# Petroglyph Operating Company February 2010 Monthly Report

Covering the period of 1/23/2010 through 2/24/2010

Prepared for Colorado Oil and Gas Conservation Commission

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Prepared by

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# Petroglyph Operating Company, Inc. Monthly Report – February 2010

Petroglyph Operating Company, Inc. (Petroglyph) is submitting this monthly report for the activities that have occurred at their Little Creek Field in the Raton Basin from the end of the last reporting period through February 24, 2010. Along with this monthly report, Petroglyph is submitting an electronic copy of all data including Microsoft Excel spreadsheets from which the attached summaries and graphs were created.

# 1.0 Phase I Remediation System

The Phase I remediation system associated with the Methane Investigation, Monitoring and Mitigation Program (MIMMP) has been operational for approximately fourteen months beginning on December 8, 2008. The system was started with pumping from Recovery 1 Kittleson and Recovery 3 PEI. Recovery 1 gas production has dropped from approximately 25.7 MCFD at the start of mitigation to between 4.5 and 5 MCFD through most of this reporting period. Recovery 1 dropped below 4.5 on 1/28 (1.67 MCFD) and recovered by 1/30 and also on 2/2 through 2/4 and 2/9.

Recovery 3 gas flows were measured at approximately 0.75 MCFD at the start of mitigation and increased to approximately 1 MCFD and remained around 1 until late February 2009 and then began a slow and steady decline. During this reporting period the gas flows started the period at 0.0849 MCFD on January 15, 2010 and ended the period at 0.1635 MCF on February 21, 2010. With the exception of the first reading reported for the period, most of the readings ranged between 0.14 and 0.17 MCFD. Recovery 4 has shown the most variability ranging between 0.9 MCFD and 0 until mid April 2009 when the readings were consistently under 0.001 MCFD. Readings at Recovery 4 showed an increase beginning in late July/early August 2009 and have been a bit variable since that time. During this reporting period the readings for Recovery 4 showed a low reading at the beginning of the reporting period of 0.1574 MCFD with most of the remaining readings between 0.23 and 0.27 MCFD. Gas flows at Recovery 5 increased from 6.27 MCFD at the start of the period to 19.9 MCFD on February 11, 2010 and decreased to 10.9 MCFD at the end of the period.

The average pumping rate for Recovery 1 was 19.2 gpm during the reporting period. The average pumping rate at Recovery 3 has been 4 gpm intermittently (or averaging about 1 gpm over a day's time) (Table 1). Recovery 4 is not functioning properly as explained in previous monthly reports and has not been pumped since early April 2009. Recovery 5 pumped at an average of 6.7 gpm. Recovery 5 was down for a pump change from January 27<sup>th</sup> through February 3<sup>rd</sup>.

Gas flow in POCI 55 monitoring well and the Recovery wells is shown graphically in Attachment 1. The POCI 55 well has not shown any gas flows since April 2008 shortly after passive venting of mitigation wells began.

Injection started in Injection 01 and 04 on December 9, 2008 and Injection 02, 03, 05, 06 and 07 on December 10, 2008 (Table 1). Injection rates vary for the individual injection wells and range from 1.2 to 8.5 during this reporting period with several wells showing an increase in injection rates and several wells showing a decrease in injection rates. The two wells on the Rohr property (Injection 04 and 05) have accepted the most water. Injection 08 Haeffner has not accepted water very well. All of the approximately 12.4 million gallons of water that have been recovered have been re-injected following methane off gassing. As noted on Table 1, no injection occurred at Injection 03 from January 22<sup>nd</sup> to February 8<sup>th</sup> due to plugged tubing. This Injection well normally accepts an average of 1.1 to 1.3 gpm.

Petroglyph has an extensive monitoring program for domestic water wells surrounding the remediation system for changes in both water levels and in gas detected at the wellhead. In addition, Petroglyph monitors several of their production wells for changes in water level. All of these results are discussed in subsequent sections of this report. None of the monitoring has ever shown results that can be directly attributable to the remediation system pumping.

# 2.0 Phase II Remediation System

Petroglyph submitted the Phase II Methane Remediation System Class V Underground Injection Control (UIC) permit application to Region 8 of the EPA on January 7, 2009. The draft permit has been issued for public comment and a public meeting was held in Walsenburg on August 10<sup>th</sup>. The EPA is working on responding to public comments received during the public comment period. The time frame for completion of the EPA responses is expected to be in February of 2010. A Colorado Division of Water Resources application for the Phase II system was submitted on February 18, 2009 and is under review.

During this reporting period the COGCC approved Petroglyph's request to move to Phase II contingent upon receipt of other required permits from the EPA and Division of Water Resources.

# **3.0** Ongoing Investigation

# Aquifer Characterization

Petroglyph continues to evaluate data collected through the remediation system operation and ongoing monitoring to refine the aquifer characterization.

# Gas Isotope, Dissolved Methane and Water Quality Sampling

The attached data disk includes the results from gas analyses received during this reporting period for six samples (Injection 5 Rohr, Recovery 1 Kittleson and Recovery 3 PEI, Recovery 5 Masters, Palmer and Geiselbrecht). The results for all dissolved methane sampling available to date, including the most recent sample results, are shown in Table 2 with those results received since the last reporting period highlighted in yellow.

# Methane Source Investigation

Petroglyph continues to evaluate the source of methane both in the domestic wells in the vicinity of the production wells and closer to the outcrop. Handheld monitoring of the BLM wellhead continues; to show levels of methane that exceed 100% LEL and 70% CH4 by volume and little to no O2%. The Haupt #1 well drilled closer to the outcrop and handheld measurements around this well have historically shown >100% lower explosive limit, 3 to 11% CH<sub>4</sub> by volume and low  $O_2$ % volume. The first measurements at this well during the reporting period on December 15, 2009 showed no methane while the last measurement showed a return to the higher methane levels. Any additional information on the ongoing investigation will be included in the monthly reports and/or in separate reporting as the data is collected and evaluated.

# 4.0 Monitoring

# Down-hole Pressure and Fluid Level Monitoring

# Private Wells

Petroglyph has installed continuous pressure monitoring for fluid levels in water wells at Barrett, Bergman and Coleman located within one mile of the remediation system; Meyer located in the River Ridge Ranch Subdivision but more than one mile from the remediation system; Bruington located in City Ranch Subdivision; and Evenden and Garza-Vela located in the Silver Spurs Ranch Subdivision.

Information from these wells is downloaded monthly by Petroglyph, graphed, and included in electronic data disk with this monthly report. The POCI 55 Monitoring Well located near the remediation system also has a pressure gage. Attachment 2 shows graphically the changes in pressure for each of these wells. Attachment 4 is a combined graph showing the water levels in both the domestic wells monitored and Petroglyph production wells.

Water level elevations in the POCI 55 well remained at approximately 6229 feet through the monitoring period. Barrett pressure showed a slight decrease resulting in a decrease in water levels of approximately two feet from 6268 to 6266 feet from the beginning to the end of the reporting period. Bergman pressure and associated water levels increased slightly from 6354 to 6355 feet at the end of the available data. The Bergman data ends January 23<sup>rd</sup> due to a gage failure. The gage will be repaired or replaced during the next reporting period.

The Bruington well continues to show an upward trend in water levels with a rise of approximately 5 feet during the reporting period from 6066 to 6071 feet. Coleman remained at approximately the same pressure and water level during the reporting period with a water level elevation of approximately 6232 feet. Garza Vela also remained approximately the same at pressure and associated water level elevation of 6294 feet from the beginning to the end of the reporting period. The Meyer well water elevations varied around 6110 to 6111 feet during the reporting period. The Evenden transducer has not been working since January 9<sup>th</sup> and will be repaired or replaced. No data is available for Evenden during this reporting period.

# Petroglyph Production Wells

Fifteen Petroglyph production wells are currently monitored for fluid level and casing pressure: Lively 02-02, Lively 02-12, Lively 03-01, Lively 03-10, Lively 03-12, Lively 10-04, Rohr 04-10, Rohr 04-14, Rohr 08-01, Rohr 09-04, Rohr 09-05, Rohr 09-10, State 36-02, State 36-05, State 36-11. Two monitoring wells are also monitored continuously for water levels (Lively 03-03, and Lively 10-12). The monitoring occurs in the formation into which the wells are completed, the Vermejo Formation. Changes in fluid levels in Petroglyph's production wells are shown graphically in Attachment 3.

Since Petroglyph is no longer pumping these wells to draw down water levels, pressure is equalizing within the Vermejo coals. Consequently, water levels have risen in all wells as would be expected, although the rate of rise is leveling off. Eight of the wells show little to no overall water level elevation change throughout the period including Lively 02-02, Lively 02-12, Lively 03-01, Lively 03-10, Lively 03-12, Rohr 04-10, Rohr 09-10, and State 36-11. Four wells (Rohr 09-05, Rohr 09-04, Rohr 08-10, and Rohr 04-14) showed water level elevation rises of approximately five feet or less. The remaining wells showed a bit more variation in water levels through the period. The State 36-05 well showed variations between 6076 and 6092 and the ended the period at 6107. The State 36-02 increased in water level from 6085 at the beginning of the period to 6116 at the end of the period. Lively 10-04 showed water level fluctuations between 6133 and 6163 during the reporting period.

# Comparison of Production Well and Private Well Data

Attachment 4 compares the water elevations for certain Petroglyph production wells and the private wells which are measured and discussed previously. As shown in Attachment 4 the majority of the private wells have water levels significantly higher in elevation than the production wells. Production well water levels showed a large rise after pumping ceased (250-300 feet); however domestic well water levels have remained relatively constant to decreasing during the same period indicating a lack of connection between the production wells in the Vermejo Formation and domestic wells in the Poison Canyon Formation. Attachment 4 also includes a table which shows the completion interval, location and well status.

# Gas Flow Monitoring In Domestic Wells

Gas flow monitors have been installed by Petroglyph at the Angely, Bounds, Bruington, Coleman, and Smith wells. All of these wells except for Bruington and Bounds lie within one mile of the remediation system. Continuous gas flow monitoring occurs at Coleman and Smith, while gas flow is spot monitored with a gage and orifice tester at Angely, Bounds, and Bruington. Gas pressure at the Bounds and Angely wells is currently monitored by COGCC or their consultant; however the data, when available, is presented in this report.

Attachment 5 includes graphs representing gas flow measurements from Bruington, Coleman, Angely, Bounds and Smith. The Bruington and Smith wells are not showing any gas. Note that Bruington has not been monitored since September 17<sup>th</sup>. The water

level recovery of the Bruington well precludes any gas flow. Gas flow reporting will resume when gas flows resume. Gas concentrations at the wellhead are still monitored monthly and reported. The Coleman well only shows gas when the well is initially pumped. The well was not pumped during the reporting period and no gas flows are included for this reporting period. The Bounds well is showing 0.024 MCFD which indicates a continuing drop in methane levels for this well.

A drop in gas flow in the domestic wells appears to have occurred in correlation with the drilling of remediation system wells and venting of gas through these wells. This would indicate that the remediation system has been correctly located to remediate the area of largest gas concentration in the domestic wells.

#### Bi-Weekly and Monthly Water Well Monitoring

Petroglyph has monitored for methane gas levels near 87 wellheads in the vicinity of the site. Measurements are taken near the wellhead, at the well vent and in some cases are also taken at the cistern or a second wellhead. No new wellheads were added during the reporting period. The Stetler well is no longer being sampled at the request of the homeowner and will be removed from the future lists dropping the total number of wells monitored to 86.

Table 3 shows all of the wellheads that are currently being sampled, the sampling start date, the date of the last sample, the number of samples since the last reporting period and a description of the sampling results and any changes from the previous reporting period. A column that discusses the historical readings for each site is included on the table. This column was last updated with the November 2009 Monthly Report and will be updated with the next monthly report.

Of the 86 wellheads, 4 were not sampled during this reporting period. Sampling may vary during any one reporting period due to a variety of reasons. During this reporting period 61 wellheads were sampled once and 21 wellheads were sampled twice.

As shown on Table 3, the comparison of monitoring results for the 82 wellheads sampled during this period with previous results showed that overall gas levels at 48 wellheads had no change from the previous monitoring period measurements and no detectable methane while 4 wellheads had no change and detectable methane levels. Changes in % LEL, % by volume CH4, and % volume  $O_2$  were evaluated to determine if the area around the wellheads was showing an indication of increasing or decreasing methane gas content. Of the remaining 30 wellheads, 22 showed decreases in methane with 11 of these decreasing to no detectable methane and with 4 of these only slight decreases and the rest showing material decreases. 8 wellheads showed increases with 2 of those wellheads showing a slight increase and the remainder showing moderate to material increases. It should be noted that all of the wells with detectable methane have shown methane in past measurements. Those wells which show material increases or decreases in this reporting period are those wells which have historically shown wide swings in methane levels from measurement to measurement. The data as presented do not represent significant changes in any well based on review of current and past measurements.

Petroglyph compared those wells showing detectable methane or changes in methane monitored during the reporting period with wells known to have been drilled into the coals within the Raton or Vermejo Formations and lying within 1-1.25 miles of the outcrop. Of the 24 wells showing detectable methane, 14 are known to have been drilled into the Raton/Vermejo Formations or deeper based on well depths in well logs available from the State Engineer. Of the remaining 10 wells, well drilling and completion information has not yet been researched for 3 wells and the remaining 7 wells are drilled into the Poison Canyon all located within or in close proximity to the remediation system.

The breakdown by subdivision or area as on Table 3 is as follows:

# Within 1 Mile of Remediation System

- Gas near 25 wellheads routinely monitored
- 1 wellhead was not sampled during this reporting period
- 15 wellheads showed no change and no detectable methane gas
- 3 wellheads showed no change with detectable methane with one of those being only a very low level of methane
- 4 wellheads showed decreased methane with one wellhead showing only a slight decrease and three wellheads showing a material decrease and one of those decreasing to no detectable levels of methane
- 2 wellheads showed increased methane levels with one wellhead showing only a very slight increase and one wellhead showing a higher but not material increase
- Of the 8 wellheads showing detectable methane 5 wells are completed in the Poison Canyon Formation, 2 wells are completed in the Raton/Vermejo/Trinidad and completion information is not known for one well.

# **River Ridge Ranch Subdivision and Vicinity Outside of One Mile**

- Gas near 21 wellheads routinely monitored
- 2 wellheads not sampled during this reporting period
- 17 wellheads showed no change and no detectable methane gas
- 2 wellheads showed a slight decrease in methane levels
- Of the 2 wellheads showing detectable methane one is know to be drilled into the Raton/Vermejo with the other well completed in the Poison Canyon.

# City Ranch and Other Properties

- Gas near 15 wellheads routinely monitored
- 1 wellhead was not sampled during the reporting period
- 9 wellheads showed no change and no detectable methane gas
- 1 wellhead showed no change and detectable methane

- 3 wellheads showed an increase in methane levels all of the increases occurring in wells which have historically shown wide swings in methane levels
- 1 wellhead showed material decrease in methane levels
- Of the 5 wellheads showing detectable methane, 4 are known to be drilled into the Raton/Vermejo. Completion information for the other well is not known. All wells lie close to the outcrop of the Raton/Vermejo or mined areas (within 1 to 1.5 miles).

# Silver Spurs Ranch

- Gas near 24 wellheads routinely monitored
- 7 wellheads showed no change and no detectable methane
- 15 wellheads showed a decrease in methane levels with one wellhead showing a slight decrease, 9 showing a decrease to no detectable methane and the remaining 5 wellheads showing material decreases
- 2 wellheads showed an increase in methane levels with one showing a slight increase and one showing a moderate increase
- Of the 9 wellheads showing detectable methane, 7 are known to be drilled into the Raton/Vermejo or deeper. Completion information for the remaining 2 wells is unknown; however all wells lie within 1.25 miles of the outcrop.

#### **Black Hawk Ranch**

• The domestic well which is monitored at Black Hawk Ranch (Goza) showed a decrease to no detectable methane

Table 4 shows the current monitoring schedule including which wells are monitored biweekly and which wells are monitored monthly or at a different frequency. The schedule has been updated to include the most recently approved monitoring schedule.

Attachment 6 includes charts of gas monitoring of eighteen wells near the mitigation system. The wells being monitored have not indicated a direct response to the remediation pumping and injection. Since Masters #2 has been converted to a recovery well it is no longer appropriate to include this well in these charts and it has been removed. Houghtling, Bergman and Smith showed a decrease in methane at the end of the reporting period. Barrett showed an increase and Golden Cycle has shown a gradual increase in CH4% volume over the last several months. Other wellhead readings have remained consistent with previous measurements.

#### Hand Held Measurements

Petroglyph conducts periodic ground surveys using a hand held methane detector at locations where gas has previously been detected, at locations where a property owner requests such a survey or at locations where previous surveys such as the helicopter survey have detected gas seepage. These surveys are conducted based on need or urgency

so can range from several times a week to a one time survey based on concerns from a property owner. No handheld surveys were collected during the reporting period.

# 5.0 Mitigation

# Methane Alarms

No activity occurred during the reporting period related to maintaining methane alarms or responding to any methane alarms. There are currently a total of 15 homes with alarm systems provided by Petroglyph. No alarms have ever been triggered by the presence of methane.

# Water Supply

Petroglyph is currently providing water to 16 homes. Table 5 provides a list of the homes currently receiving water. Water is delivered as needed and can vary from month to month due to residential water use and whether or not the homes are occupied. No new homes were added to the list during this reporting period.

# Public Outreach

Craig Saldin of Petroglyph attended a River Ridge Ranch Board of Managers meeting on February 13<sup>th</sup>. No additional public outreach activities occurred during the reporting period.

# Health and Safety/Emergency Planning

No changes to Petroglyph's health, safety and emergency planning occurred during the reporting period.

# 6.0 Schedule

The following is the currently anticipated schedule for Phase I and Phase II of the Methane Investigation Monitoring and Mitigation Program.

- Continued pumping and injection of the Phase I system with ongoing monitoring to evaluate the response in surrounding wells.
- EPA continued review of Phase II UIC Permit. There is a 30 day waiting period prior to the permit becoming effective.
- Routine bi-weekly and monthly sampling will continue with new sampling sites added as needed. Sampling will be adjusted based on the monitoring results in accordance with the Petroglyph Monitoring and Response Plan submitted to the COGCC on April 7, 2008 and the subsequent approved reduction letter dated January 27, 2009 and approved February 10, 2009.
- Hand held seep monitoring will continue as needed.

Table 1: Recovery and Injection Rates associated with Phase I MIMMP         (as of 2/22/2010)								
Well Number	Total Depth (ft)	PBTD	Injection Tubing Depth	Start-up Date	Average Injection Rate (gpm)	Water Totals (gal)		Notes
								Increased average injection rate from
Injection 01 Pascual	600	526	458	12/9/2008	1.4	661,000		1.1 to 1.4 gpm during reporting period.
Injection 02 Gonzales	600	575	362	12/10/2008	1.2	654,000		Increased average injection rate from 1.1 to 1.2 gpm during reporting period.
Injection 02 Gonzales	600	575	302	12/10/2006	1.2	054,000		1.1 to 1.2 gpin during reporting period.
Benevides	725	629	454	12/10/2008	1.3	677,000		
						· · · ·		Increased average injection rate from
Injection 04 Rohr	675	667	455	12/9/2008	7.1	3,283,000		6.0 to 7.1 gpm during reporting period
	750	705	450	40/40/0000	0.5	4 007 000		Decreased average injection rate from
Injection 05 Rohr	750	735	458	12/10/2008	8.5	4,037,000		9.7 to 8.5 gpm during reporting period. Increased average injection rate from
Injection 06 Masters	725	695	438	12/10/2008	6.7	2,946,000		6.2 to 6.7 gpm during reporting period.
	. 20	000	100	12,10,2000	0.1	2,010,000		Increased average injection rate from
Injection 07 Walden	750	713	457	12/10/2008	1.5	605,000		1.1 to 1.5 gpm during reporting period.
Injection 08 Haeffner	650	713	365	12/10/2008	see note	3,767		Well does not accept water very well. Inject approx. 150 gallons once every two weeks.
			Pump Depth		Average Pump Rate (gpm)		Gas Totals (mcf)	
								Average Pumping rate decreased from
Recovery 1 Kittleson	715	705	686	12/8/2008	19.20	11,340,000	9,785	19.5 to 19.2 during reporting period.
								Intermittent pumping at 4 gpm. Rate
								over 24 hrs is approx 1 gpm. Injection
								03 Benevides No injection occurred
								(normally 1.1 to 1.3 gpm) between
					1			most of the interval from 1/22/10
Recovery 3 PEI	625	591	575	12/8/2008	(see note)	582,000	767	to 2/8/10, due to plugged tubing.
								Started pump 2/10/09 to develop well. Pumps about 100 gallons in 15 minutes, per day. Water has not been injected.
Recovery 4 Barrett	500	484	463	2/10/2009	(see note)	3,600	237	Last pump date 4/8/09
Recovery 5 Masters	847	847	822	12/24/2009	6.7	485,000	705	Average pumping rate increased from 6.2 to 6.7 gpm during reporting period.

Table 2: Sampling of Dissolved Gases in Water Wells (results received as of February 22, 2010)							
	Well	Sample Date	Analyte	Results (In ug/I)	Comments		
Mitigation	Injection 03 Benavides	7/17/08	Ethane	4.9	Grabbed during pump testing		
wells	Injection 03 Benavides	7/17/08	Methane	280	Grabbed during pump testing		
	Injection 04 Rohr	7/22/08	Ethane	2.3	Grabbed during pump testing		
	Injection 04 Rohr	7/22/08	Methane	4,500	Grabbed during pump testing		
	Injection 05 Rohr	7/28/08	Ethane	3.0	Grabbed during pump testing		
	Injection 05 Rohr	7/28/08	Methane	3,100	Grabbed during pump testing		
	Injection 05 Rohr	3/9/09	Ethane	11	Injection Water		
	Injection 05 Rohr	3/9/09	Methane	5,200	Injection Water		
	Injection 05 Rohr	7/30/09	Ethane	4.4	Injection Water		
	Injection 05 Rohr	7/30/09	Ethene	ND	Injection Water		
	Injection 05 Rohr	7/30/09	Methane	2400	Injection Water		
	Injection 05 Rohr	9/01/09	Ethane	4.7	Injection Water		
	Injection 05 Rohr	9/01/09	Ethene	ND	Injection Water		
	Injection 05 Rohr	9/01/09	Methane	2700	Injection Water		
	Injection 05 Rohr	10/2/09	Methane	7800	Injection Water		
	Injection 05 Rohr	11/5/09	Ethane	6.7	Injection Water		
	Injection 05 Rohr	11/5/09	Ethene	ND	Injection Water		
	Injection 05 Rohr	11/5/09	Methane33	2400	Injection Water		
	Injection 05 Rohr	12/1/09	Ethane	7.1	Injection Water		
	Injection 05 Rohr	12/1/09	Ethene	ND	Injection Water		
	Injection 05 Rohr	12/1/09	Methane	2400	Injection Water		
	Injection 05 Rohr	2/1/10	Ethane	7	Injection Water		
	Injection 05 Rohr	2/1/10	Ethene	ND	Injection Water		
	Injection 05 Rohr	2/1/10	Methane	3,000	Injection Water		
	Injection 06 Masters	7/15/08	Ethane	3.9	Grabbed during pump testing		
	Injection 06 Masters	7/15/08	Methane	6,300	Grabbed during pump testing		
	Injection 07 Walden	7/29/08	Ethane	12	Grabbed during pump testing		
	Injection 07 Walden	7/29/08	Methane	12,000	Grabbed during pump testing		
	Injection 02 Gonzales	8/20/08	Ethane	2.7	Grabbed during pump testing		
	Injection 02 Gonzales	8/20/08	Methane	4.2	Grabbed during pump testing		
	Recovery 1 Kittleson	7/8/08	Ethane	3.0	Grabbed during pump testing		
	Recovery 1 Kittleson	7/8/08	Methane	4,800	Grabbed during pump testing		
	Recovery 1 Kittleson	8/4/08	Ethane	6.8	Grabbed during pump testing		
	Recovery 1 Kittleson	8/4/08	Methane	6,800	Grabbed during pump testing		
	Recovery 1 Kittleson	1/15/09	Ethane	2.5	IP 12/8/08		
	Recovery 1 Kittleson	1/15/09	Methane	2,000	IP 12/8/08		
	Recovery 1 Kittleson	7/21/09	Ethane	ND			
	Recovery 1 Kittleson	7/21/09	Ethene	ND			
	Recovery 1 Kittleson	7/21/09	Methane	2700			
	Recovery 1 Kittleson	7/30/09	Ethane	3.7			
	Recovery 1 Kittleson	7/30/09	Ethene	ND			
	Recovery 1 Kittleson	7/30/09	Methane	4100			
	Recovery 1 Kittleson	9/01/09	Ethane	7.3			
	Recovery 1 Kittleson	9/01/09	Ethene	ND			

Table 2: Sampling of Dissolved Gases in Water Wells(results received as of February 22, 2010)						
Well	Sample Date	Analyte	Results (In ug/I)	Comments		
Recovery 1 Kittleson	9/01/09	Methane	8600			
Recovery 1 Kittleson	10/2/09	Methane	9500			
Recovery 1 Kittleson	11/5/09	Ethane	7.3			
Recovery 1 Kittleson	11/5/09	Ethene	ND			
Recovery 1 Kittleson	11/5/09	Methane	7900			
Recovery 1 Kittleson	12/1/09	Ethane	7.5			
Recovery 1 Kittleson	12/1/09	Ethene	ND			
Recovery 1 Kittleson	12/1/09	Methane	8100			
Recovery 1 Kittleson	2/1/10	Ethane	10			
Recovery 1 Kittleson	2/1/10	Ethene	ND			
Recovery 1 Kittleson	2/1/10	Methane	9900			
Recovery 2 Reiss	4/4/08	Ethane	ND	Water while drilling		
Recovery 2 Reiss	4/4/08	Methane	ND	Water while drilling		
Recovery 3 PEI	8/25/08	Ethane	13	Grabbed during pump testing		
Recovery 3 PEI	8/25/08	Methane	9,600	Grabbed during pump testing		
Recovery 3 PEI	1/16/09	Ethane	15	IP 12/8/08		
Recovery 3 PEI	1/16/09	Methane	13,000	IP 12/8/08		
Recovery 3 PEI	7/21/09	Ethane	15			
Recovery 3 PEI	7/21/09	Ethene	2.4			
Recovery 3 PEI	7/21/09	Methane	13000			
Recovery 3 PEI	7/30/09	Ethane	15			
Recovery 3 PEI	7/30/09	Ethene	ND			
Recovery 3 PEI	7/30/09	Methane	17000			
Recovery 3 PEI	9/01/09	Ethane	22			
Recovery 3 PEI	9/01/09	Ethene	ND			
Recovery 3 PEI	9/01/09	Methane	26000			
Recovery 3 PEI	10/2/09	Methane	29000			
Recovery 3 PEI	11/5/09 11/5/09	Ethane Ethene	21 ND			
Recovery 3 PEI			-			
Recovery 3 PEI Recovery 3 PEI	11/5/09 11/12/09	Methane Ethane	24000 22			
Recovery 3 PEI	11/12/09	Ethene	ND			
Recovery 3 PEI	11/12/09	Methane	24000			
Recovery 3 PEI	12/1/09	Ethane	24000			
Recovery 3 PEI	12/1/09	Ethene	ND			
Recovery 3 PEI	12/1/09	Methane	25000			
Recovery 3 PEI	2/1/10	Ethane	26			
Recovery 3 PEI	2/1/10	Ethene	ND			
Recovery 3 PEI	2/1/10	Methane	29000			
Recovery 4 Barrett	7/10/08	Ethane	5	Grabbed during pump testing		
Recovery 4 Barrett	7/10/08	Methane	3,500	Grabbed during pump testing		
Recovery 4 Barrett	3/12/09	Ethane	12	IP 2/10/09		
Recovery 4 Barrett	3/12/09	Ethene	48	IP 2/10/09		
Recovery 4 Barrett	3/12/09	Methane	8,600	IP 2/10/09		

			Dissolved Gased as of Februa		Vells
	Well	Sample	Analyte	Results (In ug/I)	Comments
	POCI 55	8/19/09	Methane	7800	Pre Phase II
POCI 55	POCI 55	8/19/09	Ethene	ND	Pre Phase
	POCI 55	8/19/09	Ethane	11	Pre Phase
Wells	Angely, J	3/26/08	Ethane	35	by COGCC
within 1	Angely, J	3/26/08	Methane	15,000	by COGCC
mile of	Barrett, T	6/24/09	Methane	18,000	
Mitigation	Barrett, T	6/24/09	Ethane	11	
System	Barrett, T	6/24/09	Ethene	12	
	Bergman	6/29/09	Ethane	ND	Grabbed during pump testing
	Bergman	6/29/09	Ethene	ND	Grabbed during pump testing
	Bergman	6/29/09	Methane	2,300	Grabbed during pump testing
	Burge, K	8/5/08	Methane	3,900	
	Burge, K	12/18/08	Ethane	2.3	
	Burge, K	12/18/08	Methane	3,600	
	Burge, K	6/9/09	Ethane	3	
	Burge, K	6/9/09	Ethene	2.4	
	Burge, K	6/9/09	Methane	3,300	
	Coleman, V	3/1/08	Methane	4,600	filtered via house water filter
	Coleman, V	9/23/07	Methane	4,300	filtered via house water filter
	Coleman, V	9/23/07	Methane	5,000	raw- not filtered
	Coleman, V	3/1/08	Methane	5,100	raw- not filtered
	Coleman, V	12/4/08	Ethane	7	raw- not filtered
	Coleman, V	12/4/08	Methane	5,900	raw- not filtered
	Coleman, V	5/9/09	Ethene	2.4	raw- not filtered
	Coleman, V	5/9/09	Ethane	9	raw- not filtered
	Coleman, V	5/9/09	Methane	6,100	raw- not filtered
	Conley, J	3/24/08	Methane	ND	
	Conley, J	12/4/08	Ethane	U	
	Conley, J	12/4/08	Methane	1.5	
	Conley, J	6/15/09	Ethane	1.6	
	Conley, J	6/15/09	Ethene	2.4	
	Conley, J	6/15/09	Methane	2.5	
	Dee	6/30/09	Ethane	ND	Grabbed during pump testing
	Dee	6/30/09	Ethene	ND	Grabbed during pump testing
	Dee	6/30/09	Methane	5.7	Grabbed during pump testing
	Deroswitch, D	3/1/08	Methane	4,000	
	Deroswitch, D	1/15/09	Ethane	4.1	
	Deroswitch, D	1/15/09	Methane	2,200	
	English, B	3/14/08	Methane	ND	
	English, B	12/8/08	Ethane	U	
	English, B	12/8/08	Methane	U	
	English, B	7/8/09	Ethane	ND	
	English, B	7/8/09	Ethene	ND	
	English, B	7/8/09	Methane	ND	

			Dissolved Gas d as of Februa		Vells
	Well	Sample	Analyte	Results (In ug/I)	Comments
	Hopke, B	2/25/08	Methane	5,900	
	Hopke, B	3/26/08	Ethane	11	by COGCC
	Hopke, B	3/26/08	Methane	3,000	by COGCC
	Hopke, B	12/31/08	Ethane	U	
	Hopke, B	12/31/08	Methane	660	
	Hopke, B	6/22/09	Methane	4,200	
	Hopke, B	6/22/09	Ethane	7.2	
	Hopke, B	6/22/09	Ethene	2.4	
	Hoppe, C	10/23/08	Ethane	ND	
	Hoppe, C	10/23/08	Methane	19	
	Houghtling, J	2/25/08	Methane	9.2	
	Kerman, T	3/1/08	Methane	170	
	Kerman, T	12/4/08	Ethane	U	
	Kerman, T	12/4/08	Methane	1.1	
	Kerman, T	7/8/09	Ethane	ND	
	Kerman, T	7/8/09	Ethene	ND	
	Kerman, T	7/8/09	Methane	ND	
	Kerman, T WW	11/30/09	Methane	U	Grabbed from hydrant before
	Kerman, T WW	11/30/09	Ethane	U	cistern
	Kerman, T WW	11/30/09	Methane	0.78	
	Kerman, T House	11/30/09	Ethane	ND	Grabbed from house after
	Kerman, T House	11/30/09	Ethene	ND	cistern
	Kerman, T House	11/30/09	Methane	ND 10	
	Masters, T	6/29/09	Ethane	10	
	Masters, T	6/29/09	Ethene	2.4	
	Masters, T	6/29/09	Methane	14,000 54	
	McPherson McPherson, P	3/29/08 12/4/08	Methane Ethane	54 U	
	McPherson, P	12/4/08	Methane	950	
	McPherson, P	6/3/09	Ethane	16	
	McPherson, P	6/3/09	Ethene	24	
	McPherson, P	6/3/09	Methane	1,700	
	Rohr, W	7/6/09	Ethane	ND	Grabbed during pump testing
	Rohr, W	7/6/09	Ethene	ND	Grabbed during pump testing
	Rohr, W	7/6/09	Methane	800	Grabbed during pump testing
	Searle, S	3/14/08	Methane	7.5	
	Searle, S	12/8/08	Ethane	U 10	
	Searle, S	12/8/08	Methane	5.8	
Wells on	Campbell, J	2/23/09	Ethane	0.6	
RRR ex	Campbell, J	2/23/09	Methane	110	
near	Goodwin, R	3/14/08	Methane	240	
Mitigation	Goodwin, R	12/15/08	Ethane	U	
System	Goodwin, R	12/15/08	Methane	U	
	Goodwin, R	6/29/09	Ethane	1.6	

			Dissolved Gas d as of Februa		Wells
	Well	Sample	Analyte	Results (In ug/I)	Comments
	Goodwin, R	6/29/09	Ethene	2.4	
	Goodwin, R	6/29/09	Methane	5.2	
	Goodwin, R WW	11/30/08	Ethane	U	Crobbed from budrent before
	Goodwin, R WW	11/30/08	Ethene	U	Grabbed from hydrant before cistern
	Goodwin, R WW	11/30/08	Methane	U	Clatern
	Goodwin, R Cistern	11/30/09	Ethane	U	
	Goodwin, R Cistern	11/30/09	Ethene	U	Grabbed from cistern
	Goodwin, R Cistern	11/30/09	Methane	U	
	Rhoads, K	2/23/09	Methane	21	
	Roloff, B	8/5/08	Methane	3,800	
	Speh, D	10/8/08	Methane	7,200	
	Wolahan	3/10/08	Methane	75	
	Wolahan, E	12/4/08	Ethane	U	
	Wolahan, E	12/4/08	Methane	210	
	Wolahan, E	6/4/09	Methane	24	
	Wolahan, E	6/4/09	Ethene	2.4	
	Wolahan, E	6/4/09	Ethane	1.6	
	Meyer, J	4/29/09	Ethane	ND	
	Meyer, J	4/29/09	Methane	19,000	
Wells on	Goza, C	1/15/09	Ethane	1.4	Blackhawk Ranch
Silver	Goza, C	1/15/09	Methane	580	Blackhawk Ranch
Spurs	Gumpert, K	8/5/08	Methane	1,700	
Ranch unless	Sample, Mitch	3/10/08	Methane	19,000	
noted	Sample, Mitch WW	11/30/09	Ethane	U	
	Sample, Mitch WW	11/30/09	Ethene	U	Grabbed before cistern
	Sample, Mitch WW	11/30/09	Methane	48,000	
	Sample, Mitch Cistern	11/30/09	Ethane	23	
	Sample, Mitch Cistern	11/30/09	Ethene	U	Grabbed from cistern
	Sample, Mitch Cistern	11/30/09	Methane	15,000	
	Stephens, K	9/30/08	Methane	ND	
	Evenden, V	9/30/08	Methane	20,000	
	Evenden, V	8/26/09	Ethane	2.5	
	Evenden, V	8/26/09	Ethene	2.4	
	Evenden, V	8/26/09	Methane	7,700	
	Evenden, V	10/7/09	Ethane	ND	
	Evenden, V	10/7/09	Ethene	ND	
	Evenden, V	10/7/09	Methane	22,000	
	Fitzner, P	12/1/08	Methane	4,600	
	Fitzner, P WW	11/30/09	Ethane	U	Grabbed from bydrant before
	Fitzner, P WW	11/30/09	Ethene	U	Grabbed from hydrant before cistern
	Fitzner, P WW	11/30/09	Methane	2,100	
	Fitzner, P Cistern	11/30/09	Ethane	U	
	Fitzner, P Cistern	11/30/09	Ethene	U	Grabbed from cistern
	Fitzner, P Cistern	11/30/09	Methane	2,000	

	Table 2: Sampling of Dissolved Gases in Water Wells         (results received as of February 22, 2010)						
	(10	Sample		Results			
	Well	Date	Analyte	(In ug/I)	Comments		
	Geisklbrecht, G	9/30/08	Methane	ND			
	Geisklbrecht	1/27/10	Ethane	ND			
	Geisklbrecht	1/27/10	Ethene	ND	Grabbed at water hydrant		
	Geisklbrecht	1/27/10	Methane	ND			
	Haynes, E	6/4/09	Methane	0.8			
	Haynes, E	6/4/09	Ethane	1.6			
	Haynes, E	6/4/09	Ethene	2.4			
	Morine, J	1/15/09	Methane	14			
	Palmer (GIS)	10/1/08	Methane	ND			
	Palmer (GIS)	1/27/10	Ethane	ND			
	Palmer (GIS)	1/27/10	Ethene	ND	Grabbed at water hydrant		
	Palmer (GIS)	1/27/10	Methane	ND			
	Stetler	3/20/09	Methane	20,000			
	Stetler	3/20/09	Ethane	50			
	Stetler, J WW	11/30/09	Ethane	100			
	Stetler, J WW	11/30/09	Ethene	U	Grabbed before cistern		
	Stetler, J WW	11/30/09	Methane	38,000			
	Stetler, J Cistern	11/30/09	Ethane	U			
	Stetler, J Cistern	11/30/09	Ethene	U	Grabbed from cistern		
	Stetler, J Cistern	11/30/09	Methane	22,000			
	Modlish	3/20/09	Methane	0.33			
	Modlish	3/20/09	Ethane	ND			
	Billstrand	7/31/09	Ethane	ND			
	Billstrand	7/31/09	Ethene	ND			
	Billstrand	7/31/09	Methane	0.42			
	Bruington	7/6/09	Ethane	12	Grabbed during pump testing		
	Bruington	7/6/09	Ethene	2.4	Grabbed during pump testing		
	Bruington	7/6/09	Methane	7,900	Grabbed during pump testing		
	Eddleman, P	8/28/09	Ethane	ND			
	Eddleman, P	8/28/09	Ethene	ND			
	Eddleman, P	8/28/09	Methane	29,000			
	Eddleman, P WW	11/30/09	Ethane	U			
	Eddleman, P WW	11/30/09	Ethene	U	Grabbed before cistern		
	Eddleman, P WW	11/30/09	Methane	45,000			
	Eddleman, P WWIIA	11/30/09	Ethane	U	Filled 100 gallon stock tank and		
	Eddleman, P WWIIA	11/30/09	Ethene	U	agitated with small submersible pump for 2.5 hrs then grabbed		
	Eddleman, PWWIIA	11/30/09	Methane	2,100	sample		
	Wyland, R	9/8/09	Ethane	ND			
	Wyland, R	9/8/09	Ethene	ND			
	Wyland, R	9/8/09	Methane	3			
	Schafer, R	10/2/09	Methane	21	City Ranch		
Other	Rohr 04-14	11/11/07	Methane	10,070	CBM water		

Table 2: Sampling of Dissolved Gases in Water Wells(results received as of February 22, 2010)							
Well	Sample Date	Analyte	Results (In ug/I)	Comments			
Rohr 09-04	11/11/07	Methane	6,350	CBM water			
Rohr 09-04	9/17/09	Ethane	3.6	CBM water pre-phase II			
Rohr 09-04	9/17/09	Ethene	ND	CBM water pre-phase II			
Rohr 09-04	9/17/09	Methane	7300	CBM water pre-phase II			
Rohr 09-10	9/17/09	Ethane	2.1	CBM water pre-phase II			
Rohr 09-10	9/17/09	Ethene	ND	CBM water pre-phase II			
Rohr 09-10	9/17/09	Methane	5900	CBM water pre-phase II			
Rohr 04-10	9/17/09	Ethane	2.3	CBM water pre-phase II			
Rohr 04-10	9/17/09	Ethene	ND	CBM water pre-phase II			
Rohr 04-10	9/17/09	Methane	6400	CBM water pre-phase II			

Shading indicates sampling added since last reporting period.

	Table 3           Water Well Measurements for the February 2010 Monthly Report									
Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	History (Last Updated with November 2009 Monthly Report)	If sampled, comparison of results from this period to last period				
					r of Special Interest					
238689	Angely	7/5/07	2/3/10	2/3/10	Methane detected at levels >100 % LEL and above 10% CH4 by volume until approximately 4/9/08, then began dropping and reached approximately 0 by 5/28/08. Have remained at or near 0 except for jump in December 2008, March 2009 and November 2009 readings.	<ul> <li>% LEL decreased from 2 to 1</li> <li>CH4% volume decreased from 0.10 to 0.05</li> <li>O2% volume remained unchanged at 20.9</li> <li>CO increased from 0 to 6 ppm</li> <li>H2S remained unchanged at 0 ppm</li> </ul>				
257994	Barrett	7/12/07	2/19/10	2/1/10 2/19/10	Methane detected at levels >100 % LEL and above 10% CH4 by volume. Levels have dropped since March 2009 but remain above 0 except for an occasional 0 reading.	<ul> <li>% LEL decreased from 56 to 0 in 2/1/10 reading and ended the period at 96</li> <li>CH4% volume decreased from 2.8 to 0 in 2/1/10 reading and ended the period at 4.8</li> <li>O2% increased from 20.6 to 20.9 in 2/1/10 reading and ended the period at 20.2</li> <li>CO and H2S remained unchanged at 0 ppm</li> </ul>				
244403	Bergman	7/6/07	2/16/10	2/1/10 2/16/10	The methane has been variable with higher and lower values until 11/28/07 and then mostly levels at >100 %LEL and greater than 10% CH4 by volume.	<ul> <li>% LEL decreased from &gt;100 to 0</li> <li>CH4% volume decreased from 8.00 to 0</li> <li>O2% volume increased from 18.3 to 20.9</li> <li>CO and H2S remained unchanged at 0 ppm</li> </ul>				
181278	Bounds	7/12/07	2/3/10	2/3/10	Readings from this wellhead have been consistently at or above 100 %LEL with levels of CH4% by volume near 100. This wellhead has also shown fairly consistent low levels of H2S until 6/25/08 with variable levels after that time.	<ul> <li>% LEL remained unchanged at 100</li> <li>CH4% volume remained unchanged at 100</li> <li>O2% volume remained the same at 0</li> <li>CO increased from 8 to 16 ppm</li> <li>H2S increased from 0 to 0.5 ppm</li> </ul>				
169043	Burge	3/20/09	2/17/10	2/17/10	Methane detected at levels >100 % LEL and above 10% CH4 by volume until approximately 1/17/08, then began dropping through 3/14/08 and have remained at or near 0 since that time except for a single high reading on 7/2/08 and detectable methane on 10/1 and 10/6/09.	<ul> <li>% LEL remained unchanged at 0</li> <li>CH4% volume remained unchanged at 0</li> <li>O2% volume steady at 20.9</li> <li>CO and H2S remained unchanged at 0 ppm At the cistern: no changes from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm</li> </ul>				
267694	Coleman	7/5/07	2/19/10	2/1/10 2/19/10	Methane detected at wellhead at levels >100 % LEL and above 5% CH4 by volume until approximately 8/15/07, then began dropping with no methane detected since 10/30/07. Well vent has shown more variable and generally higher readings than the wellhead.	At the wellhead no change from previous measurements, with 0% LEL and CH4, O2% volume at 20.9 and no detectable CO and H2S. At the well vent: • % LEL increased from 0 to 6 • CH4% volume increased from 0 to 0.3 • O2% volume remained the same at 20.9 • CO and H2S remained unchanged at 0 ppm				
235516	Colorado Switzer	7/12/07	2/19/10	2/1/10 2/19/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.				
255929	Conley	7/11/07	2/19/10	2/19/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.				
260097	Dee	7/5/07	2/16/10	2/16/10	No methane has ever been detected at this wellhead. A potentially erroneous reading of 5%LEL occurred on 7/30/09 with no detectable methane.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.				

					Table 3 Water Well Measurements for the February 2010 Monthly Rep	ort
Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	History (Last Updated with November 2009 Monthly Report)	If sampled, comparison o
252931	Derowitsch	7/6/07	2/18/10	2/1/10 2/18/10	Methane detected at wellhead at levels approximately 100 % LEL and mostly above 5% CH4 by volume until approximately 9/4/07, then methane levels dropped to 0 and has remained at 0 since that time. Both the well vent and cistern have historically shown very low to 0 levels of methane. Late September to present readings at the well vent indicate levels of methane although the cistern shows no detectable methane during that time period.	<ul> <li>At the wellhead no change from detectable methane; O2% volur well vent:</li> <li>% LEL increased from 0 to 5</li> <li>CH4% volume increased slig on 2/18/10</li> <li>O2% volume remained unchated the cistern:</li> <li>% LEL decreased from 5 to CH4% volume decreased from 5 to CH4% volume increased from 5 to CH4</li></ul>
235515	English	8/16/07	8/24/09	None	No methane has ever been detected at this wellhead.	Reading was attempted 1/19/10 since 10/1/09.
16861-F	Golden Cycle Land	7/12/07	2/19/10	2/1/10 2/19/10	Readings initially showed methane at 100% LEL and greater than 20% by volume CH4, but dropped to 0 by 9/24/07 and remained at 0 (with two readings above 0 on 11/16/07 and 4/23/08) until 10/20/08. Starting 10/20/08 methane was once again detected at higher values along with CO at high levels and showings of H2S.	<ul> <li>%LEL remained unchanged a</li> <li>CH4% volume increased slig</li> <li>O2% remained unchanged a</li> <li>CO decreased from 39 to 0 p</li> <li>H2S increased from 0 ppm 1</li> </ul>
253317	Gonzalez	7/12/07	2/16/10	2/16/10	No methane has ever been detected at this wellhead.	No change from previous meas methane, O2% at 20.9 and no
256504	Hopke	7/5/07	2/19/10	2/1/10 2/19/10	Readings consistently measure methane at >100% LEL and at values of CH4% by volume fairly consistently above 20. The well has shown an overall slow decline in CH4 % by volume over time from initial readings in the 90-100% to most 2009 in the range of 10 to 30%. H2S also has shown a decline over time such that most recent readings have been at or slightly above 0. No methane has ever been detected at the cistern.	<ul> <li>% LEL remained unchanged</li> <li>CH4% volume increased from</li> <li>O2% volume decreased from</li> <li>CO and H2S remained unchanged</li> <li>At the cistern: no changes from detectable methane, O2% volume</li> </ul>
236272	Houghtling	7/6/07	2/16/10	2/1/10 2/16/10	Methane levels at this wellhead have been consistently >100% LEL with CH4% by volume fairly consistently above 20 with some lower values (but not 0). No methane has ever been detected at the cistern.	At the wellhead: • % LEL decreased from >100 • CH4% volume decreased 95 • O2% increased from 0 to 19 • CO remained unchanged at 0 • H2S decreased from 2.5 ppn At the cistern: no changes from detectable methane, O2% volum
35292	Kerman/Hanson	7/6/07	2/16/10	2/1/10 2/16/10	Values at this wellhead have been at or near 0 with two readings of >100% LEL and greater than 5% by volume CH\$ on 12/2/08 and 12/22/08 and slightly higher readings in July and August 2009. No methane has ever been detected at the cistern.	No change from previous meas methane, O2% at 20.9 and no C The cistern values remained un 20.9 and no CO or H2S.

om previous measurements with 0% LEL, no lume at 20.9 and CO and H2S at 0 ppm. At the

5 ending the period at 0 lightly from 0 to 0.25 and then decreasing to 0

changed at 20.9 changed at 0 ppm

to 0 from 0.25 to 0 m 20.3 to 20.9 at 0 ppm 0 10 but the gate 1

10 but the gate has been locked with no access

d at >100 lightly from 39 to 40 l at 0 0 ppm on 2/19/10 n 1/18/10 to a high of 63 ppm on 2/19/10

easurements with 0% LEL, no detectable no CO or H2S.

ed at >100 from 13 to 18 om 17.4 to 15.7 changed at 0 ppm with a light H2S odor noted m previous measurements with 0% LEL, no lume at 20.9 and CO and H2S at 0 ppm.

00 to 70 95 to 3.5 2/16/10 9 at 0 ppm pm to 0 ppm 2/1/10 m previous measurements with 0% LEL, no lume at 20.9 and CO and H2S at 0 ppm. asurements with 0% LEL, no detectable to CO or H2S. unchanged with no detectable methane, O2% at

	Table 3         Water Well Measurements for the February 2010 Monthly Report								
Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	History (Last Updated with November 2009 Monthly Report)	If sampled, comparison of results from this period to last period			
	Lively 10-02	12/22/2008	2/16/10	2/1/10 2/16/10	Readings from this well started with mostly 0 to low levels of methane but have been moving upward with late 2009 readings showing detectable levels more consistently with some readings as high as >100 % LEL. CH4% volume remains below 5%. Some non detectable readings still also occur.	<ul> <li>% LEL decreased from 16 to 0</li> <li>CH4% volume decreased from 0.8 to 0</li> <li>O2% volume increased from 3.2 to 20.9</li> <li>CO decreased from 181 to 0 ppm</li> <li>H2S decreased from 4.5 to 0 ppm</li> </ul>			
222539	Lively	7/6/07	2/19/10	2/19/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.			
16861-F	Masters #1	8/13/07	2/19/10	2/1/10 2/19/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.			
271136	Мау	7/12/07	2/2/10	2/2/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.			
84108-A	McPherson	7/6/07	2/16/10	2/16/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.			
84106	Rohr	7/06/07	2/2/10	2/2/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm			
123144	Searle	7/11/07	2/19/10	2/19/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.			
239657	Smith	7/5/07	2/16/10	2/1/10 2/16/10	Detectable methane in early readings with % LEL at 100 or greater and % by volume of CH4 at up to 100. Began showing some variability in readings on 9/9/07 eventually decreasing until levels at 0 beginning 5/5/08. Three readings since that time on 5/21/08, 10/27/08 and 7/13/09 have shown >100% LEL and CH4 % by volume at or above 5. October 2009 reading showed low levels (18% LEL and 0.9% CH4 by volume).	<ul> <li>At the well head no change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.</li> <li>At the well vent: <ul> <li>% LEL decreased from, &gt;100 to 46</li> <li>CH4% volume decreased from 22.0 to 2.3</li> <li>O2% volume increased from 15.4 to 20</li> <li>CO remained at 0 ppm and H2S increased from 0 to 5 ppm</li> <li>At the cistern all values remained unchanged with 0 %LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.</li> </ul> </li> </ul>			
	BLM 15-12	6/1/09	2/17/10	2/17/10	The limited number of readings at this wellhead have shown detectable methane with >100% LEL and CH4 % volume of greater than 70 and limited O2% volume.	<ul> <li>% LEL remained at &gt;100</li> <li>CH4% volume decreased slightly from 72 to 70</li> <li>O2% volume decreased from 4.3 to 0</li> <li>CO and H2S remained at 0 ppm</li> </ul>			
	in or in Close Proxi					· · · · · · · · · · · · · · · · · · ·			
249362	Andexler	9/9/07	2/17/10	2/17/10	Several readings (3/25/09, 7/30/09 and October 2009) have shown less the 0.25% CH4 methane, otherwise no detectable methane.	The well head showed no change from previous measurements with 0% LEL, no detectable methane, 17.8 O2% and CO and H2S at 0 ppm Cistern showed no change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.			
215706	Brice	7/12/07	2/2/10	2/2/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.			
248680	Campbell	8/14/07	2/17/10	2/17/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.			
20783	Goemmer Cattle	7/12/07	2/19/10	2/19/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.			
258815	Goodwin	7/12/07	2/2/10	2/2/10	Readings have shown methane levels at or near 0 with no readings above 0 from late January 2009 through October 2009. November 2009 showed low levels of methane.	<ul> <li>% LEL decreased from 8 to 5</li> <li>CH4% decreased from 0,4 to 0.25</li> <li>O2% increased from 20.3 to 20.9</li> <li>CO and H2S remained at 0 ppm</li> </ul>			
249181	Hentschel	9/9/07	2/2/10	2/2/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0% LEL, no detectable methane, O2% volume at 20.9 and CO and H2S at 0 ppm.			

					Table 3 Water Well Measurements for the February 2010 Monthly Rep	ort
Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	History (Last Updated with November 2009 Monthly Report)	If sampled, comparison c
259122	Higgins	9/26/07	2/17/10	2/2/10, 2/17/10	No methane has ever been detected at this wellhead	No change from previous measumethane, O2% volume at 20.9 a
269435	Hoppe (formerly Goacher)	7/11/07	2/16/10	2/16/10	No methane has ever been detected at this wellhead	No change from previous measure methane, O2% volume at 20.9 a
264581	Ireland	7/12/07	2/2/10	2/2/10	Typically no methane, but methane has been detected on 12/2/08, 12/22/08, and 1/6/09 with 100% or greater LEL and 5% by volume CH4.	No change from previous measu methane, O2% volume at 20.9 a
	Lang	10/29/07	7/28/08	None	No methane has ever been detected at this wellhead.	Reading attempted 2/1/10 but ga
93386	Lowry	7/12/07	2/19/10	2/19/10	No methane has ever been detected at this wellhead.	No change from previous measure methane, O2% volume at 20.9 a
250369	Martin	7/12/07	2/16/10	2/16/10	No methane has ever been detected at this wellhead.	No change from previous measure methane, O2% volume at 20.9 a
248862	Meyer	8/14/07	2/17/10	2/2/10, 2/17/10	Methane levels generally at >100% LEL and CH4 % by volume of greater than 5. Readings were a bit variable with some lower methane levels until 5/22/08 and then became consistently >100% LEL and CH4% by volume greater than 5.	<ul> <li>% LEL remained unchanged</li> <li>CH4 % volume decreased fi</li> <li>O2% volume increased from</li> <li>CO increased from 0 to 1 pp</li> </ul>
192203	Rankins	7/12/07	2/16/10	2/16/10	No methane has ever been detected at this wellhead.	No change from historic measured of the change from historic measured of the change of
276994	Rhodes	9/9/08	2/19/10	2/19/10	Slight LEL (5%) reported 7/30/09, but no methane detected. No methane has ever been previously detected at this wellhead.	No change from previous measu and CO and H2S at 0 ppm. O29
274468	Roloff	9/9/07	1/18/10	None	No methane had ever been detected at this wellhead except for low levels detected in the 8/25/09 measurement.	Reading attempted 2/18/10 but
254577	Ryerson	9/9/07	2/17/10	2/2/10, 2/17/10	No methane has ever been detected at this wellhead.	No change from previous measu methane, O2% volume at 20.9 a
246775	Sharp	9/9/07	2/2/10	2/2/10	No methane has ever been detected at this wellhead.	No change from previous meas methane, O2% volume at 20.9 a
267695	Speh	9/4/07	2/1/10	2/1/10	No methane has ever been detected at this wellhead.	No change from previous measumethane, O2% volume at 20.9 a
230572	Willis	7/11/07	2/17/10	2/17/10	No methane has ever been detected at this wellhead.	No change from previous measumethane, O2% volume at 20.9 a
240947	Wolahan	7/12/07	2/16/10	2/16/10	No detectable methane except 5/21/08, 1/27/09 and 2/9/09 with levels at 5% LEL and 0.25% by volume CH4.	No change from previous measu showing 0% LEL, no detectable H2S at 0 ppm.
<b>City Ranch</b>	n and Other Propertie	es		-		
	Andreatta/Carsella	8/14/07	2/17/10	2/17/10	No methane has ever been detected at this wellhead.	No change from previous measure methane, O2% volume at 20.9 a
197472	Bartlett	8/15/07	2/15/10	2/15/10	No methane has ever been detected at this wellhead.	No change from previous measu methane, O2% volume at 20.9 a
210526	Bruington	8/7/07	2/19/10	2/1/10, 2/19/10	Wellhead readings have shown consistent levels of methane at >100% LEL and CH4 % by volume at greater than 50. Some CO and H2S readings in mid to late 2008 but current readings have shown little to no CO and H2S. No methane has ever been detected at the cistern.	At the wellhead: • % LEL decreased from 60 to • CH4% volume decreased from • O2% volume increased from • CO increased from 0 to 40 2/ • H2S increased to 3.5 from 0 There were no changes at the c LEL, no detectable methane, O2

surements with 0% LEL, no detectable and CO and H2S at 0 ppm. surements with 0% LEL, no detectable and CO and H2S at 0 ppm. surements with 0% LEL, no detectable

and CO and H2S at 0 ppm.

gate was locked preventing access. surements with 0% LEL, no detectable and CO and H2S at 0 ppm. surements with 0% LEL, no detectable and CO and H2S at 0 ppm.

ed at >100

from 25 to 5

om 14.4 to 16.3

ppm and H2S remained at 0 ppm

urements with 0% LEL, no detectable methane, and H2S at 0 ppm.

surements with 0% LEL, no detectable methane 2% volume remained at 20.6.

It gate was locked preventing access.

surements with 0% LEL, no detectable and CO and H2S at 0 ppm.

surements with 0% LEL, no detectable

and CO and H2S at 0 ppm.

surements with 0% LEL, no detectable

and CO and H2S at 0 ppm.

surements with 0% LEL, no detectable and CO and H2S at 0 ppm.

and CO and h23 at 0 ppm.

asurements at the wellhead and cistern with both le methane, O2% volume at 20.9 and CO and

and CO and H2S at 0 ppm.

surements with 0% LEL, no detectable and CO and H2S at 0 ppm.

to 35, then ended the period >100 from 3 to 2 and ended the period at 31 m 17.2 to 19.3 and ended the period at 11 2/1/10, then dropped to 0. 0 ppm then decreased to 2.5 ppm. e cistern from previous measurement with 0% O2% volume at 20.9 and CO and H2S at 0 ppm.

					Table 3 Water Well Measurements for the February 2010 Monthly Rep	ort
Permit Number	Name	Name Sampling Las Start Date Samp		Samples Since Last Monthly Report	History (Last Updated with November 2009 Monthly Report)	If sampled, comparison o
220100	Cordova	10/30/07	2/19/10	2/1/10, 2/19/10	Initial readings were variable with readings as low as 0 and as high as >100% LEL and greater the 5% CH4 by volume. After 3/14/08 mostly readings at 0 with some readings at levels slightly above 0.	No changes from previous mea O2% volume at 20.9 and CO ar
191079	Brian Dale	8/15/07	2/15/10	2/15/10	Variability between 0 and >100% LEL and 5% or greater CH4 by volume until 11/14/08 and since that time no methane has been detected.	No change from previous meas no detectable methane, O2% vo
193092	Degan	8/25/08	2/19/10	2/19/10	Initial readings were variable between 0 and >100% LEL and 5% by volume CH4. Since 2/17/09 there has been no detectable methane.	No change from previous meas methane, O2% volume at 20.9,
	Dernell	8/15/07	2/19/10	2/19/10	No methane has ever been detected at this wellhead.	No change from previous meas methane, O2% volume at 20.9
258651	Gonzalez	5/22/08	2/15/10	2/1/10, 2/15/10	Methane readings were >100% LEL and CH4 % by volume mostly above 20. From 4/9/09 to 7/13/09 values were reduced with % LEL below 50 and CH4 % by volume below 3. From 7/30/09 reading to present values are once again >100% LEL and CH4% by volume greater than 20 except for latest reading which was once again reduced. There has been no detectable methane at the cistern.	At the wellhead: • % LEL decreased from >100 • CH4% volume decreased from • O2% volume increased from • CO and H2S remained at 0 p At the cistern: no changes from detectable methane, O2% volur
	Haupt #1	6/1/09	2/15/10	2/15/10	There have been minimal readings from this wellhead. All readings but one have shown % LEL at >100 with CH4 % by volume at 11 or less.	<ul> <li>% LEL increased from 99 to</li> <li>CH4% volume increased from</li> <li>O2% volume decreased from</li> <li>CO and H2S remained at 0 p</li> </ul>
203536	Hurley	8/2/07	2/19/10	2/19/10	Readings have fairly consistently shown >100% LEL and CH4 % by volume between 10 and 50 with a couple lower readings. H2S has also been measured, but starting around 9/08 values have been reduced to at or near 0 ppm.	<ul> <li>% LEL remained unchanged</li> <li>CH4% volume decreased from</li> <li>O2% volume decreased from</li> <li>CO remained at 0 ppm</li> <li>H2S decreased from 11.5 to</li> </ul>
205195	Johnson	8/15/07	2/15/10	2/15/10	Readings have shown mostly low values of methane (% LEL less than 20 and CH4 % by volume less than 1) with some 0 values.	No change from last measurem O2% volume at 20.9 and 0 ppm Reading at the cistern stayed th volume at 20.9 and no CO or H2 The #2 well stayed the same wi volume at 20.9 and CO and H23
193520X	McEntee	8/2/07	2/15/10	2/15/10	Initially methane was detected at this wellhead at values of >100% LEL and greater than 10% by volume CH4. Starting 1/28/08 values dropped to at or near 0 with only one higher value on 2/17/09 (>100% LEL and 5% By volume CH4). Mostly no detectable methane since that time with two low level detections; one on 4/22/09 and one on 10/20/09.	At the wellhead and east wellhe measurement with 0% LEL, no CO and H2S at 0 ppm.
191345	Pennington	8/7/09	10/20/09	None	Four readings have occurred at this well; showing detectable methane at levels of >100% LEL and CH4% by volume at 15 or less except for 10/20/09 reading which showed lower methane levels (25% LEL and 1.25% CH4 by volume)	Sampling attempted 2/18/10 bu
121013	Schafer	8/15/07	2/19/10	2/19/10	No methane has ever been detected at this wellhead	No change from previous meas 20.9 and 0 ppm CO and H2S.

easurements with % LEL and CH4% volume at 0, and H2S at 0 ppm

asurement at wellhead or Well #2 with 0% LEL, volume at 20.9, and CO and H2S at 0 ppm.

asurements with 0% LEL, no detectable 9, and CO and H2S at 0 ppm.

asurements with 0% LEL, no detectable 9 and CO and H2S at 0 ppm.

00 to 30

from 17 to 1.5

om 17.1 to 20

ppm

m previous measurement with 0% LEL, no lume at 20.9 and CO and H2S at 0 ppm.

to >100

rom 5 to 73

om 18.3 to 6

ppm

ed at >100 from 14 to 23

om 18.3 to 11.3

to 0 ppm

ement with 0 % LEL, no detectable methane, om CO and H2S.

the same showing no detectable methane, O2% H2S.

with 0% LEL, no detectable methane, O2% I2S at 0 ppm.

head there were no changes from previous to detectable methane, O2% volume at 20.9 and

out gate was locked with no access to well.

asurements with no detectable methane, O2% at

	Table 3         Water Well Measurements for the February 2010 Monthly Report								
Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	History (Last Updated with November 2009 Monthly Report)	If sampled, comparison of results from this period to last period			
248983	Tobyas	8/3/07	2/15/10	2/2/10 2/15/10	Historically this wellhead has shown wide variance between 0 and higher methane values of >100% LEL and greater than 5% by volume CH4 with no discernable long term trends.	<ul> <li>% LEL remained unchanged at &gt;100</li> <li>CH4% volume remained at 5</li> <li>O2% volume decreased from 19.8 to 18</li> <li>CO and H2S remained at 0 ppm</li> </ul>			
Silver Spu	rs Ranch	•	•	•	•				
268180	Billstrand	8/12/08	2/18/10	2/18/10	No methane has been detected at this wellhead except for a low reading on 5/6/09 (5% LEL and 0.25% by volume CH4).	<ul> <li>% LEL decreased from 6 to 0</li> <li>CH4% volume decreased from 0.30 to 0</li> <li>O2% volume increased from 12.2 to 18.8</li> <li>CO remained unchanged at 0 ppm</li> <li>H2S increased from to 0.5 ppm</li> </ul>			
215807	Brown	12/8/08	2/8/10	2/8/10	No methane has ever been detected at this wellhead.	<ul> <li>% LEL decreased from 8 to 0</li> <li>CH4% volume decreased from 0.4 to 0</li> <li>O2% volume increased from 20.3 to 20.9</li> <li>CO and H2S remained unchanged at 0 ppm</li> </ul>			
222294	Cramer	8/3/07	2/18/10	2/18/10	Most methane readings have been at or near 0 with periodic higher readings.	At the wellhead: • % LEL decreased from >100 to 12 • CH4% volume decreased from 5 to 0.6 • O2% volume increased from 20.9 to 5.5 • CO increased from 30 to 64 ppm • H2S increased from 0 to 1.5 ppm No change from previous measurements at the cistern with no detectable methane; O2% at 20.9 and 0 ppm CO and H2S.			
192509	Eddleman, Paul	1/17/08	2/18/10	2/18/10	Readings mostly above >100% LEL and 5% by volume CH4 until 9/23/08 and then levels dropped to mostly 0 until 1/26/09. Since 1/26/09 readings have shown wide variability between low to 0 methane and >100% LEL and greater than 5% by volume methane. Since 6/9/09 methane levels have been consistently higher.	At the wellhead: • % LEL decreased from >100 to 12 • CH4% decreased from 20 to 0.6 • O2% volume increased from 0 to 0.2 • CO increased from 15 to 16 ppm • H2S increased from 1.5 to 4.0 ppm			
226536	Eddleman, Todd	1/17/08	2/17/10	2/17/10	Methane readings have been widely variable from 0 to >100% LEL and 5% by volume CH4. Since 2/16/09 all readings have been lower with %LEL less than 40 and CH4 % Volume less than 2.00.	At the wellhead: • % LEL decreased from 60 to 0 • CH4% decreased from 3.00 to 0 • O2% volume increased from 0 to 20.9 • CO and H2S remained at 0 ppm			
221465	Evenden	8/2/07	2/18/10	2/18/10	Methane readings have generally been at or near 0 with no detectable methane since 3/24/09 and higher readings on 1/12/09 (>100% LEL and 5% by volume methane).	<ul> <li>% LEL decreased from 7 to 6</li> <li>CH4% decreased from 0.35 to 0.30</li> <li>O2% volume increased from 13 to 15.7</li> <li>CO and H2S remained at 0 ppm</li> </ul>			
	Fischer	1/26/09	2/18/10	2/18/10	Only one reading has ever detected methane; on 2/17/09 methane values were 5% LEL and 0.25% by volume CH4.	<ul> <li>% LEL increased from 0 to 5</li> <li>CH4% increased from 0 to 0.25</li> <li>O2% volume decreased from 20.9</li> <li>CO and H2S remained at 0 ppm</li> </ul>			
214145A	Fitzner	11/18/08	2/18/10	2/18/10	Methane levels have been at 0 except for readings on 12/15/08, 1/26/09, 3/26/09 and 10/19/09 when values were >100% LEL and 5% by volume CH4.	At the wellhead: • % LEL decreased from >100 to 0 • CH4% decreased from 5.00 to 1.65 • O2% and CO remained the same at 0 • H2S increased from 0 to 3 ppm .			

					Table 3 Water Well Measurements for the February 2010 Monthly Rep	ort
Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	History (Last Updated with November 2009 Monthly Report)	If sampled, comparison of results from this period to last period
31935	Garza-Vela	1/30/08	2/17/10	2/17/10	Generally there is 0 to low methane levels except for readings on 3/1/08, 5/22/08, and 6/3/08.	No change from previous measurements with 0 % LEL and CH4 % volume, O2% volume at 20.9 and CO and H2S at 0 ppm.
196372	Geiselbrecht	8/12/08	2/18/10	2/18/10	No methane has ever been detected at this wellhead.	No change from previous measurements with 0 % LEL and CH4 % volume, O2% volume at 20.9 and CO and H2S at 0 ppm
246350	Gumpert	7/29/08	2/18/10	2/18/10	Methane readings have been widely variable with most readings either 0 or >100% LEL and 5% by volume CH4. Since 8/27/09 readings have been below >100% LEL and 10% CH4 by volume.	<ul> <li>% LEL decreased from &gt;100 to 5</li> <li>CH4% decreased from 6.00 to 0.25</li> <li>O2% volume increased from 0 to 20.9</li> <li>CO decreased from 14 to 0 ppm</li> <li>H2S remained at 0 ppm</li> </ul>
196371	Lyon	8/15/07	2/18/10	2/18/10	Most methane readings have been at or near 0 with higher values of >100% LEL and 5% by volume CH4 on 5/22/08 and 4/22/09. beginning with 6/18/09 reading methane has been regularly detected.	<ul> <li>% LEL decreased from &gt;100 to 18</li> <li>CH4% volume decreased from 5.00 to 0.9</li> <li>O2% volume increased from 1.2 to 4.6</li> <li>CO and H2S remained unchanged at 0 ppm</li> </ul>
271524-A	Modlish	1/30/08	2/17/10	2/17/10	Most methane readings have been at or near 0 with higher values of >100% LEL and 5% by volume CH4 on 10/21/08 and 5/20/09.	<ul> <li>% LEL decreased from 7 to 0</li> <li>CH4% volume increased from 0.35 to 0</li> <li>O2% volume increased from 15.8 to 20.9</li> <li>H2S remained unchanged at 0 ppm</li> <li>CO remained unchanged at 0 ppm</li> </ul>
28093MH	Morine	9/10/08	2/18/10	2/18/10	Only on reading above 0 has been detected at this wellhead. This reading occurred 1/12/09 and showed 5% LEL and 0.25% by volume CH4.	No change from previous measurements with 0 % LEL and CH4 % volume, O2% volume at 20.9 and CO and H2S at 0 ppm
35227MH	Morris	10/8/08	2/17/10	2/17/10	Methane readings swing widely between 0 and 100 % LEL and 0.00 and 5.00 % CH\$ by volume.	No change from previous measurements with 0 % LEL and CH4 % volume, O2% volume at 20.9 and CO and H2S at 0 ppm
190327	Palmer	8/12/08	2/18/10	2/18/10	No methane was ever been detected at this wellhead until low levels were detected in 10/19/09 and 11/6/09 readings.	<ul> <li>% LEL decreased from 9 to 0</li> <li>CH4% volume decreased from 0.45 to 0</li> <li>O2% volume increased from 6.3 to 20.9</li> <li>CO remained unchanged at 0 ppm</li> <li>H2S decreased from 0.5 to 0 ppm</li> </ul>
197128	Roberts	4/08/08	2/18/10	2/18/10	Methane readings have historically been widely variable from 0 to >100% LEL and 5% by volume CH4.	<ul> <li>% LEL increased from 0 to 40</li> <li>CH4% volume increased from 0 to 2</li> <li>O2% volume decreased from 20.9 to 9.8</li> <li>CO and H2S remained unchanged at 0 ppm</li> </ul>
271748	Sample	3/10/08	2/17/10	2/17/10	Most of the readings from this wellhead have been at or near 0 detectable methane with higher readings on 5/22/08, 6/3/08, and 5/20/09 of >100% LEL and 5% by volume CH4. More consistent methane readings have occurred recently beginning in July 2009.	<ul> <li>% LEL decreased from 33 to 0</li> <li>CH4% volume decreased from 1.65 to 0</li> <li>O2% volume increased from 10.9 to 20.9</li> <li>CO remained unchanged at 0 ppm</li> <li>H2S decreased from 0.5 to 0 ppm</li> </ul>
192144	Snow	8/2/07	2/18/10	2/18/10	No measurable methane until 10/4/07, then widely variable levels ranging from 0 to >100% LEL and 5% by volume CH4 with no discernable trends.	<ul> <li>% LEL decreased from &gt;100 to 25</li> <li>CH4% volume decreased from 5.00 to 1.25</li> <li>O2% volume increased from 0 to 6.8</li> <li>CO remained unchanged at 0 ppm</li> <li>H2S increased from 0 to 1.5 ppm</li> </ul>
213070	Stephens	8/12/08	2/18/10	2/18/10	No methane had ever been detected at this wellhead until low levels were detected on 10/19/09.	<ul> <li>% LEL and CH4% volumes remained unchanged at 0</li> <li>O2% volume decreased from 15.3 to 4.8</li> <li>CO remained unchanged at 0 ppm</li> <li>H2S increased from 0 to 3 ppm</li> </ul>

				I	Table 3 Vater Well Measurements for the February 2010 Monthly Rep	ort		
Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	History (Last Updated with November 2009 Monthly Report)	If sampled, comparison		
233286A	Stetler	3/17/09	1/19/10	None	Methane levels have been showing an overall increase since the start of monitoring with levels general very low at the start of monitoring in early 2009 and increasing to present, although not a consistent increase with some nondetectable methane readings recorded. No methane has ever been detected at the cistern.	Homeowner has requested that point will be removed from the ta		
261753	Wahl	8/5/09	2/18/10	2/18/10	No methane has ever been detected at this wellhead.	No changes from previous meas methane, O2% volume at 20.9 a		
234839	Waltz	8/12/08	2/18/10	2/18/10	No methane has ever been detected at this wellhead.	No changes from previous meas methane, O2% volume at 20.9 a		
234836	White, Jim	1/4/08	2/18/10	2/18/10	Methane levels have been widely variable between no detectable methane and methane levels at >100% LEL and 5% by volume CH4 with no discernable trends. No methane has ever been detected at the cistern.	<ul> <li>% LEL decreased from &gt;100</li> <li>CH4% volume decreased fro</li> <li>O2% volume increased from</li> <li>CO remained unchanged at (</li> <li>H2S decreased from 2.5 to (</li> </ul>		
219376	White, Orlie	8/2/07	2/18/10	2/18/10	Methane values historically at low to 0 with %LEL above 100 and CH4 % by volume at 5 to 10 on 5/22/08 and from 9/10/08 to 10/29/08. Three detectable methane readings in 2009; one on 3/26/09 at 30% LEL and 1.5% CH4 by volume; one on 9/29/09 at 8% LEL and 0.4% CH4;and one on 10/19/09 of >100% LEL and 5.00% CH4 by volume.	<ul> <li>% LEL decreased from &gt;100</li> <li>CH4% volume decreased fro</li> <li>O2% volume increased from</li> <li>CO and H2S remained unchanged</li> </ul>		
Black Haw	k Ranch							
218719	Goza	1/14/09	2/19/10	2/19/10	No methane has ever been detected at this wellhead except for 1/19/2010 reading.	<ul> <li>% LEL decreased from 5 tc</li> <li>CH4% volume increased from</li> <li>O2% volume decreased from</li> <li>CO and H2S remained unch</li> </ul>		

nat their well no longer be sampled. This sampling e table beginning in the next reporting period.

easurement 8/5/09, with 0% LEL, no detectable .9 and CO and H2S at 0 ppm. easurement with 0% LEL, no detectable .9 and CO and H2S at 0 ppm. 00 to 0 from 5.00 to 0 om 0 to 20.9 at 0 ppm o 0 ppm 00 to 0 from 5.00 to 0 om 0 to 20.9 changed at 0 ppm 5 to 0 from 0.25 to 0 from 18.3 to 20.9 nchanged at 0 ppm

		Table 4 Reading 2 February	s Schedul	e			
<u>Landowner</u>	<u>Subdivision</u>	<u>Water</u> Level	<u>Cistern</u>	<u>Bi-</u> Monthly	<u>Monthly</u>	Quarterly	<u>Weekly</u>
Monitoring Within 1 Mile Radio	us or of Special Interest						
Kathy Dee	River Ridge				Х		
R. Gonzalez	River Ridge				Х		
McPherson	River Ridge				Х		
Rohr	River Ridge					Х	
Houghtling	River Ridge		Х	Х			
Kent Smith	River Ridge		Х	Х			
Bergman	River Ridge			Х			
Lively	River Ridge					Х	
Kerman	River Ridge		Х	Х			
Conley	River Ridge				Х		
Searle	River Ridge				Х		
Derowitsch	River Ridge		Х	Х			
Colorado-Switzer	River Ridge					Х	
English	River Ridge		Х		Х		
Golden Cycle Land (Goemmer)	River Ridge			х			
Burge	La Veta Pines				Х		
Barrett	River Ridge			Х			
Hopke	River Ridge		Х	Х			
Masters #1	River Ridge			Х			
Coleman	River Ridge			Х			
BLM 15-12	La Veta Pines				Х		
Lively 10-02	River Ridge			Х			

		Table 4 ne Reading (22 February	s Schedu	le			
Landowner	Subdivision	<u>Water</u> Level	Cistern	<u>Bi-</u> Monthly	Monthly	Quarterly	Weekly
River Ridge Ranch					·	· · · · ·	
Wolahan	River Ridge		Х		Х		
Martin	River Ridge				Х		
Speh	River Ridge				Х		
Lang	River Ridge		Х			Х	
Roloff	River Ridge	Х			Х		
Hoppe (Goacher)	River Ridge				Х		
Мау	River Ridge				Х		
Brice	River Ridge				Х		
Goodwin	River Ridge		Х		Х		
Ireland	River Ridge				Х		
Andexler	River Ridge		Х		Х		
Sharp	River Ridge		Х		Х		
Ryerson	River Ridge	Х			Х		
Meyers	River Ridge			Х			
Hentschel	River Ridge				Х		
Rankins	River Ridge					Х	
Lowry	River Ridge					Х	
Goemmer Cattle	River Ridge					Х	
Higgins	River Ridge	Х		Х			
Campbell	River Ridge				Х		
Rhodes	River Ridge				Х		
City Ranch							
T. Gonzalez	City Ranch	Х	Х	Х			
Hurley	City Ranch	Х	Х		Х		
Tobyas	City Ranch			Х			

		Table 4 Reading 22 February	s Schedu	le			
Landowner	Subdivision	Water Level	Cistern	<u>Bi-</u> Monthly	<u>Monthly</u>	Quarterly	Weekly
Dale	City Ranch				Х		
McEntee	City Ranch				Х		
Johnson	City Ranch		Х		Х		
Cordova	City Ranch			Х			
Dernell	City Ranch				Х		
Schaefer	City Ranch					Х	
Bruington	City Ranch		Х	Х			
Bartlett	City Ranch					Х	
Pennington – Birkman	City Ranch				Х		
HAUPT #1	City Ranch				Х		
Deagan	City Ranch					Х	
Bear Creek/Silver Spurs							
Andreatta/Carsella	Bear Creek				Х		
Orlie White	Silver Spurs	Х			Х		
Evenden	Silver Spurs				Х		
Roberts	Silver Spurs				Х		
Snow	Silver Spurs	Х			Х		
Cramer	Silver Spurs	Х	Х		Х		
Lyon	Silver Spurs				Х		
Jim White	Silver Spurs		Х		Х		
Garza-Vela	Silver Spurs				Х		
Modlish	Silver Spurs				Х		
Todd Eddleman	Silver Spurs				Х		
Paul Eddleman	Silver Spurs				Х		
Sample	Silver Spurs		Х		Х		
Billstrand	Silver Spurs				Х		

	Table 4         Methane Readings Schedule         (22 February 2010)						
Landowner	Subdivision	<u>Water</u> Level	<u>Cistern</u>	<u>Bi-</u> Monthly	<u>Monthly</u>	Quarterly	Weekly
Waltz	Silver Spurs				Х		
Stephens	Silver Spurs				Х		
Palmer (G/S)	Silver Spurs				Х		
Geoselbrecht	Silver Spurs				Х		
Morine	Silver Spurs				Х		
Morris	Silver Spurs					Х	
Brown	Silver Spurs	Х			Х		
Fitzner	Silver Spurs				Х		
Fischer	Silver Spurs					Х	
Wahl	Silver Spurs				Х		
Black Hawk Ranch							
Goza	Black Hawk				Х		

Rohr will be checked Quarterly with Rankin, Lowry, and Goemmer Cattle. John Fischer location is a mine vent. If possible vent will be monitored with RMLD quarterly.

	Table 5 Residences Receiving Water						
Jerry Angely	Has received water provided by PEI						
Kent Smith	Has received water provided by PEI						
Alan Cramer	Has received water provided by PEI						
Tom Gonzales	Has received water provided by PEI						
Spencer/Carol Snow	Has received water provided by PEI						
Bruington	Has received water provided by PEI						
Todd Eddleman	Has received water provided by PEI						
Paul Eddleman	Has received water provided by PEI						
Jim White	Has received water provided by PEI						
Edward Lyon	Has received water provided by PEI						
Donald Sharp	Has received water provided by PEI						
Edward Johnson	Has received water provided by PEI						
Richard McEntee	Has received water provided by PEI						
P.C. Roberts	Has received water provided by PEI						
Ireland-Murphy	Has received water provided by PEI						
Keith Lightcap	Has received water provided by PEI						
Bounds	To date has not received water provided by PEI						
Houghtling	Added to the list in January 2010						

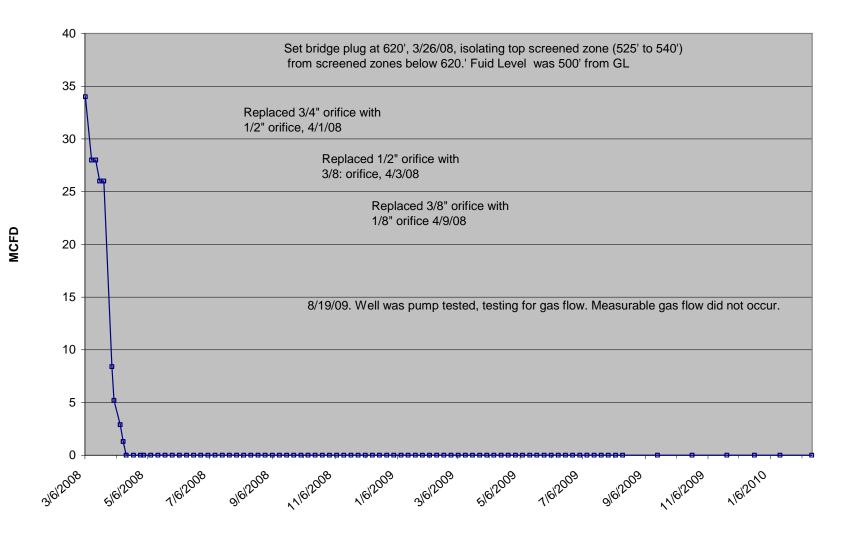
No new residences have been added during this reporting period.

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Attachment 1 Gas Flow in Monitoring Well POCI 55, Recovery 1 Kittleson, Recovery 3 PEI and Recovery 4 Barrett

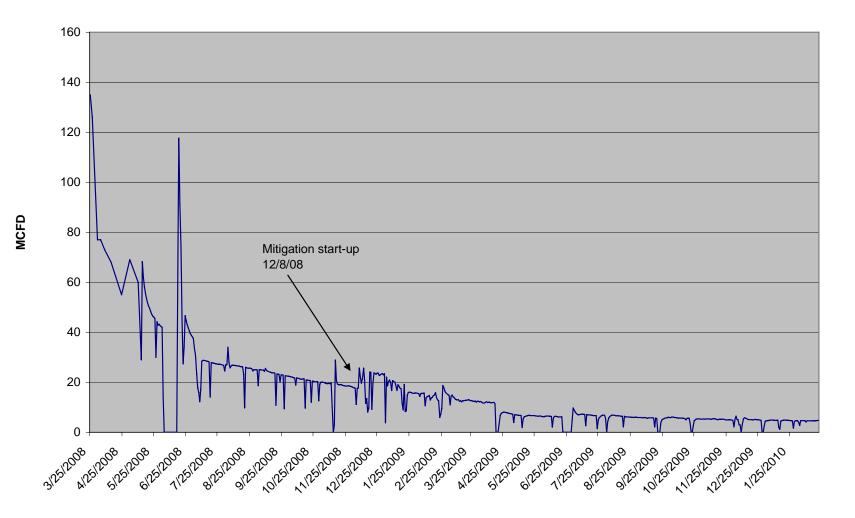
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#### POCI 55 MW Gas Flow from 3/6/08 to 2/15/10

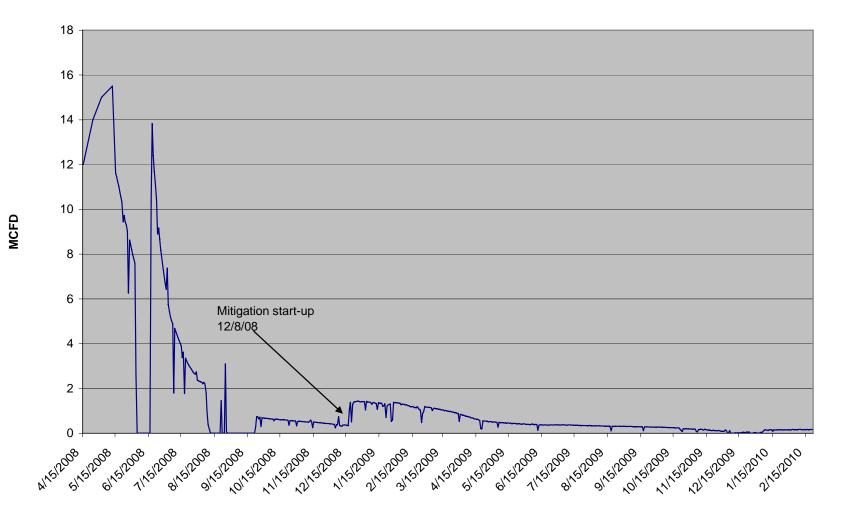


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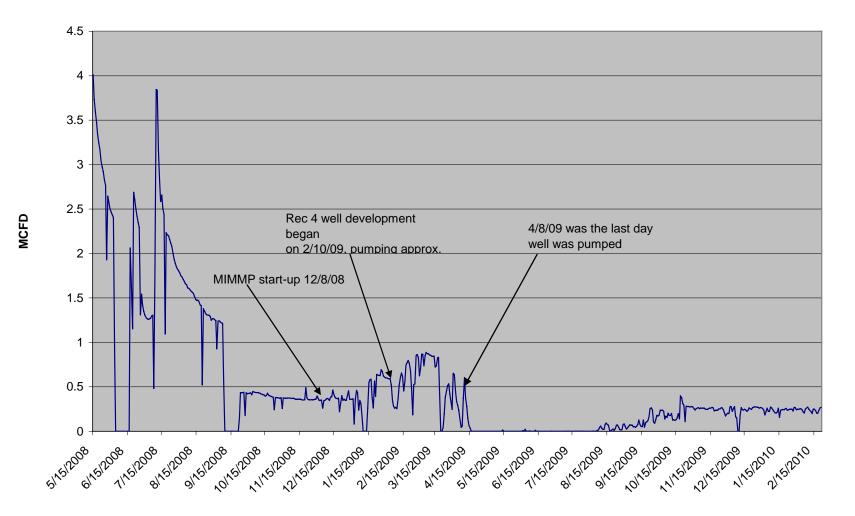
# Recovery 1 Kittleson Gas Flow from 3/25/08 to 2/21/10

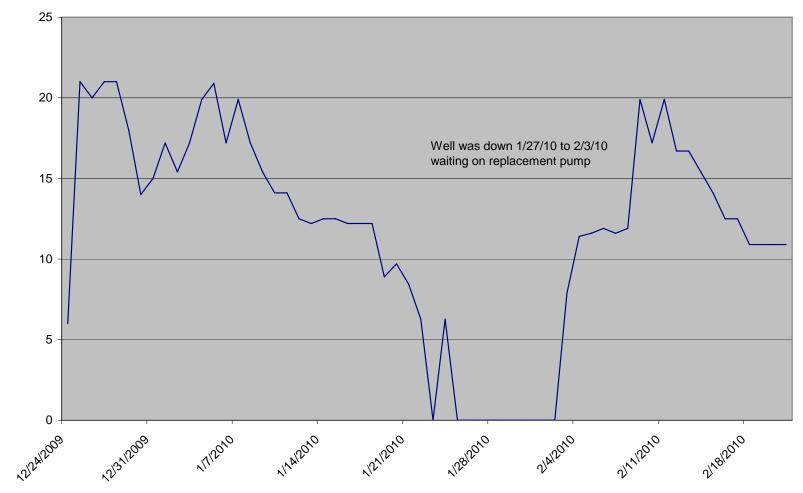


Recovery 3 PEI Gas Flow from 4/15/08 to 2/21/10



#### Recovery 4 Barrett Gas Flow from 5/15/08 to 2/21/10



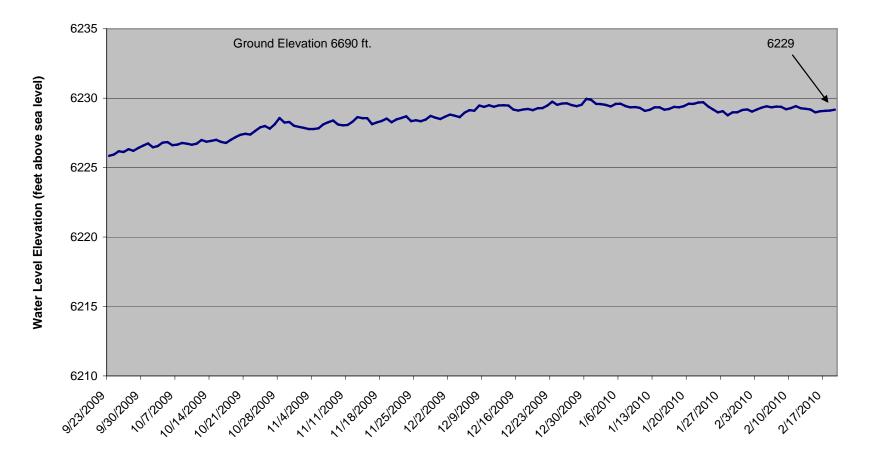


# Recovery 5 Masters Gas Flow (Masters WW 257113) from 12/24/09 to 2/21/10

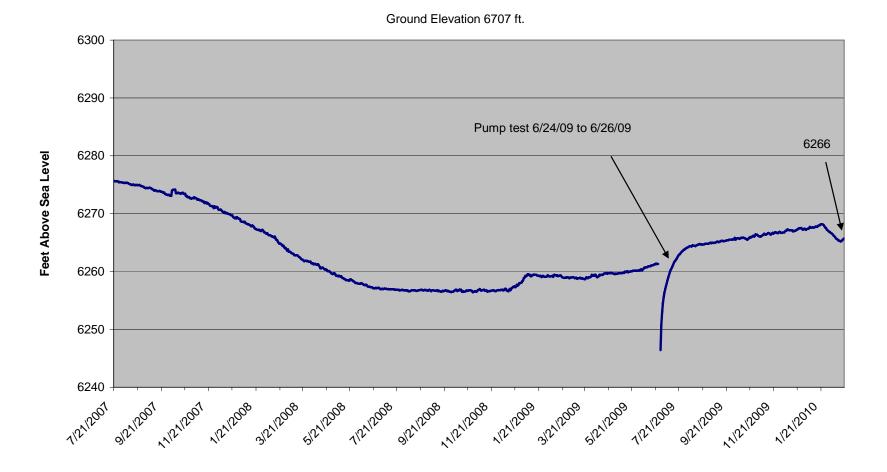
MCFD

Attachment 2 Graphs of Pressure and Fluid Level Data From POCI 55, Barrett, Bergman, Bruington, Coleman, Evenden, Garza-Vela and Meyer

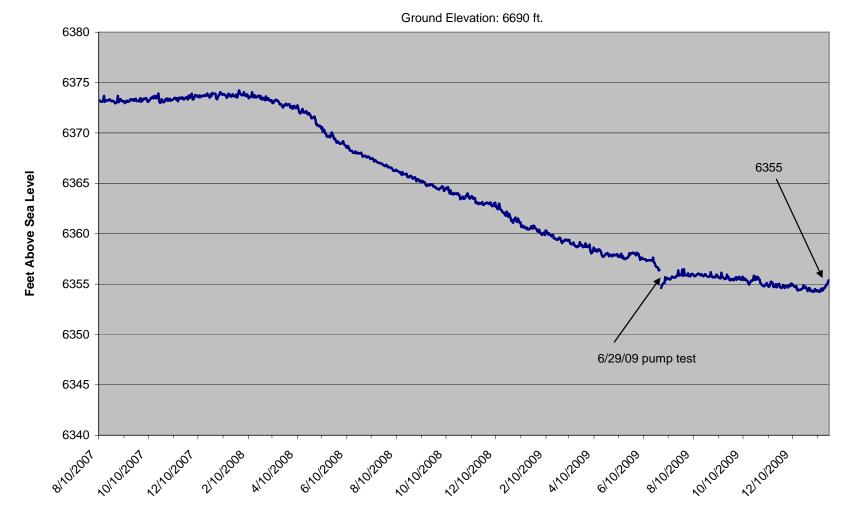
#### POCI 55 Monitor Well, Static Water Level Elevation from 4/2/08 to 2/19/10 Permit # 275819 Lot 55 RRR, SE SW Sec 3 29S 67W, GL elev. 6690'



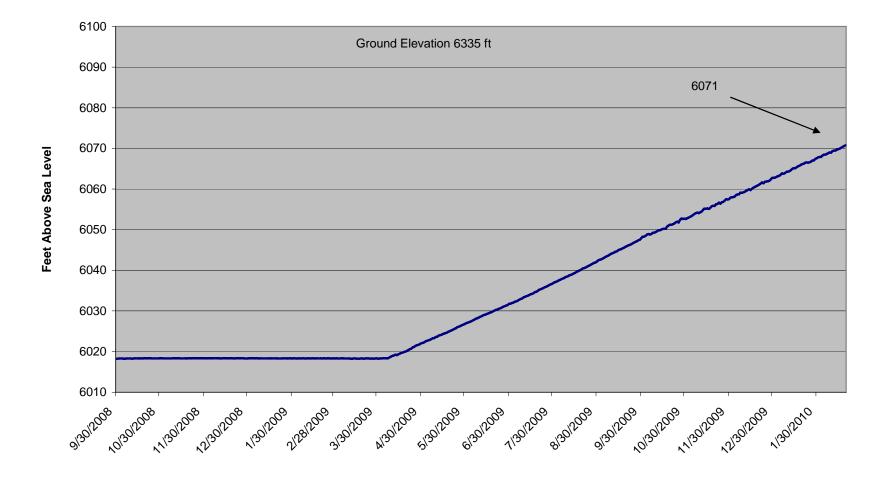
#### Barrett WW Static Water Level from 7/21/07 to 2/19/10 Permit # 257994 Lot 57 RRR



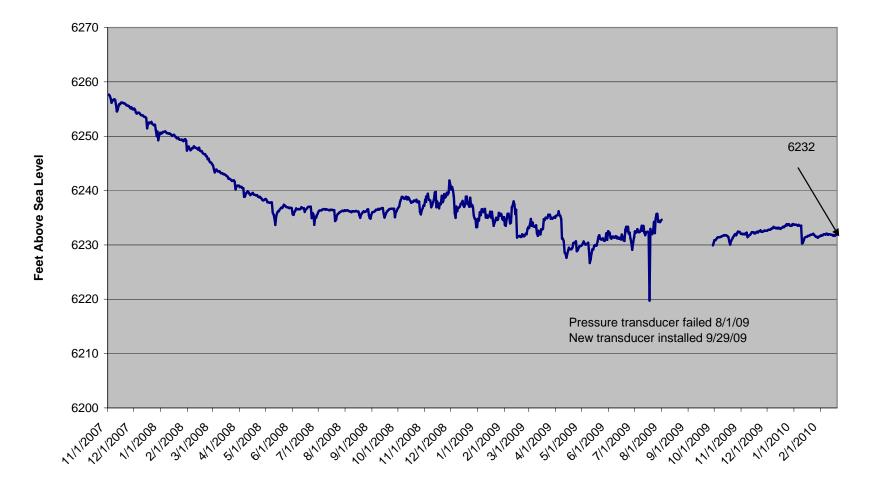
#### Bergman WW, Static Water Level from 8/10/07 to 1/23/10 Permit # 244403, Lot 48 RRR



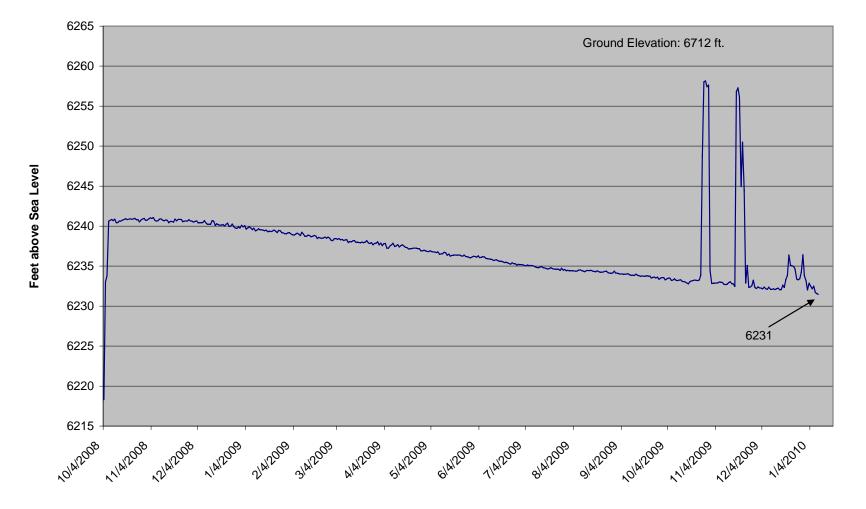
#### Bruington WW, Permit # 210526, City Ranches Lot 15 Static Water Level from 9/30/08 to 2/19/10



#### Coleman WW, Water Level from 11/1/07 to 2/19/10 Permit # 267694 Lot 70 RRR G.L. elev. 6848'

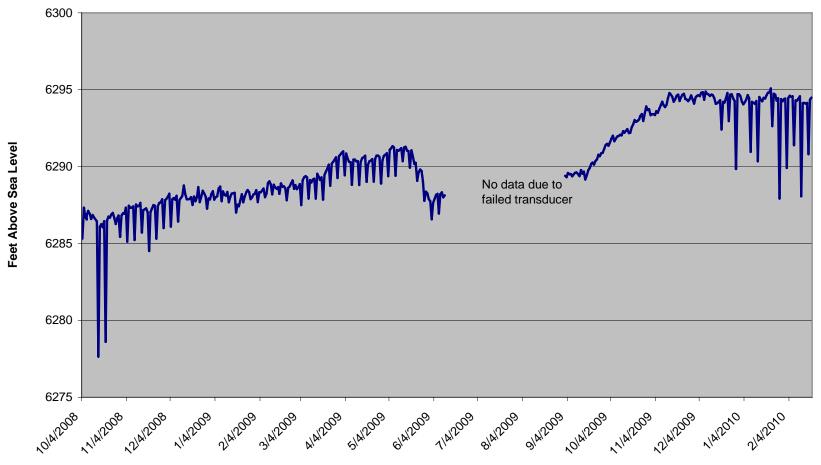


## Evenden WW Permit # 221465 Static Water Level from 10/3/08 to 1/9/10



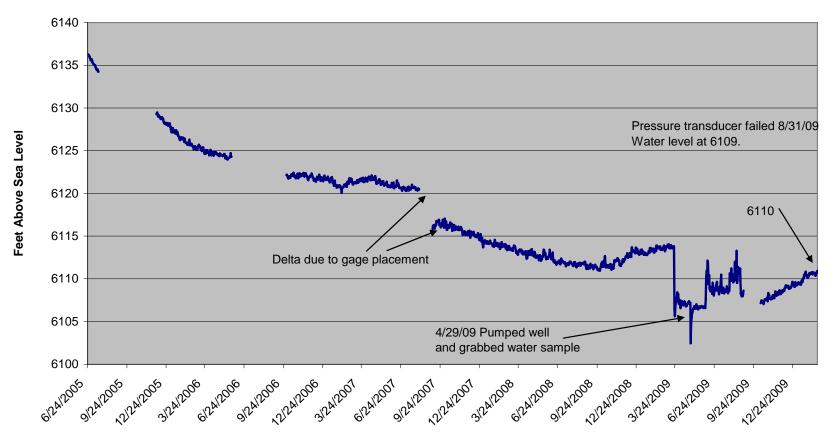
#### Garza WW, Water Level from 10/3/08 to 2/19/10 Permit # 206886, Lot 60 Silver Spurs Ranch

Ground Elevation: 6536 ft.



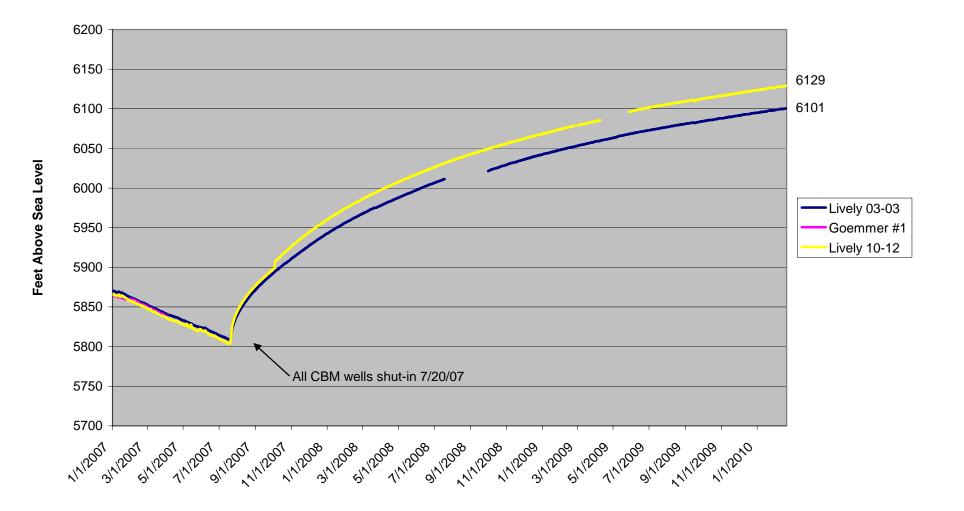
#### Meyer WW Permit # 248862 Static Water Level from 6/24/05 to 2/19/10

Ground Elevation: 6575 ft.

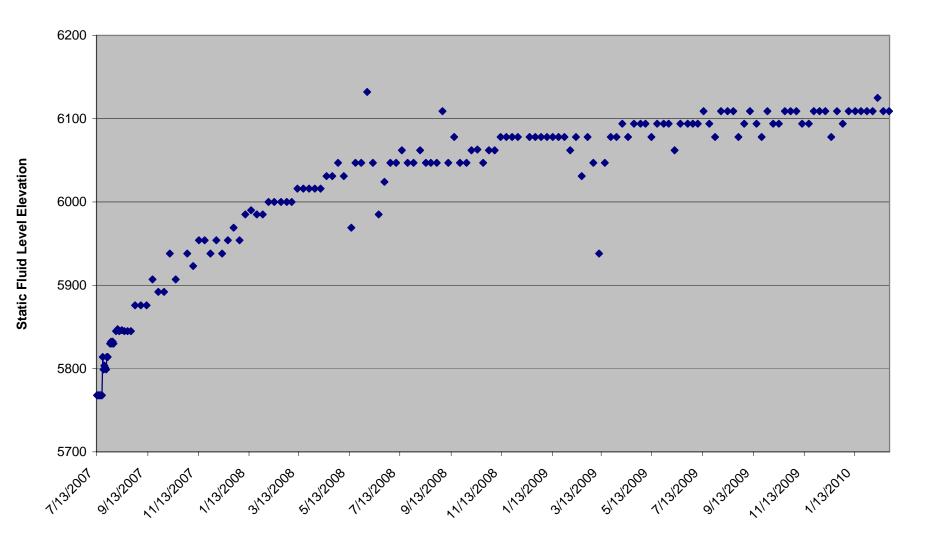


Attachment 3 Fluid Levels in Petroglyph Production Wells

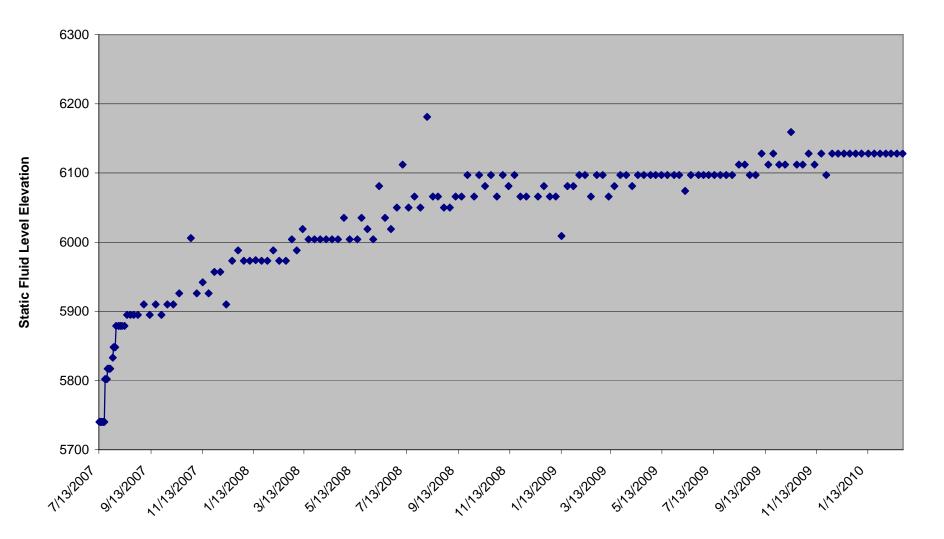
# Vermejo/Trinidad Monitor Wells Static Water Level from 1/1/07 to 2/19/10



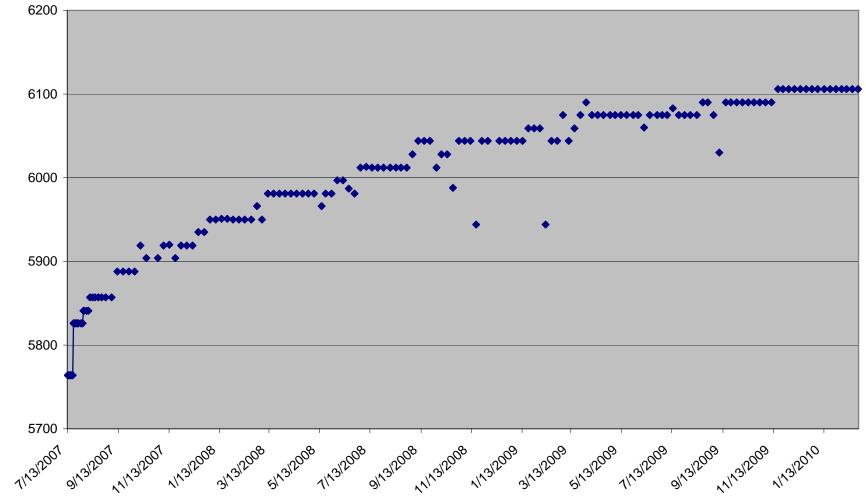
## Lively 02-02 7/13/07 thru 2/23/10 Wells shut down 7/20/07



## Lively 02-12 7/13/07 thru 2/23/10 Wells shut down 7/20/07

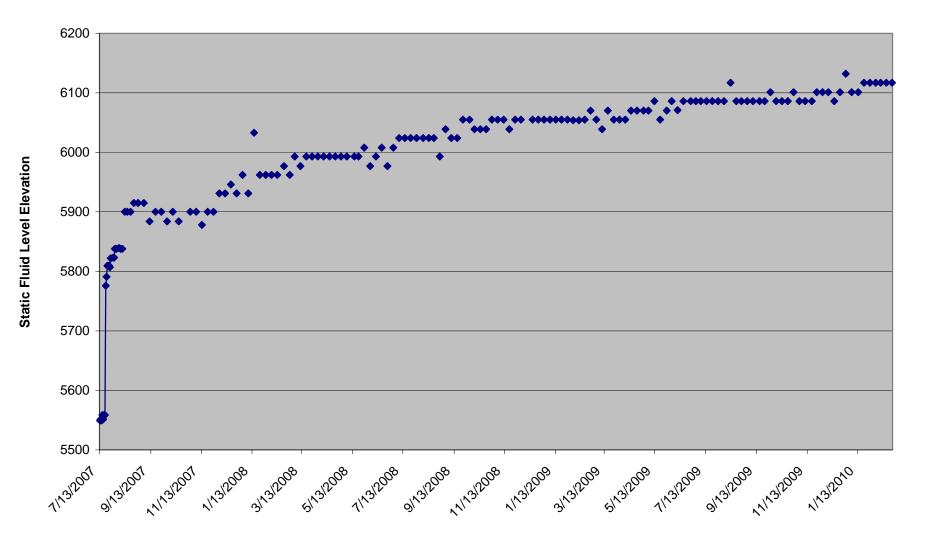


# Lively 03-01 7/13/07 thru 2/23/10 Wells shut down 7/20/07

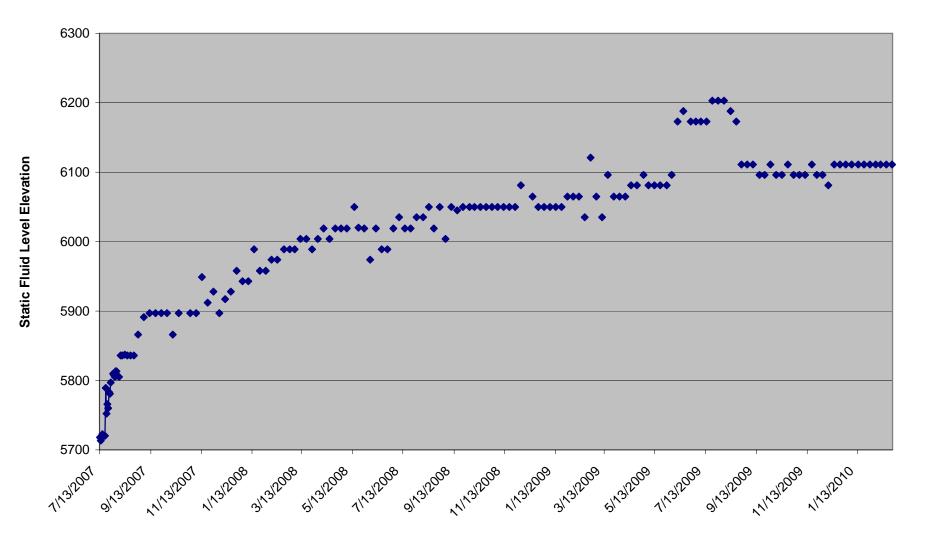


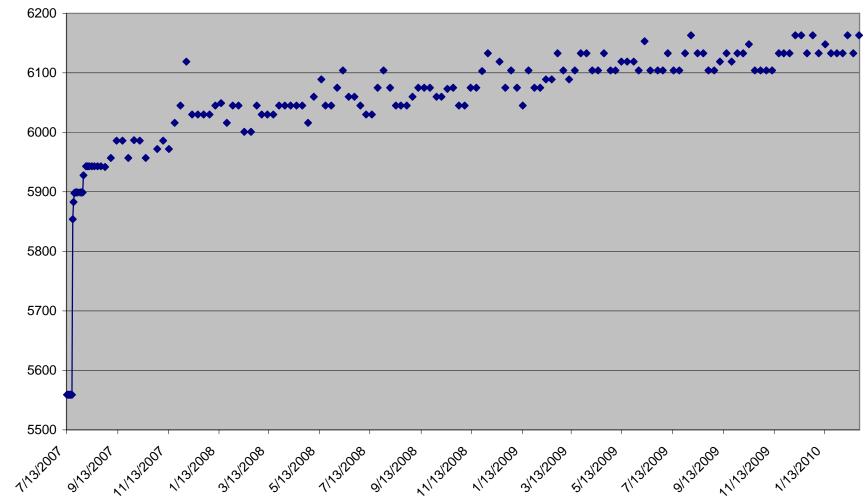
Static Fluid Level Elevation

## Lively 03-10 7/13/07 thru 2/23/10 Wells shut down 7/20/07



## Lively 03-12 7/13/07 thru 2/23/10 Wells shut down 7/20/07

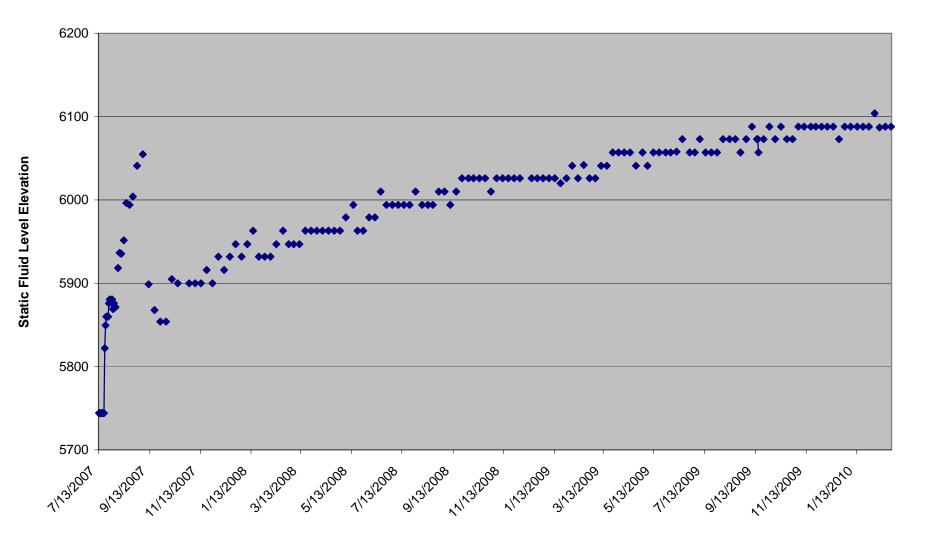




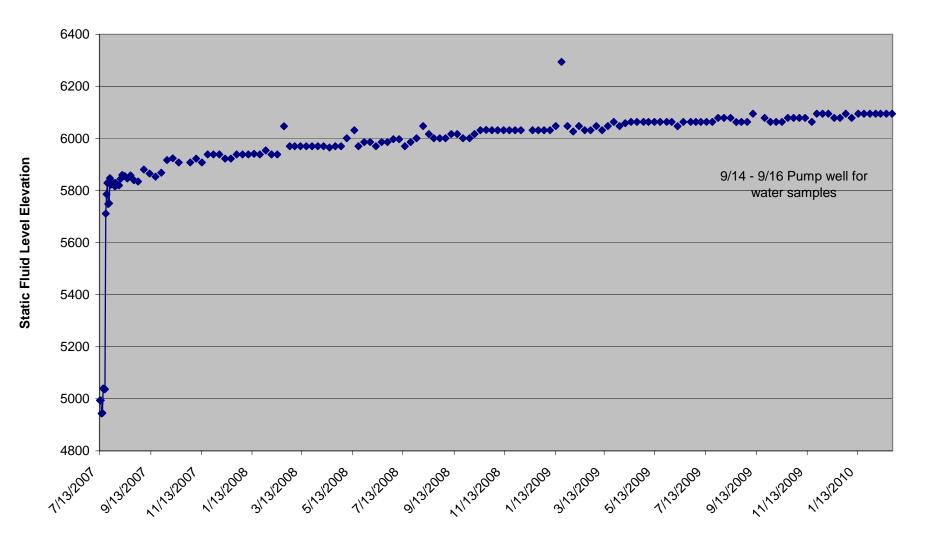
## Lively 10-04 7/13/07 thru 2/23/10 Wells shut down 7/20/07

Static Fluid Level Elevation

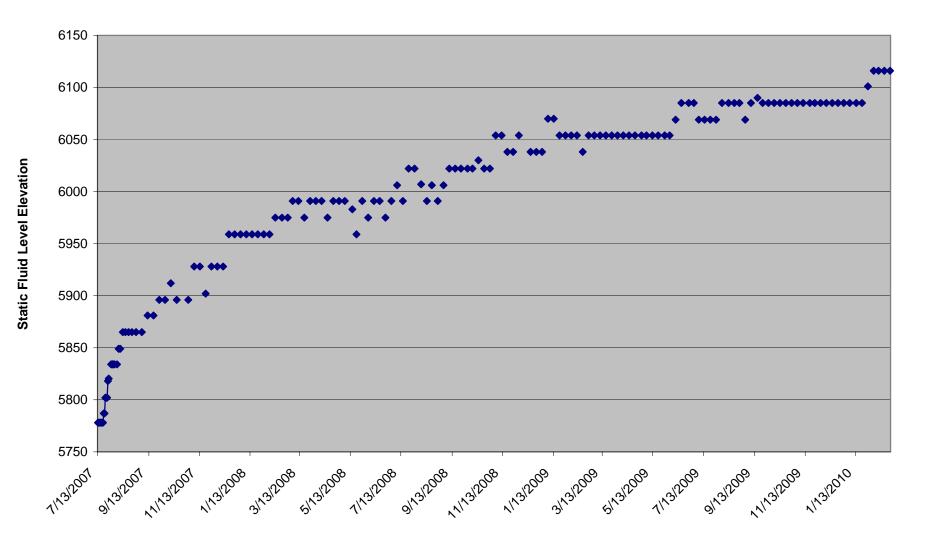
## Rohr 04-10 7/13/07 thru 2/23/10 Wells shut down 7/20/07



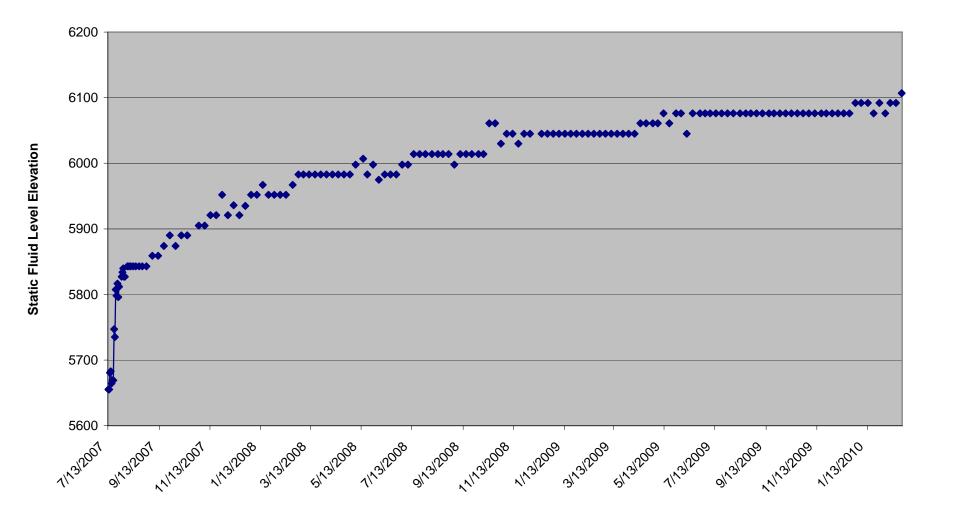
#### Rohr 09-10 7/13/07 thru 2/23/10 Wells shut down 7/20/07



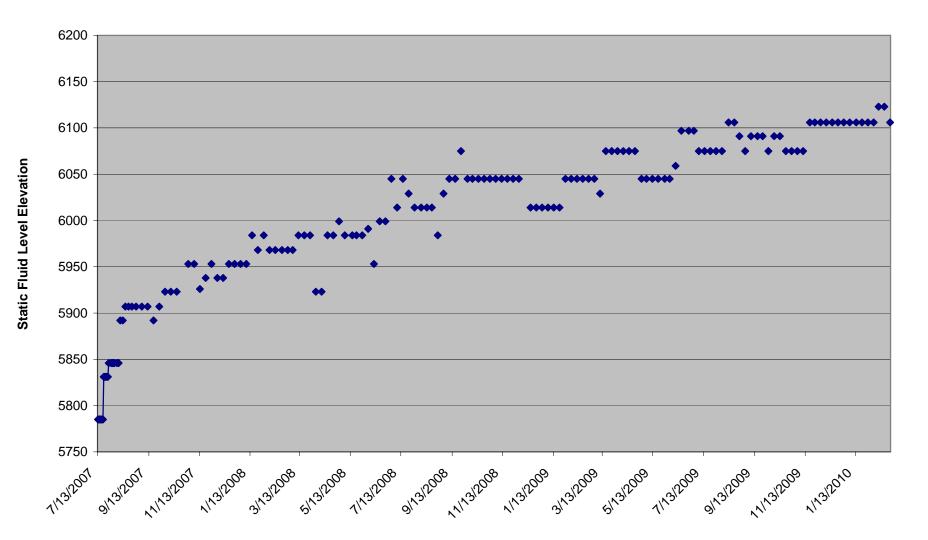
## State 36-02 7/13/07 thru 2/23/10 Wells shut down 7/20/07



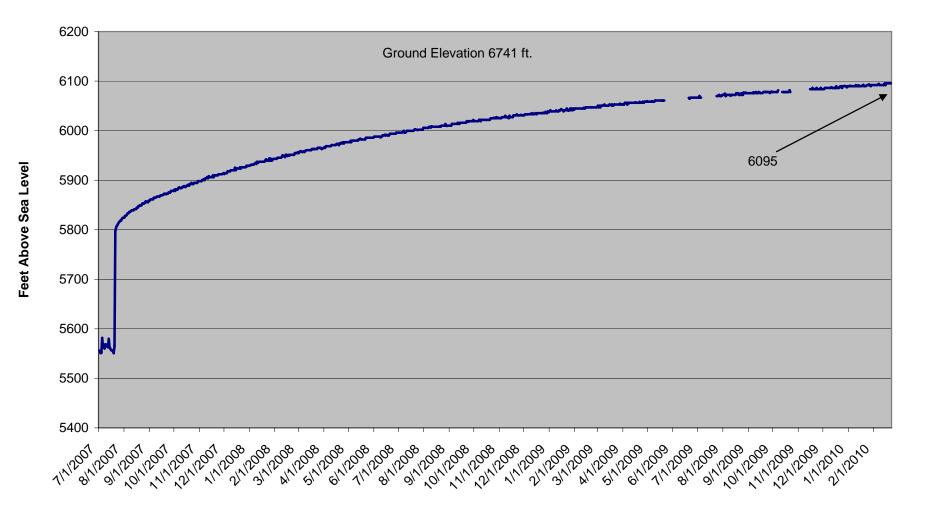
## State 36-05 7/13/07 thru 2/23/10 Wells shut down 7/20/07



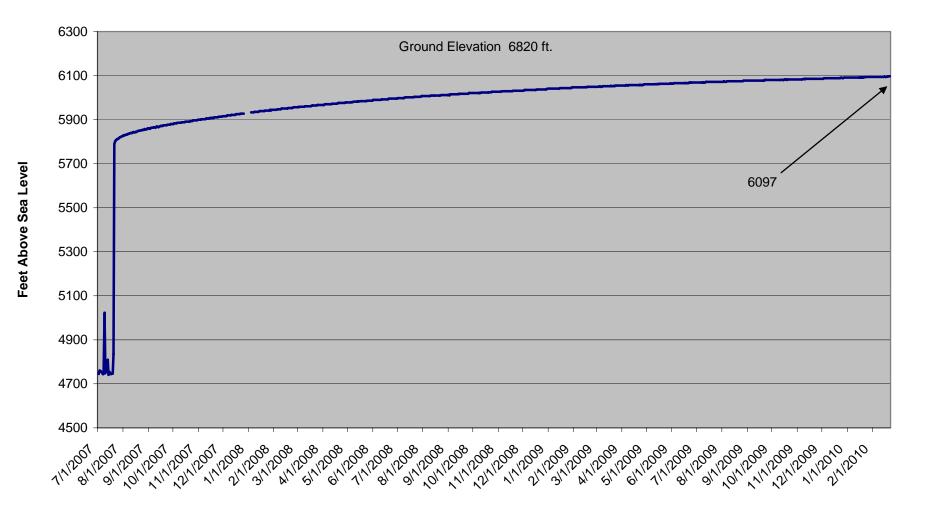
## State 36-11 7/13/07 thru 2/23/10 Wells shut down 7/20/07



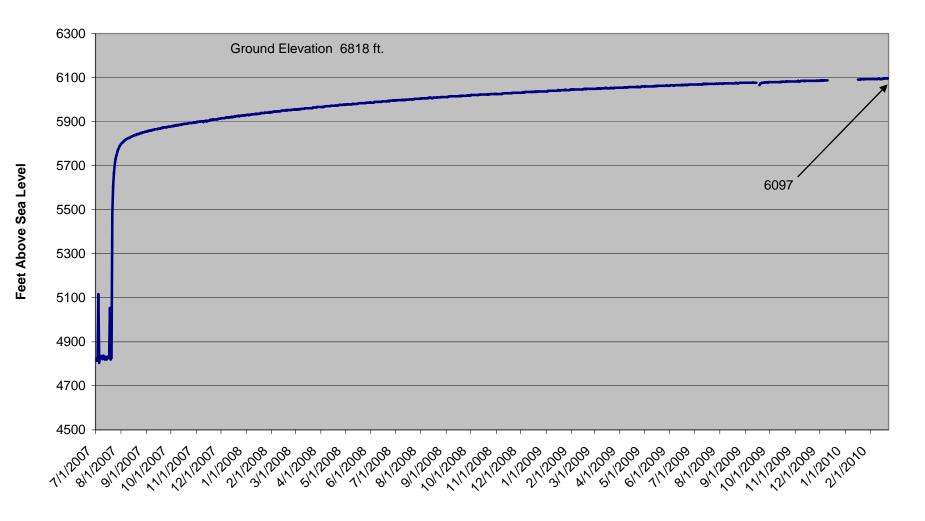
Rohr 04-14 CBM Well Static Water Level from 7/1/07 to 2/22/10 Well shut-in 7/20/07



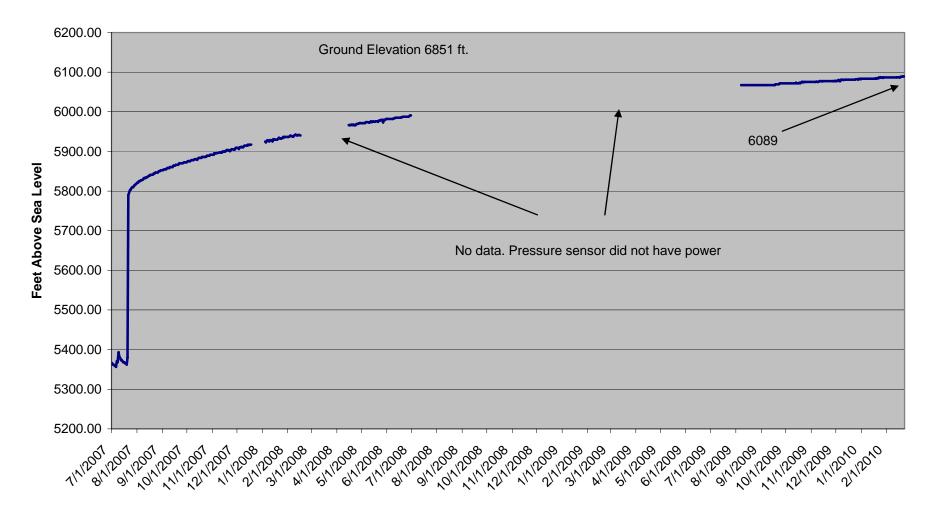
Rohr 08-01 CBM Well Static Water Level from 7/1/07 to 2/22/10 Well shut-in 7/20/07



## Rohr 09-04 CBM Well Static Water Level from 7/1/07 to 2/22/10 Well shut-in 7/20/07

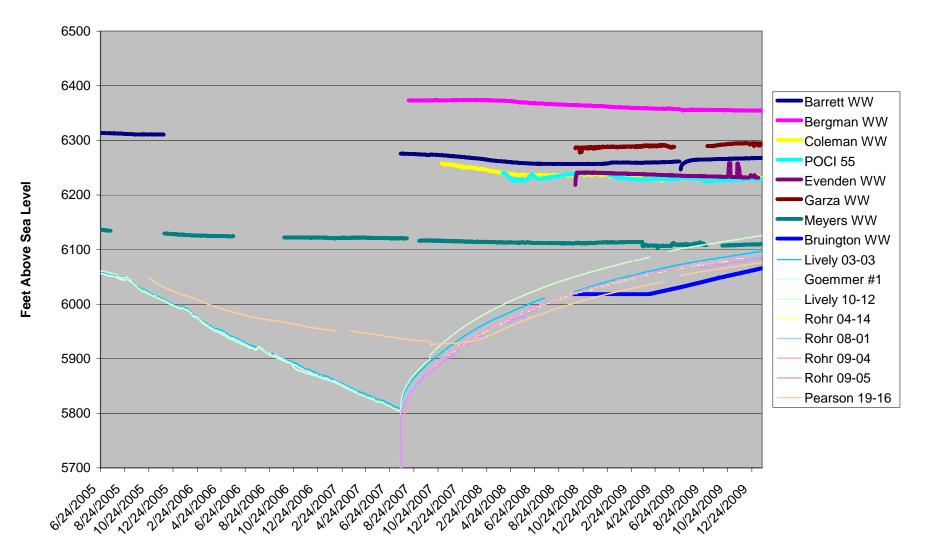


## Rohr 09-05 CBM Well Static Water Level from 7/1/07 to 2/22/10 Well shut-in 7/20/07

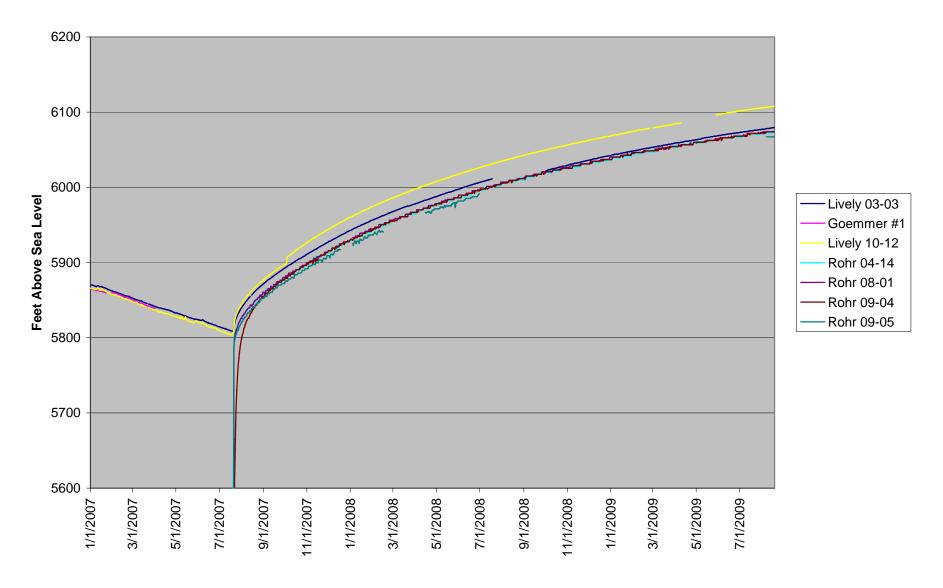


# Attachment 4 Comparison of Fluid Levels in Production Wells and Private Wells

# CBM and Domestic WW, Water Levels from 6/24/05 to 1/18/10



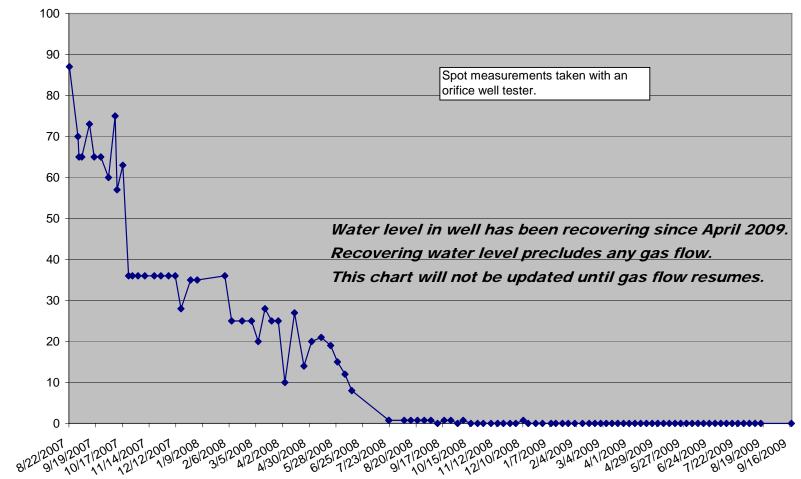
# **CBM Monitor Wells Water Level**



Summary of Production Well Water Levels and Private Well Water Levels						
Well Name	Permit or API #	Ground Elevation ( ft above mean sea level)	Depth of Pressure Sensor (ft)	Formation	General Location	Well Status
Barrett	257994	6707	750	Poison Canyon	In mitigation ring	non-active domestic well
Bergman	244403	6690	400	Poison Canyon	In mitigation ring	non-active domestic well
Coleman	267694	6848	823	Poison Canyon	In mitigation ring	active domestic well
Meyers	248862	6575	600	Raton	Outside 1 mile radius of mitigation ring	non-active domestic well
POCI 55	275819	6690	595	Poison Canyon	In mitigation ring	monitor well
Bruington	210526	6335	320	Vermejo	City Ranch near outcrop	non-active domestic well
Evenden	221465	6712	514	Vermejo-Trinidad	Silver Spurs Ranch near outcrop	active domestic well
Garza	206886	6536	288	Trinidad	Silver Spurs Ranch near outcrop	active domestic well
Lively 03-03	222539	6647	995	Trinidad	Within 1 mile radius of mitigation ring	Exploratory O&G well converted to water well (non-active)
Lively 10-12	55-06150	6825	1480	Vermejo	In mitigation ring	CBM monitor well
Goemmer #1	16861-F	6826	995	Trinidad	In mitigation ring	Exploratory O&G well converted to water well (non-active)
Rohr 04-14	55-06291	6741	2186	Vermejo-Trinidad	Within 1 mile radius of mitigation ring	Shut-in CBM well
Rohr 08-01	55-06292	6820	2365	Vermejo-Trinidad	Within 1 mile radius of mitigation ring	Shut-in CBM well
Rohr 09-04	55-06290	6818	2273	Vermejo-Trinidad	Within 1 mile radius of mitigation ring	Shut-in CBM well
Rohr 09-05	55-06289	6851	2285	Vermejo-Trinidad	Within 1 mile radius of mitigation ring	Shut-in CBM well
Pearson 19-16	55-06293	6557	1000	Vermejo	Outside 1 mile radius of mitigation ring	CBM monitor well

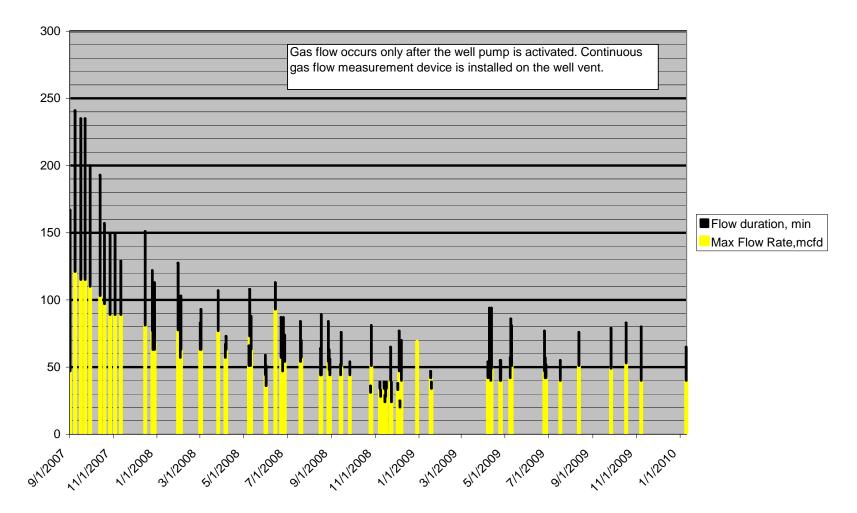
Attachment 5 Gas Flow Measurements at Bruington, Coleman, Angely, Bounds, and Smith

#### Bruington WW # 210526 Measured Gas Flow from 8/22/07 to 9/17/09



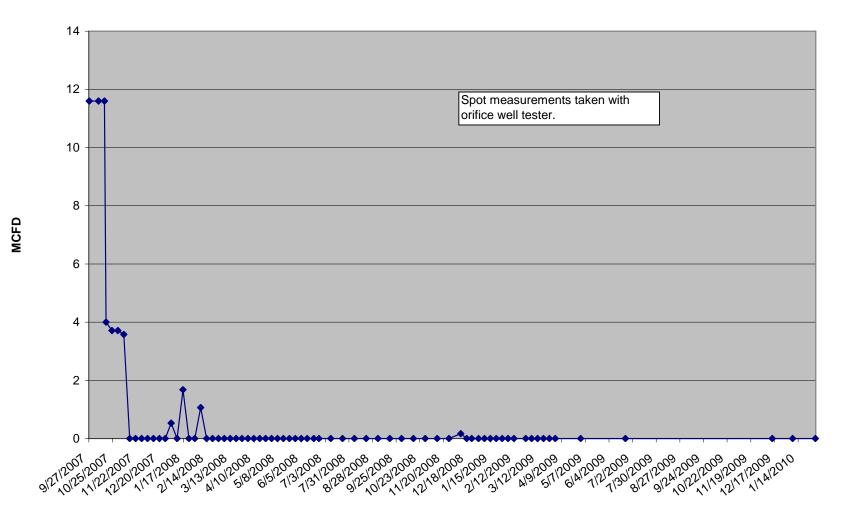
MCFD

#### Coleman WW #267294 Measured Gas Flow from 9/1/07 to 1/9/10



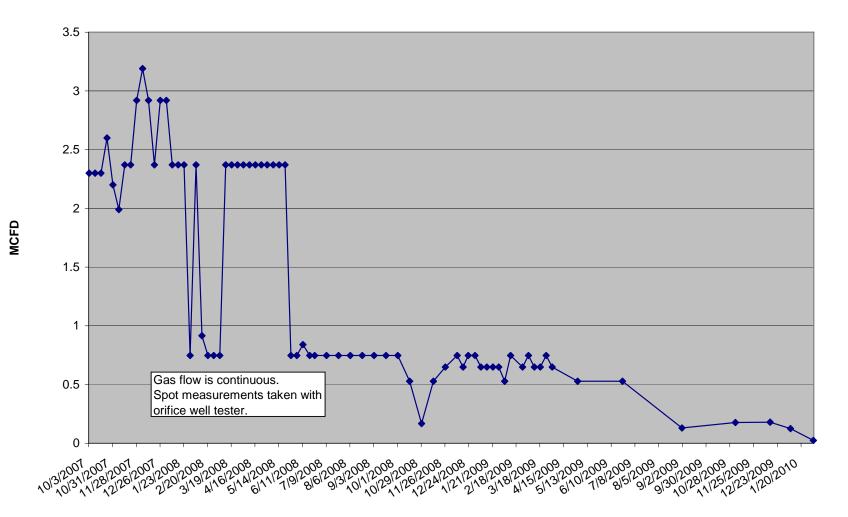
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## Angely WW # 238689 Measured Gas Flow from 9/27/07 to 2/3/10



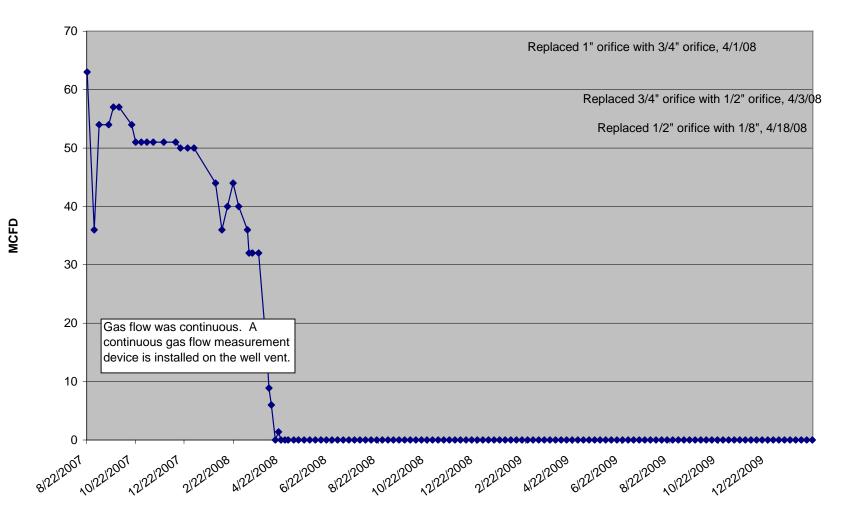
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## Bounds WW #181278 Measured Gas Flow from 10/3/07 to 2/3/10



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## Smith WW # 239657 Measured Gas Flow from 8/22/07 to 2/16/10



Attachment 6 Gas Concentrations in Private Water Wells near the Mitigation Project

