

# Texas Brine Company, LLC 1301 Highway 70

Belle Rose, LA 70341

Phone: 985-369-6657 Fax: 985-369-7873



December 12, 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 <a href="mailto:conservationorder@la.gov">conservationorder@la.gov</a>, ref. "Emergency Declaration-Texas Brine Company LLC-9/25/2012.

Bruce E. Martin

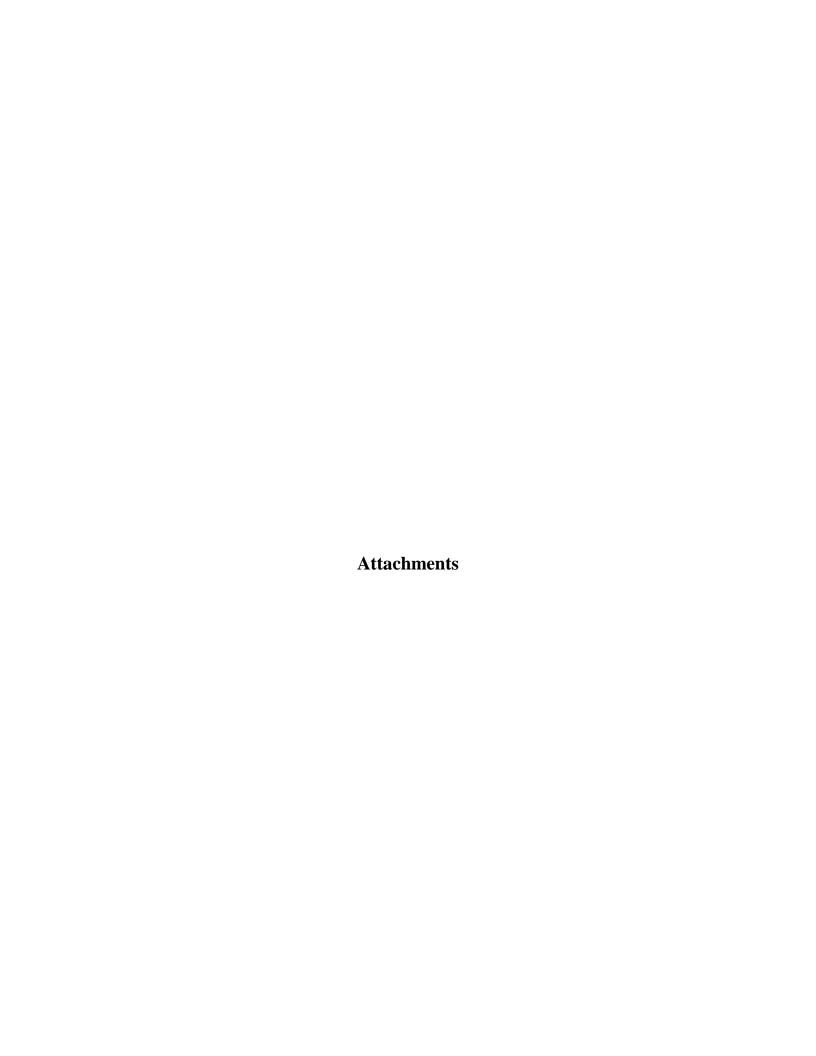
Vice President, Operations

Bana EMart

Texas Brine Company, LLC



			TBC Oxy Gran	nd Bayou Data Manage	ment-Enviro	nmental						
Contractor	Responsibilities	Coll	ected By	Date Collect			Results from Lab	Laboratory	Method	Date to Ag	encies	
Sage	Stationary Air Monitoring	Deshotel (Code 18:00 - 24:00, Roxa	Bijeet Mukherjee - 07:30 - 09:45, Chad Deshotel (Code Red) - 00:00 - 06:00; 18:00 - 24:00, Roxana Dubose (Code Red) - 06:00 - 18:00		3	NA	NA	NA	NA	12/12/2013		
	Residential Air Monitoring	bimonthly reside Therefore, Sage	equested to suspend ential air monitoring. will discontinue these tivities.	NA		NA	NA	NA	NA	NA		
	Gas Seep Sampling		k performed	12/11/201	3	NA	NA	NA	NA	NA		
	Well Gas Sampling	No wor	k performed	12/11/201		NA	NA	NA	NA	NA		
	Under Slab Gas Sampling	No wor	k performed	12/11/201		NA	NA	NA	NA	NA		
	Indoor Air Monitoring	No wor	k performed	12/11/201	3	NA	NA	NA	NA	NA		
Respec	Inclinometers/Tilt Meters/Transducers	12/11/2013	No work Conducted	NA	NA	NA	NA		NA	NA	NA	
	InSAR Reflector Installations	12/11/2013	No work Conducted	NA	NA	NA	NA		NA	NA	NA	
	Subsidence Survey-Fenstermaker	12/11/2013	No work Conducted	NA	NA	NA	NA		NA	NA	NA	
	Shallow Geophone Installation	12/11/2013	No work Conducted	NA	NA	NA	NA		NA	NA	NA	
	Deep Geophone Installation	12/11/2013	No work Conducted	NA	NA	NA	NA		NA	NA	NA	
	Amendment #3, Directive #2	12/11/2013	No work Conducted	NA	NA	NA	NA		NA	NA	NA	
	Expansion of geoprobe gas sampling locations	12/11/2013	No work Conducted	NA	NA	NA	NA		NA	NA	NA	
	DPVE	12/11/2013	No work Conducted	NA NA	NA NA	NA NA	NA NA		NA NA	NA NA	NA	
	Abandon Casing Survey	12/11/2013	No work Conducted	NA	NA	NA	NA		NA	NA	NA	
	Passive Vent Well at NSDBS56	12/11/2013	No work Conducted	NA	NA	NA	NA		NA	NA	NA	
	MIHPT	12/11/2013	No work Conducted	NA	NA	NA	NA		NA	NA	NA	
Miller	Weekly Stability Survey		NA	December 12,	2013	NA	NA	NA	NA	NA	_	
	Misc. Survey Work		NA	December 12,		NA	NA	NA	NA	NA		
	Sinkhole Hydro/Perimeter Survey	NA		December 12, 2013		NA	NA	NA	NA	NA NA		
Pisani	Surface Water		NA	NA NA		NA	NA	NA	NA NA	NA		
	Sinkhole Industrial Well Water		NA NA	NA NA		NA NA	NA NA	NA NA	NA NA	NA NA		
	MRAA Well Water GP/ORW Water		PMR NA	12/10/201 NA	3	12/11/2013 NA	NA NA	GCAL NA	Chloride, Bromide and Sulfate (Inorganic Anions) – SW-846 9056A, Conductivity – SM 2510B, TDS – SM 2540C, Cations/metals – SW-846 6010B, Carbonate & Bicarbonate Alkalinity – SM 2320B, BTEX – SW-846 8260B, TPH Fractions – TX 1006/LA 1006, and Dissolved Gases - RSK-175, PAH / Chloride, Bromide and Sulfate (Inorganic Anions) – SW-846 9056A, Conductivity – SM 2510B, TDS – SM 2540C, Cations/metals – SW-846 6010B, Carbonate & Bicarbonate Alkalinity – SM 2320B, BTEX – SW-846 8260B, TPH Fractions – TX 1006/LA 1006, and Dissolved Gases - RSK-175, PAH	NA NA		
	Cavern Water		NA	NA		NA	NA	NA	NA	NA		
	Discharge/Outfall Water		NA	NA		NA	NA	NA	NA	NA		
	Geoprobe Wells		NA	NA		NA	NA	NA	NA	NA		
	Della Consentions at 24			Grand Bayou Well	3A	C	T- dd					
	Daily Operations at 3A	Summary of Today's events Oxy 3A										
	12/12/2013	7am 921.8		12/12/201	3		f Well #1					
	12/12/2013	See ORW-01 Flare Spreadsheet										



#### **Daily Action Summary**

#### **December 11, 2013**

#### Sinkhole Perimeter Air Monitoring and Neighborhood ORWs Air Monitoring

- Bijeet Mukherjee onsite from 07:30 09:45. Conducted monitor change out at 08:30. Collected data from the monitoring database and forwarded to Steven Shaughnessy in the Baton Rouge office for processing.
- Code Red (monitor sub-contractor) onsite for continuous 24/7 monitoring:
  - o Chad Deshotel onsite from 0:00 to 06:00; 18:00 to 24:00
  - o Roxana Dubose onsite from 06:00 to 18:00

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

<u>NOTE</u>: The sinkhole monitors are now housed in solar-powered weather boxes; thus, daily monitor change-out not necessary for Pad 9, TR-1a, ORW-11a, ORW-9a, and ORW-5. Neighborhood monitoring locations ORW-49-WH and ORW-50-WH are now equipped with electrical power; thus daily monitor change-out is additionally not necessary for these locations. All monitors will continue to be calibrated and serviced as necessary.

RTU-6, located at ORW-50-WH, recorded elevated LEL readings from approximately 15:30 to 15:40. The maximum instantaneous reading recorded was 35% LEL. Maintenance was being conducted on the well at the time of the elevated readings.

#### **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)

	Observation	Relief Well -49 at th	ne Well Head	Observation	Relief Well - 50 at	the Well Head	P	assive Vent Well -5	56
		ORW-49-WH			ORW-50-WH			PVW-BS-56	
Date-Time *	H2S (ppm)	LEL (%)	O2 (%)	H2S (ppm)	LEL (%)	O2 (%)	H2S (ppm)	LEL (%)	O2 (%)
12/11/2013 01:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 02:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 03:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 04:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 05:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 06:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 07:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 08:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
12/11/2013 09:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
12/11/2013 10:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 11:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 12:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 01:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 02:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 03:00:00 PM	0.0	0.0	21.0	0.0	4.3	21.0	0.0	0.0	20.9
12/11/2013 04:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 05:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 06:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 07:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 08:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 09:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 10:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 11:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/12/2013 12:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9

#### Notes:

RTU-6, located at ORW-50-WH, recorded elevated LEL readings from approximately 03:30 PM to 03:40 PM. The maximum instantaneous reading recorded was 35% LEL. Maintenance was being conducted on the well at the time of the elevated readings.

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

		Observation Relief Well -5					Observ	ation Relief	Well - 9			Observ	ation Relief	Vell -11		South of OG3A-1					Onsite Trailers				
			ORW-5					ORW-9a					ORW-11a			Pad #9				TR-1a					
		Non-					Non-					Non-					Non-					Non-			
		Methane					Methane					Methane				N.	Iethane					Methane			
Date-Time *	CO (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	SO2 (ppm) VO	C (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)
12/11/2013 01:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.7	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 02:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 03:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 04:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 05:00:00 AM	<1.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.6	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 06:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.6	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 07:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.7	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 08:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.7	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 09:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 10:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 11:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 12:00:00 PM	0.0	0.0	0.0	0.0	20.9	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 01:00:00 PM	0.0	0.0	0.0	0.0	20.9	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 02:00:00 PM	0.0	0.0	0.0	0.0	20.9	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 03:00:00 PM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 04:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.2	0.0	0.0	0.0	0.0	20.9
12/11/2013 05:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	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	21.0	0.0	0.0	0.0	0.0	20.9
12/11/2013 06:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	<1.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.1	0.0	0.0	0.0	0.0	20.9
12/11/2013 07:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.1	0.0	0.0	0.0	0.0	20.9
12/11/2013 08:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	0.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 09:00:00 PM	0.0	0.0	0.0	0.0	21.1	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 10:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	0.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 11:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/12/2013 12:00:00 AM	0.0	0.0	0.0	0.0	21.2	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9

Notes:

#### 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)

	Observation	Relief Well -49 at t	he Well Head	Observation	Relief Well - 50 at	the Well Head	F	Passive Vent Well -5	56
		ORW-49-WH			ORW-50-WH			PVW-BS-56	
Date-Time *	H2S (ppm)	LEL (%)	O2 (%)	H2S (ppm)	LEL (%)	O2 (%)	H2S (ppm)	LEL (%)	O2 (%)
12/11/2013 05:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 06:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 07:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 08:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
12/11/2013 09:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	21.0
12/11/2013 10:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 11:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 12:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 01:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 02:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 03:00:00 PM	0.0	0.0	21.0	0.0	4.3	21.0	0.0	0.0	20.9
12/11/2013 04:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 05:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 06:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 07:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 08:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 09:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 10:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/11/2013 11:00:00 PM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/12/2013 12:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/12/2013 01:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/12/2013 02:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/12/2013 03:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/12/2013 04:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9
12/12/2013 05:00:00 AM	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0	20.9

#### Notes:

RTU-6, located at ORW-50-WH, recorded elevated LEL readings from approximately 03:30 PM to 03:40 PM. The maximum instantaneous reading recorded was 35% LEL. Maintenance was being conducted on the well at the time of the elevated readings.

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

		Observa	ation Relief	Well -5			Observ	ation Relief	Well - 9			Observ	ation Relief	Well -11			So	uth of OG3A	<b>-</b> 1			C	Insite Trailer	S	
			ORW-5					ORW-9a					ORW-11a			Pad #9					TR-1a				
		Non-					Non-					Non-					Non-				1	Non-			
		Methane					Methane					Methane					Methane				Me	ethane			
Date-Time *	CO (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	SO2 (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm) VO	C (ppm)	H2S (ppm)	LEL (%)	O2 (%)
12/11/2013 05:00:00 AM	<1.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.6	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 06:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.6	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 07:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.7	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 08:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.7	<1.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 09:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 10:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 11:00:00 AM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 12:00:00 PM	0.0	0.0	0.0	0.0	20.9	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 01:00:00 PM	0.0	0.0	0.0	0.0	20.9	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 02:00:00 PM	0.0	0.0	0.0	0.0	20.9	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 03:00:00 PM	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 04:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.2	0.0	0.0	0.0	0.0	20.9
12/11/2013 05:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	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	21.0	0.0	0.0	0.0	0.0	20.9
12/11/2013 06:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	<1.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.1	0.0	0.0	0.0	0.0	20.9
12/11/2013 07:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	0.0	0.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	21.1	0.0	0.0	0.0	0.0	20.9
12/11/2013 08:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	0.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 09:00:00 PM	0.0	0.0	0.0	0.0	21.1	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/11/2013 10:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	0.0	0.0	0.0	20.9	<1.0	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	20.9
12/11/2013 11:00:00 PM	0.0	0.0	0.0	0.0	21.2	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/12/2013 12:00:00 AM	0.0	0.0	0.0	0.0	21.2	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/12/2013 01:00:00 AM	0.0	0.0	0.0	0.0	21.2	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/12/2013 02:00:00 AM	0.0	0.0	0.0	0.0	21.2	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/12/2013 03:00:00 AM	0.0	0.0	0.0	0.0	21.2	<1.0	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	20.9	0.0	0.0	0.0	0.0	20.9
12/12/2013 04:00:00 AM	0.0	0.0	0.0	0.0	21.2	<1.0	<1.0	0.0	0.0	20.9	<1.0	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	20.9
12/12/2013 05:00:00 AM	0.0	0.0	0.0	0.0	21.2	<1.0	<1.0	0.0	0.0	20.9	<1.0	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	20.9

Notes:

### **RESPEC Consulting & Services**

Report By: Day Company: RE	_					Oate: <u>12</u> bb #:	
Personn	nel	Con	mpany		Job Ti	tle	
Time Onsite:	Start Time:	NA	End Time:	NA			
DAILY ACTIVITY	Y:						
No Field Work Con	ducted. RESPE	EC was not on-si	ite.				
Instrumentation P							
Other Programs: No Work Conducted	d.						
PROPOSED SCH	EDULE:						
Instrumentation P No Work is Current							
Other Programs: No Work is Current	ly Planned						
					Initials:	DJG	

# Michael Pisani & Associates

Company:	MP&A				Work Order #	80-05	
Company.	MF&A				WOIK OIDEI #	80-03	
Health and S	Safety Meeting y	YES		NO			
Weather:	40F fog, cold, overcast					-	
	Personnel		Company		Job Title		
Patrick Ritcl	nie	MPA	1 7		Environmental Scientist		
Eric Kocken		MPA			Environmental Scientist		
					-		
G., Y	•,•	0.00		17.00			
Site Acti	vities: Start Time	9:00	End Time	17:00			
<b>.</b>	0 1						
<u>Equipment</u>	On-site:						
Daily Activi	ity:						
	ratory samples from MRA	AA water we	ells				
Observe, vid	leo, measure bubble sites						
Collect labor	ratory sample from Outfa	11 #2					
Fetimated t	ime of completion:						
On-going	inc or completion.						
on going							
Proposed so	chedule:						
	ssure and water level at T	TBC Geopro	be locations	(2x/month)	)		
_	ratory samples from MRA	_					
	leo, measure bubble sites						
Collect labor	ratory samples from surfa	ce water (m	onthly)				
Collect sinkl	hole profile and laborator	y samples (r	nonthly)				
	situ monitoring of industr						
		water wells	and MRAA	wells and d	lownload transducer data		
	ime of completion:						
On-going					Initiale	DMD	
					Initiala	DATD	

# Michael Pisani & Associates

Report By:	Patrick Ritchie				12/11/2013
Company:	MP&A			Work Order #	80-05
Health and S	Safety Meeting V	YES	NO NO		
Weather:	48F Clear, windy, cold				
	Personnel		Company	Job Title	
Patrick Ritch	hie	MPA	1 7	Environmental Scientist	
Eric Kocken	1	MPA		Environmental Scientist	
					<u> </u>
Site Acti	vities: Start Time	7:30 I	End Time 15:30		
				_	
Equipment	On-site:				
Airboat					
Daily Activ	itv:				
	ratory samples from MRA	AA water well	s		
	leo, measure bubble sites				
	,				
Estimated t	ime of completion:				
On-going	me or completion.				
on going					
Proposed so	hadula.				
	ssure and water level at T	TRC Geoprobe	a locations (2x/month	1)	
	ratory samples from MRA				
	leo, measure bubble sites		mai water wens (mon	uny)	
	ratory samples from surfa	•	athly)		
	ratory samples from surfa hole profile and laborator				
	situ monitoring of industr				
				download transducer data	
		water werrs a	mu wikaa wens and	download transducer data	
On-going	ime of completion:				
On-going				Initials:	PMR
				muais.	1 1/11/

# Michael Pisani & Associates

Company:	MP&A			Work Order #	80-05
			_	•	
Health and S	afety Meeting v	YES	NO		
Weather:	55F Partly cloudy				
	Personnel		Company	Job Title	
Eric Kocken		MPA	, , ,	Environmental Scientist	
				-	
		-			
Site Acti	vities: Start Time	9:00	End Time 15:00	-	
Equipment	On-site:				
Equipment	<del>On-site.</del>				
Daily Activi		TDC C	1 1 2		
	ssure and water level at T ssure and water level at C				
F					
	ime of completion:				
On-going					
Proposed sc	hedule:				
Measure pre	ssure and water level at T	_			
	ratory samples from MRA		ustrial water wells (mont	thly)	
	eo, measure bubble sites ratory samples from surfa		nonthly)		
	nole profile and laborator		•		
	situ monitoring of industri	_			
				download transducer data	
	ime of completion:				
On-going				Initiale	DMD