<1.0	0.0	0.0	21.4	0.0	<1.0	0.0	0.0	20.9
11/21/2013 03:00:00 AM	0.0	0.0	0.0	0.0	21.3		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.4	<1.0	<1.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 04:00:00 AM	0.0	0.0	0.0	0.0	21.3		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.5	0.0	<1.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 05:00:00 AM	0.0	0.0	0.0	0.0	21.3		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	21.4	0.0	<1.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 06:00:00 AM	0.0	0.0	0.0	0.0	21.3		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.4	<1.0	<1.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 07:00:00 AM	0.0	0.0	0.0	0.0	21.3		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.4	<1.0	<1.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 08:00:00 AM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	1.5	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 09:00:00 AM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	1.8	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 10:00:00 AM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	1.6	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 11:00:00 AM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	1.1	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
11/21/2013 12:00:00 PM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
11/21/2013 01:00:00 PM	0.0	0.0	0.0	0.0	20.9		0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 02:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 03:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 04:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 05:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 06:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 07:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 08:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 09:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	
11/21/2013 10:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	
11/21/2013 11:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	
11/22/2013 12:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	

Notes:  
 The monitoring location ORW-5a was relocated to ORW-5 in an effort to support new monitoring equipment being delivered early next week.



## Sinkhole Monitor Locations

November 21, 2013

**Texas Brine - Belle Rose, Louisiana**  
**Hourly Air Monitoring Data**  
**Neighborhood Monitoring**

\*Time indicates start of time period (ex. 12:00:00 AM gives the time period 12:00:00 AM to 12:59:59 AM)

Date-Time *	Observation Relief Well -49 at the Well Head			Observation Relief Well - 49 in the Exclusion Zone			Observation Relief Well - 50 in the Exclusion Zone			Observation Relief Well - 50 in the Exclusion Zone			
	ORW-49-WH			ORW-49-S			ORW-50-S			ORW-50-S			
	H2S (ppm)	LEL (%)	O2 (%)	H2S (ppm)	LEL (%)	O2 (%)	H2S (ppm)	LEL (%)	O2 (%)	H2S (ppm)	LEL (%)	O2 (%)	
11/21/2013 05:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	
11/21/2013 06:00:00 AM	0.0	0.0	20.9	0.0	0.0	20.9	0.0	0.0	20.9	0.0	0.0	20.9	
11/21/2013 07:00:00 AM	0.0	0.0	20.9	0.0	0.0	20.9	0.0	0.0	20.9	0.0	0.0	20.9	
11/21/2013 08:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	
11/21/2013 09:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	
11/21/2013 10:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	
11/21/2013 11:00:00 AM	0.0	0.0	21.0	Monitoring location demobilized at approximately 10:10 AM on 11/21/2013. Installation of ORW-49 is complete; thus, monitoring in the exclusion zone is no longer necessary.	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 12:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 01:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 02:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 03:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 04:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 05:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 06:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 07:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 08:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 09:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 10:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/21/2013 11:00:00 PM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/22/2013 12:00:00 AM	0.0	0.0	21.0		0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
11/22/2013 01:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	
11/22/2013 02:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	
11/22/2013 03:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	
11/22/2013 04:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	
11/22/2013 05:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0	

Notes:

Texas Brine - Belle Rose, Louisiana  
Hourly Air Monitoring Data  
Sinkhole Perimeter Monitoring

\*Time indicates start of time period (ex. 12:00:00 AM gives the time period 12:00:00 AM to 12:59:59 AM)

Date-Time *	Observation Relief Well -5					Observation Relief Well -5					Observation Relief Well -9					Observation Relief Well -11					South of OG3A-1					Onsite Trailers					
	ORW-5a					ORW-5					ORW-9					ORW-11a					Pad #9					TR-1					
	CO (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	SO2 (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	Non-Methane VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	
11/21/2013 05:00:00 AM	0.0	0.0	0.0	0.0	21.3	Monitoring at ORW-5 began at approximately 01:43 PM on 11/21/2013	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.4	0.0	<1.0	0.0	0.0	20.9
11/21/2013 06:00:00 AM	0.0	0.0	0.0	0.0	21.3		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.4	<1.0	<1.0	0.0	0.0	20.9
11/21/2013 07:00:00 AM	0.0	0.0	0.0	0.0	21.3		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.4	<1.0	<1.0	0.0	0.0	20.9
11/21/2013 08:00:00 AM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	1.5	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 09:00:00 AM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	1.8	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 10:00:00 AM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	1.6	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
11/21/2013 11:00:00 AM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	1.1	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
11/21/2013 12:00:00 PM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
11/21/2013 01:00:00 PM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 02:00:00 PM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 03:00:00 PM	0.0	0.0	0.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 04:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 05:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9
11/21/2013 06:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 07:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 08:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 09:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 10:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/21/2013 11:00:00 PM	0.0	0.0	<1.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/22/2013 12:00:00 AM	0.0	0.0	<1.0	0.0	20.9		0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9
11/22/2013 01:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	
11/22/2013 02:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	
11/22/2013 03:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	
11/22/2013 04:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	
11/22/2013 05:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	

Notes:  
The monitoring location ORW-5a was relocated to ORW-5 in an effort to support new monitoring equipment being delivered early next week.

**RESPEC Consulting & Services**

Texas Brine, L.L.C.

Assumption Parish, Louisiana

Daily Field Report

Report By: David Gnage

Date: 11/21/13

Company: RESPEC

Job #: 02241

<b>Personnel</b>	<b>Company</b>	<b>Job Title</b>

**Time Onsite:** Start Time: NA End Time: NA

**DAILY ACTIVITY:**

No Field Work Conducted. RESPEC was not on-site.

**Instrumentation Program:**

No Work Conducted.

**Other Programs:**

No Work Conducted.

**PROPOSED SCHEDULE:**

**Instrumentation Program:**

No Work Currently Scheduled.

**Other Programs:**

Installation of a passive vent well at bubble site #56 is scheduled for the week of December 2<sup>nd</sup>.

Initials: DJG

## **ME&A Daily Action Summary**

November 21, 2013

### **Subsidence Survey:**

- No Work Done

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### **Sinkhole Perimeter/Hydrographic Survey:**

- No Work Done

### **Support Sinkhole Cleanup**

- No Work Done

### **Misc. Survey Work**

- Arrived @ 8:15 am
- Surveyed Containment Berm Settlement Plates
- Surveyed Temporary Benchmarks
- Departed @ 12:00 am