RED RIVER RANCH HOLDINGS, LLC

CENTRALIZED E&P WASTE MANAGEMENT FACILITY

ANNUAL REPORT

February 2009

Prepared for:
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

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On behalf of:
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Introduction

Red River Ranch Holdings, LLC (RRRH) developed a coal bed methane (CBM) well gathering project located in Las Animas County, Colorado. The project area is located within the Raton Basin, approximately 35 miles west of Trinidad, Colorado. This property is not a split estate with the minerals 100% owned by the surface estate owner. The project is located on RRRH within the following lands:

T35S, R67W, Section 18;
T35S, R68W, Sections 2, 10, 11, 12, 13, 14, 15, 17, and 18
T35S, R69W, Sections 12 and 13, 6th Meridian.

O&G Environmental Consulting, LLC (O&G), on behalf of RRRH, prepared and submitted a Form 28 (centralized E&P waste management facility permit) and accompanying documentation to the Colorado Oil and Gas Conservation Commission (COGCC) on August 28, 2007. RRRH wished to convert their four permitted multi-well production ponds into a single centralized E&P waste management facility. **Table 1** provides the name and location information of RRRH multi-well production ponds.

Table 1 Facility Locations

Multi-Well Production Pond Name	Legal Location	Latitude	Longitude
Pond A	SWNW, Sec.16, T35S, R68W, 6th	36.998011	-105.008615
Pond B	SWSE, Sec.11, T35S, R68W, 6th	37.008905	-104.964599
Pond D	SENE, Sec.13, T35S, R68W, 6th	36.999354	-104.939725
Pond E	SWNW, Sec.18, T35S, R67W, 6th	36.99791	-104.934684

After COGCC review of the application, supporting data package, a site visit (conducted on October 19, 2007), and receipt of financial insurance the COGCC granted a

centralized E&P waste management facility permit (#292832) to RRRH on November 5, 2007.

Accompanying the permit were several permit limitations and conditions which will be addressed in the annual report. Another permit condition not included in the initial permit but discussed prior to issuance was quarterly sampling and submittal, for one calendar year, of all multi-well production pond inflows. This additional permit condition has been added to all copies of the permit and distributed to all parties.

The information provided in this annual report is organized consistent with the numbering included in the permit limitations and conditions and form 28, respectively.

COGCC Permit Limitations and Conditions

Item 1 – Soil gas surveys for Global Resources Lorencito #1

Permit conditions require one soil gas survey to be performed in the proximity of pond E for calendar year 2008 for the Global Resources Lorencito #1 well. A survey was completed in June , 2008 by LT Environmental based out of Arvada, Colorado. The results of this survey are in **Appendix F**. A final soil gas survey will be performed when the facility is closed.

Item 2 – CBM water

RRRH's centralized waste management facility manages only coalbed methane produced water. Located in **Appendix A** is maximum and minimum water quality data for the year 2008 for RRRH's multi-well production pond outfalls. Also found in **Appendix A** is the entire suite of water quality data for RRRH's multi-well production pond outfalls.

Item 3 – Irrigation water

Irrigation return water is not managed by RRRH's centralized waste management facility.

Item 4 – Discharge permits

RRRH maintains two minimal industrial discharge permits (MINDI) for its CBM operations to directly discharge to the surface. These permits are held with the Colorado Department of Public Health and Environment (CDPHE) and include COG-600702 which is associated with multiple locations for individual coal bed methane wells and permit COG-600724 which is associated with four (4) multi-well production ponds.

To comply with the aforementioned permits RRRH, on a monthly basis, collects water samples from all outfalls, which includes 001 (Pond A), 002 (Pond B), 003 (Pond D), and 004 (Pond E). The results of sampling are compiled into a spreadsheet for analysis and once per quarter are submitted to the CDPHE as discharge monitoring reports (DMR). RRRH has completely taken over monthly and quarterly sampling from O&G. A typical sampling schedule is provided in **Table 2.**

Table 2 Sampling Schedule

Quarter	Month	Party Sampling	Number of Samples collected
2	April	RRRH	19 (outflows, inflows, Lorencito property boundary, springs, and seeps)
2	May	RRRH	6 (outflows and Lorencito property boundary)
2	June	RRRH	6 (outflows and Lorencito property boundary)

In the initial centralized E&P waste management facility application outfall 004 (Pond E) was not yet constructed. During the early Fall of 2007 Pond E was constructed and came on-line on November, 21, 2007. The above mentioned outfalls are associated with permit COG-600724. Permit COG-600702 has not had a surface discharge since May 2007; however, DMR's are still submitted to the CDPHE as *no discharge*. Located in **Table 3** and **Table 4** are sample parameters and discharge limits for permits COG-600702 and COG-600724, respectively.

Table 3
Permit COG-600702

Parameter	Discharge Limitation			Frequency	Sample Type
	30-day average	7-day average	Daily max.		
Flow, gpm	Report	NA	Report	Monthly	Instantaneous
Total Suspended Solids, mg/l	30	45	NA		Grab
pH, su. (minimum-maximum	NA	NA	6.5-9.0		Grab
Oil & Grease, mg/l	NA	NA	10		Visual
Boron, mg/l	0.75	NA	Report		Grab
Total Dissolved Solids, mg/l	Report	NA	3,500	Quarterly	Grab
Whole Effluent Toxicity, Acute	NA	NA	LC_{50}>100%		Grab

Table 4
Permit COG-600724

Parameter	Discharge Limitation			Frequency	Sample Type
	30-day average	7-day average	Daily max.		
Flow, gpm	Report	NA	Report	Monthly	Instantaneous
Total Suspended Solids, mg/l	30	45	NA		Grab
pH, su. (minimum-maximum	NA	NA	6.5-9.0		Grab
Oil & Grease, mg/l	NA	NA	10		Visual
Total Dissolved Solids, mg/l	Report	NA	Report		Grab

Item 5 – Spring and Seep sampling

On a quarterly basis RRRH collects spring and seep samples from five (5) area springs and four (4) area seeps. Due to inadequate flows and/or snow cover many springs and seeps do not have data for every quarter. Spring and seep samples are collected the first month of every quarter; however, if a sample is not collected the spring/seep will be inspected the following month to determine whether or not sampling can occur. **Table 5** shows which springs/seeps were sampled in 2008:

Table 5 Spring and Seep Sampling

Spring/Seep Name	Quarter Sampled	Comments
Canadian Spring	2, 3, 4	No flow in quarter 1
Spring Canyon Spring	2, 3, 4	No flow in quarter 1
Middle Lorencito Spring	1, 2, 3, 4	-
Lower Lorencito Spring	2, 3, 4	No flow in quarter 1
Vega Canyon Spring	2, 3, 4	No flow in quarter 1
Canadian River Seep	-	No flow all quarters
Middle Lorencito Seep	-	No flow all quarters
Spring Canyon Seep	-	No flow all quarters
Lower Lorencito Seep	-	No flow all quarters

Located in **Appendix A** is spring/seep water quality data for 2008.

Item 6 – Annual Report submitted February, 2009 to COGCC.

Item 7 – COGCC Audit

As required by the centralized E&P waste management facility permit limitations and conditions a COGCC audit is to be performed by COGCC staff or contractor on an annual basis. A COGCC audit was performed in July, 2008 by Margaret Ash. The presence of the Global Resource Lorencito #1 well was discovered and addressed in the permit limitations and conditions.

Item 8 – Inflow Sampling

Not addressed in the official permit limitations and conditions but discussed prior to issuance was quarterly sampling of all multi-well production pond inflows for one calendar year. This condition was discussed in a conversation between Rich Larson (CBM Manager, RRRH) and Margaret Ash (Environmental Protection Supervisor at the COGCC) and was officially added to the permit conditions on November 7, 2007. RRRH sampled pond inflows on a quarterly basis; therefore, **Appendix A** includes all 2008 inflow data. Sampling of multi-well production pond inflows will be completed in December 2008.

COGCC Form 28 Requirements

The following provides relevant annual information consistent with the COGCC Form 28 centralized E&P waste management facility permit application. Several items were omitted because they were addressed in the initial application and have not changed.

Item 2 – Climate Data

Climatic data is provided from the Western Region Climate Center for the year 2008 from the Trinidad FAA airport, Colorado. For the year 2008 the average monthly temperature ranges from a low of 31.63^0 F in January to a high of 75.60^0 F in July. The monthly mean maximum temperature ranges from a low of 46.16^0 F in January to a high of 91.10^0 F in July, while the monthly mean minimum temperature ranges from a low of 17.10^0 F in January to a high of 60.10^0 F in July.

The annual precipitation for 2007 is 9.25 inches, with a maximum of 3.36 inches in August and a minimum of 0.00 inches in November. Because of the higher elevations in the project area, temperatures are expected to be lower and precipitation is expected to be higher at the facility than the Trinidad FAA airport.

Item 5 – Topographic Map

A topographic map of the centralized E&P waste management facility, including the multi-well production pond inflows, outfalls, springs, and seeps is included in **Appendix B**.

Item 6 – Site Plan

No additions or modifications were applied to the centralized waste management facility site plan.

Item 9 – Security Plan

Construction of all perimeter fencing for the multi-well production ponds was completed in November 2007. The six foot high wire mesh fences restrict access from wildlife and deter potential vandals from accessing the site. Access to the centralized waste management facility is through a locked gate. Also, all visitors must check in at RRRH headquarters prior to entering the project through locked secured gate access.

Item 10- Fire Lane

An exemption was requested and granted for a fire lane adjacent to each multi-well production pond; however, there are roads adjacent to all ponds. A review of the water management facility was conducted in late 2007 with the local fire chief; a summary of that review is found in **Appendix C**.

Item 11 – Buffer Zone

An exemption was requested and granted for a buffer zone for RRRH's centralized E&P waste management facility.

Item 12 – Diversion Structures

There are no surface water diversion structures for RRRH's centralized E&P waste management facility.

Item 13 – Stored Material Profile

Appendix D shows the multi-well production pond volumes for the year 2007. Below is a list of what is included in **Appendix D**:

- Monthly pond volume per pond
- Average monthly pond volume per pond
- Total pond volume per pond
- Total monthly pond volume
- Average monthly pond volume
- Total pond volume for 2007

Construction of Pond E began in late September 2007 and was completed at the beginning of November. Pond E came on-line on November 21, 2007.

Item 15 – Operating Plan

There were no changes in RRRH's centralized E&P waste management facility. The operating plan is provided in **Appendix E**.

Item 16 – Ground Water Monitoring

Ground water monitoring is not required because Pond D and E, both located in sensitive areas, are lined. Specifications regarding the liner were provided in the initial permit application.

Item 18 – Closure Plan

The closure plan was submitted with the original permit application.

SUMMARY

RRRH's objective is to return the ranch to an environmentally sound and aesthetically pleasing condition through the management objectives outlined in its *Guiding Principles*. This includes the development of CBM resources underlying the property. The development of the proposed CBM facilities will be guided by the management practices of the ranch throughout the planning/designing, construction, and operation phases. RRRH is providing the COGCC with a centralized E&P waste management facility annual report as outlined in the permit limitations and guidelines for permit # 292832.

Appendix A

Coal Bed Methane

Produced Water Quality Data

Red River Ranch Multi-Well Production Pond Water Quality Data		
Outfall 001 - Pond A (January 2008 - December 2008)		
Parameter	**Result**	
	Maximum	**Minimum**
Alkalinity (mg/l as $CaCO_3$)	918.00	617.00
pH	8.90	8.30
Conductivity (µs/cm)	1529.00	1098.00
Total Dissolved Solids (TDS) (mg/l)	979.00	726.00
Total Suspended Solids (TSS) (mg/l)	8.20	ND
Manganese, Total (mg/l)	0.14	0.01
Iron, Total (mg/l)	3.48	0.38
Iron, dissolved (mg/l)	0.39	0.03
Manganese, dissolved (mg/l)	0.04	0.01
Chloride (mg/l)	143.00	13.40
Sulfate (mg/l)	61.20	32.10
Fluoride (mg/l)	<0.1	<0.1
Calcium (mg/l)	27.30	7.00
Magnesium (mg/l)	16.30	2.90
Sodium (mg/l)	380.00	285.00
SAR	26.90	11.60
Bicarbonate as $CaCO_3$ (mg/l)	909.00	610.00

Abbreviations: mg/l milligrams per liter; µs/cm micromhos per centimeter;
ND - non detect

Red River Ranch Multi-Well Production Ponds Water Quality Data		
Outfall 002 - Pond B **(January 2008 - December 2008)**		
Parameter	**Result**	
	Maximum	**Minimum**
Alkalinity (mg/l as $CaCO_3$)	852.00	564.00
pH	8.60	8.20
Conductivity (µs/cm)	1220.00	892.00
Total Dissolved Solids (TDS) (mg/l)	868.00	679.00
Total Suspended Solids (TSS) (mg/l)	5.00	0.50
Manganese, Total (mg/l)	0.17	0.04
Iron, Total (mg/l)	1.70	0.42
Iron, dissolved (mg/l)	0.18	0.02
Manganese, dissolved (mg/l)	0.04	0.01
Chloride (mg/l)	54.90	10.30
Sulfate (mg/l)	46.50	27.00
Fluoride (mg/l)	<0.1	<0.1
Calcium (mg/l)	25.10	10.50
Magnesium (mg/l)	13.50	4.80
Sodium (mg/l)	305.00	240.00
SAR	17.20	10.30
Bicarbonate as $CaCO_3$ (mg/l)	848.00	490.00

Abbreviations: mg/l milligrams per liter; µs/cm micromhos per centimeter;
ND - non-detect

Red River Ranch Multi-Well Production Ponds Water Quality Data		
Outfall 003 - Pond D **(January 2008 - December 2008)**		
Parameter	**Result**	
	Maximum	**Minimum**
Alkalinity (mg/l as $CaCO_3$)	918.00	617.00
pH	8.90	8.30
Conductivity (µs/cm)	1529.00	1098.00
Total Dissolved Solids (TDS) (mg/l)	979.00	726.00
Total Suspended Solids (TSS) (mg/l)	8.20	0.90
Manganese, Total (mg/l)	0.14	0.01
Iron, Total (mg/l)	3.48	0.38
Iron, dissolved (mg/l)	0.39	0.03
Manganese, dissolved (mg/l)	0.04	0.01
Chloride (mg/l)	143.00	13.40
Sulfate (mg/l)	61.20	32.10
Fluoride (mg/l)	<0.1	<0.1
Calcium (mg/l)	27.30	7.00
Magnesium (mg/l)	16.30	2.90
Sodium (mg/l)	380.00	285.00
SAR	26.90	11.60
Bicarbonate as $CaCO_3$ (mg/l)	909.00	610.00

Abbreviations: mg/l milligrams per liter; µs/cm micromhos per centimeter;
ND - non-detect

Red River Ranch Multi-Well Production Ponds Water Quality Data		
Outfall 004 - Pond E **(January 2008 - December 2008)**		
Parameter	**Result**	
	Maximum	**Minimum**
Alkalinity (mg/l as $CaCO_3$)	966.00	524.00
pH	9.00	8.30
Conductivity (µs/cm)	1490.00	888.00
Total Dissolved Solids (TDS) (mg/l)	963.00	582.00
Total Suspended Solids (TSS) (mg/l)	5.00	0.90
Manganese, Total (mg/l)	0.16	0.04
Iron, Total (mg/l)	4.96	0.65
Iron, dissolved (mg/l)	0.70	0.05
Manganese, dissolved (mg/l)	0.04	0.01
Chloride (mg/l)	56.20	10.40
Sulfate (mg/l)	76.20	4.50
Fluoride (mg/l)	<0.1	<0.1
Calcium (mg/l)	27.70	4.90
Magnesium (mg/l)	13.10	0.89
Sodium (mg/l)	354.00	231.00
SAR	137.00	10.40
Bicarbonate as $CaCO_3$ (mg/l)	762.00	483.00

Abbreviations: mg/l milligrams per liter; µs/cm micromhos per centimeter;
ND - non-detect

2008 Red River Ranch Water Sampling Data

Outfall 001

Pond A

Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit	Monthly (Qtr Analysis) January	Monthly (Qtr Analysis) February	Monthly (Qtr Analysis) March	Monthly (Qtr Analysis) April	Monthly (Qtr Analysis) May	Monthly (Qtr Analysis) June	Monthly (Qtr Analysis) July	Monthly (Qtr Analysis) August	Monthly (Qtr Analysis) September	Monthly (Qtr Analysis) October	Monthly (Qtr Analysis) November	Monthly (Qtr Analysis) December
	Month							January	February	March	April	May	June	July	August	September	October	November	December
	Sample Location (outflow)							**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**
	Sampling Completed Date:							9-Jan-08	21-Feb-08	13-Mar-08	3-Apr-08	6-May-08	12-Jun-08	9-Jul-08	5-Aug-08	5-Sep-08	3-Oct-08	6-Nov-08	16-Dec-08
Field	Flow	X	X	bpd	report			7458	7096	6653	3740	6364							
	Temperature	X	X	^{0}C				6			12.7								
	pH	X	X	s.u.	6.5 - 9.0			8.88			8.53								
	Specific conductance	X	X	µs				1791			1038								
	Oil & Grease	X	X		10			no			no								
Laboratory	Chlorine	X	X	mg/l		0.011		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Alkalinity	X	X	mg/l as $CaCO_3$				557	520	659	496	615	640	532	693	675	671	632	652
	Hardness	X	X	mg/l as $CaCO_3$				10	6	9	7	15	40	18	8	26	3	10	77
	pH	X	X	s.u.	6.5-9.0			8.8	8.9	8.8	8.8	8.8	8.8	8.7	8.4	8.8	8.8	8.7	8.8
	Temperature	X	X	^{0}C				2.1	2.9	14.8	1.0	1.8	3.2	1.7	1.6	3.8	3.6	4.6	7.7
	Dissolved Oxygen	X	X	mg/l		5		2.5	8.7	4.5	6.4	4.6	7.2	3.4	4.8	5.9	3.7	6.2	7.3
	Conductivity	X	X	µs/cm				1045	1034	1085	1002	968	1039	864	783	545	926	989	801
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			762	833	620	598	670	683	597	671.2	393.0	587.0	637.0	580.0
	Total Solids	X	X	mg/l				762	837	624	599.1	671.7	684.9	601.1	677.6	395.8	588.1	639.1	581.2
	Total Suspended Solids (TSS)	X	X	mg/l	30			ND	4	4	1.1	1.7	1.9	4.1	6.4	2.8	1.1	2.1	1.2
	Manganese, Total	X	X	mg/l			0.001	0.020	0.040	0.020	0.040	0.040	0.100	0.080	0.040	0.080	0.060	0.070	0.060
	Iron, Total	X	X	mg/l			0.001	0.34	0.47	0.53	1.10	0.56	5.20	1.70	0.53	1.61	0.86	1.74	0.99
	Mercury, Total	X		mg/l		0.00001	0.001												
	Silica, Total	X		mg/l			0.001												
	Barium, dissolved	X	X	mg/l			0.001	0.010	0.060	0.050	0.050	0.080	0.050	0.050	0.080	0.060	0.060	0.040	0.030
	Boron, dissolved	X	X	mg/l	0.75		0.001	0.160	0.160	0.050	0.150	0.140	0.160	0.140	0.170	0.150	0.150	0.170	0.130
	Cadmium, dissolved	X		mg/l		0.002	0.001												
	Copper, dissolved	X		mg/l		0.006	0.001												
	Iron, dissolved	X	X	mg/l			0.001	0.040	0.090	0.140	0.100	0.120	0.510	0.310	0.120	0.280	0.240	0.200	0.120
	Lead, dissolved	X		mg/l		0.00156297	0.001												
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	0.01	<.01	<.01	0.01	0.02	<0.01	0.02	0.01	<0.01	0.04	0.01	<.01
	Nickel, dissolved	X		mg/l		0.036003	0.001												
	Silver, dissolved	X		mg/l		0.000151558	0.001												
	Zinc,dissolved	X		mg/l		0.08173983	0.001												
	Selenium,dissolved	X		mg/l		0.0046	0.001												
	Iron, Total recoverable	X		mg/l		1.805	0.001												
	Arsenic, Total recoverable	X		mg/l															
	Chloride	X	X	mg/l			0.1	25.3	40.8	37.4	19.8	16.5	19.8	22.0	18.7	22.1	17.6	20.5	15.6
	Sulfate	X	X	mg/l			0.1	23.4	26.4	24.3	24.9	27.6	30.2	21	24.9	27.9	24.6	28.8	25.5
	Fluoride	X		mg/l			0.1	<0.1	<.01	<.1	<.1	<.1	<.1	<.01	<0.1	<0.1	<0.1	<0.1	<0.1
	Nitrate	X		mg/l		100	0.1												
	Nitrite	X		mg/l		0.5	0.1												
	Phosphate	X		mg/l			0.1												
	Ortho-phosphate	X		mg/l			0.1												
	Calcium	X	X	mg/l				2.4	4.1	4.4	4.0	4.4	5.2	5.2	5.0	4.7	4.6	5.3	3.1
	Magnesium	X	X	mg/l				0.05	0.5	0.55	0.54	0.5	0.72	0.8	0.61	0.69	0.55	0.67	0.46
	Sodium	X	X	mg/l				240	252	255	232	247	267	215	257	267	265	257	259
	SAR	X	X					41.9	14.1	14.7	31.9	32.4	32.2	23.1	28.8	30.4	31.0	27.9	36.2
	Chromium, Total	X		mg/l			0.01												
	Chromium 6	X		mg/l		0.011	0.01												
	Chromium 3	X		mg/l		0.052	0.01												
	Potassium	X		mg/l				1.0	1.3	1.1	0.5	1.1	1.2	0.8	1.5	1.3	1.2	1.3	1.1
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	469.0	465.0	490.0	570.0	607.0	632.0	525.0	634.0	652.0	660.0	629.0	641.0

2008 Red River Ranch Water Sampling Data

Outfall 002
Pond B

								Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly
								(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)
	Month							January	February	March	April	May	June	July	August	September	October	November	December
	Sample Location (outflow)							**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**
	Sampling Completed Date:							9-Jan-08	21-Feb-08	13-Mar-08	3-Apr-08	6-May-08	12-Jun-08	9-Jul-08	5-Aug-08	5-Sep-08	3-Oct-08	6-Nov-08	16-Dec-08
Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit												
Field	Flow	X	X	bpd	report			2050	1991	1840	1974	1760							
	Temperature	X	X	^{0}C				5			9.7								
	pH	X	X	s.u.	6.5 - 9.0			8.3			8.13								
	Specific conductance	X	X	µs				1681			1171								
	Oil & Grease	X	X		10			no			no								
Laboratory	Chlorine	X	X	mg/l		0.011		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1		0.918	0.509	0.061	0.146	0.158	0.031	0.004	0.000	0.002	0.000	0.000	0.227
	Alkalinity	X	X	mg/l as $CaCO_3$				638	564	808	683	752	812	709	820	852	838	810	755
	Hardness	X	X	mg/l as $CaCO_3$				47	47	49	60	49	62	58	51	56	35	49	123
	pH	X	X	s.u.	6.5-9.0			8.5	8.6	8.4	8.5	8.2	8.6	8.4	8.3	8.5	8.6	8.6	8.5
	Temperature	X	X	^{0}C				2.1	2.9	14.8	1.0	1.8	3.2	1.7	1.6	3.8	3.6	4.6	7.5
	Dissolved Oxygen	X	X	mg/l		5		5.4	8.9	6.6	8.1	7.5	7.5	4.3	7.1	6.9	5.9	6.8	7.9
	Conductivity	X	X	µs/cm				1170	1139	1172	1146	1100	1220	1035	1120	1111	1161	1157	892
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			679	868	689	725	702	727	756	708	723	684	727	700
	Total Solids	X	X	mg/l				683	870	694	729.1	705.7	727.5	758.2	711.7	726.3	685.2	728.9	703.6
	Total Suspended Solids (TSS)	X	X	mg/l	30			4	2	5	4.1	3.7	0.5	2.2	3.5	3.3	1.2	1.9	3.6
	Manganese, Total	X	X	mg/l			0.001	0.040	0.060	0.050	0.080	0.040	0.140	0.170	0.160	0.110	0.100	0.050	0.050
	Iron, Total	X	X	mg/l			0.001	0.72	0.91	0.58	1.30	0.75	1.00	0.42	0.83	1.15	1.00	1.35	1.70
	Mercury, Total	X		mg/l		0.00001	0.001												
	Silica, Total	X		mg/l			0.001												
	Barium, dissolved	X	X	mg/l			0.001	0.020	0.130	0.120	0.130	0.130	0.130	0.120	0.130	0.160	0.130	0.110	0.070
	Boron, dissolved	X	X	mg/l	0.75		0.001	0.260	0.280	0.120	0.270	0.250	0.280	0.250	0.250	0.250	0.260	0.270	0.190
	Cadmium, dissolved	X		mg/l		0.002	0.001												
	Copper, dissolved	X		mg/l		0.006	0.001												
	Iron, dissolved	X	X	mg/l			0.001	0.020	0.030	0.050	0.040	0.030	0.160	0.040	0.180	0.140	0.100	0.050	0.040
	Lead, dissolved	X		mg/l		0.00156297	0.001												
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	0.02	<.01	0.01	0.01	<.01	<.01	0.04	0.01	<0.01	0.02	0.02	<.01
	Nickel, dissolved	X		mg/l		0.036003	0.001												
	Silver, dissolved	X		mg/l		0.000151558	0.001												
	Zinc,dissolved	X		mg/l		0.08173983	0.001												
	Selenium,dissolved	X		mg/l		0.0046	0.001												
	Iron, Total recoverable	X		mg/l		1.805	0.001												
	Arsenic, Total recoverable	X		mg/l															
	Chloride	X	X	mg/l			0.1	54.9	25.3	22.9	32.0	13.3	14.3	15.2	10.3	19.8	18.2	10.7	19.8
	Sulfate	X	X	mg/l			0.1	27.3	32	27.9	31.6	27	33.3	27.6	29.7	29.1	37.2	46.5	40.5
	Fluoride	X		mg/l			0.1	<0.1	<.01	<.01	<.1	<.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Nitrate	X		mg/l		100	0.1												
	Nitrite	X		mg/l		0.5	0.1												
	Phosphate	X		mg/l			0.1												
	Ortho-phosphate	X		mg/l			0.1												
	Calcium	X	X	mg/l				10.5	19.7	19.4	20.2	20.0	21.6	21.7	21.4	20.6	17.2	19.0	25.1
	Magnesium	X	X	mg/l				4.8	9.9	9.6	9.8	9.6	10.8	10.7	9.8	9.8	7.8	9.1	13.5
	Sodium	X	X	mg/l				251	264	269	243	257	291	240	280	303	305	288	258
	SAR	X	X					16.0	16.4	11.1	14.9	15.8	17.2	10.5	12.5	13.7	15.3	13.5	10.3
	Chromium, Total	X		mg/l			0.01												
	Chromium 6	X		mg/l		0.011	0.01												
	Chromium 3	X		mg/l		0.052	0.01												
	Potassium	X		mg/l				2.3	3.3	2.7	1.1	3.0	3.3	2.2	3.5	3.5	2.9	3.0	3.9
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	490.0	595.0	616.0	670.0	744.0	805.0	699.0	811.0	848.0	827.0	795.0	744.0

2008 Red River Ranch Water Sampling Data

Outfall 003
Pond D

								Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly
								(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)
							Month	January	February	March	April	May	June	July	August	September	October	November	December
							Sample Location (outflow)	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**
							Sampling Completed Date:	9-Jan-08	21-Feb-08	13-Mar-08	3-Apr-08	6-May-08	12-Jun-08	9-Jul-08	5-Aug-08	5-Sep-08	3-Oct-08	6-Nov-09	3-Oct-08
Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit												
Field	Flow	X	X	bpd	report			2300	1984	2402	2057	2801							
	Temperature	X	X	^{0}C				8.6			8.8								
	pH	X	X	s.u.	6.5 - 9.0			8.76			8.1								
	Specific conductance	X	X	µs				1764			1493								
	Oil & Grease	X	X		10			no			no								
Laboratory	Chlorine	X	X	mg/l		0.011		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1		0.942	0.166	0.000	0.272	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.172
	Alkalinity	X	X	mg/l as$CaCO_3$				617	716	823	744	798	872	720	825	912	876	727	918
	Hardness	X	X	mg/l as$CaCO_3$				36	25	36	33	33	39	36	23	22	78	90	180
	pH	X	X	s.u.	6.5-9.0			8.9	8.7	8.5	8.6	8.7	8.6	8.7	8.3	8.8	8.7	8.6	8.6
	Temperature	X	X	^{0}C				2.1	2.9	14.8	1.0	1.8	3.2	1.7	1.6	4.2	3.6	4.6	7.7
	Dissolved Oxygen	X	X	mg/l		5		5.9	8.1	5.5	6.9	6.8	6.8	4.6	6.4	4.1	6.6	4.3	8.0
	Conductivity	X	X	µs/cm				1502	1416	1431	1409	1390	1529	1208	1219	1398	1302	1311	1098
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			905	979	726	978	937	938	907	835	863	772	798	829
	Total Solids	X	X	mg/l				905	982	733	981.3	942.4	940.2	909.1	843.4	864.9	772.0	798.9	832.9
	Total Suspended Solids (TSS)	X	X	mg/l	30			ND	3	7	3.3	5.4	2.2	2.1	8.2	1.9	ND	0.9	3.9
	Manganese, Total	X	X	mg/l			0.001	0.050	0.040	0.040	0.070	0.010	0.120	0.060	0.060	0.090	0.040	0.140	0.070
	Iron, Total	X	X	mg/l			0.001	1.66	0.88	0.53	1.70	0.38	2.20	0.68	1.50	0.89	0.98	3.48	2.10
	Mercury, Total	X		mg/l		0.00001	0.001												
	Silica, Total	X		mg/l			0.001												
	Barium, dissolved	X	X	mg/l			0.001	0.140	0.230	0.210	0.240	0.260	0.210	0.220	0.190	0.220	0.220	0.080	0.170
	Boron, dissolved	X	X	mg/l	0.75		0.001	0.350	0.380	0.210	0.370	0.350	0.580	0.330	0.320	0.340	0.310	0.060	0.290
	Cadmium, dissolved	X		mg/l		0.002	0.001												
	Copper, dissolved	X		mg/l		0.006	0.001												
	Iron, dissolved	X	X	mg/l			0.001	0.040	0.040	0.090	0.090	0.030	0.390	0.100	0.170	0.070	0.060	0.310	0.050
	Lead, dissolved	X		mg/l		0.00156297	0.001												
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	0.01	<.01	0.02	0.03	<.01	0.01	0.04	0.01	<0.01	0.02	0.01	<.01
	Nickel, dissolved	X		mg/l		0.036003	0.001												
	Silver, dissolved	X		mg/l		0.000151558	0.001												
	Zinc,dissolved	X		mg/l		0.08173983	0.001												
	Selenium,dissolved	X		mg/l		0.0046	0.001												
	Iron, Total recoverable	X		mg/l		1.805	0.001												
	Arsenic, Total recoverable	X		mg/l															
	Chloride	X	X	mg/l			0.1	90.2	61.6	45.2	143.0	28.7	60.5	44.2	44.2	64.5	44.2	13.4	22.3
	Sulfate	X	X	mg/l			0.1	32.1	40.2	39.6	42.6	44.1	52	44.6	36.6	36.9	45	61.2	42
	Fluoride	X		mg/l			0.1	<0.1	<.01	<.1	<.1	<.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Nitrate	X		mg/l		100	0.1												
	Nitrite	X		mg/l		0.5	0.1												
	Phosphate	X		mg/l			0.1												
	Ortho-phosphate	X		mg/l			0.1												
	Calcium	X	X	mg/l				7.0	12.4	12.5	13.0	12.7	15.0	16.3	11.5	10.8	22.3	11.6	27.3
	Magnesium	X	X	mg/l				3.1	6.1	6	5.8	6.1	6.9	7.7	4.3	4.2	12.4	2.9	16.3
	Sodium	X	X	mg/l				341	327	332	312	327	365	285	328	380	327	288	312
	SAR	X	X					26.9	25.5	25.8	14.4	25.2	25.9	14.5	20.9	24.8	13.7	19.5	11.6
	Chromium, Total	X		mg/l			0.01												
	Chromium 6	X		mg/l		0.011	0.01												
	Chromium 3	X		mg/l		0.052	0.01												
	Potassium	X		mg/l				2.1	2.6	2.1	0.9	2.4	2.6	1.7	2.7	2.7	2.8	2.0	2.8
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	612.0	639.0	680.0	610.0	793.0	865.0	714.0	811.0	909.0	868.0	716.0	906.0

Red River Ranch Water Sampling Data

Outfall 004
Pond E

Month

Sample Location (outflow)

Sampling Completed Date:

Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit			Monthly (Qtr Analysis) January	Monthly (Qtr Analysis) February	Monthly (Qtr Analysis) March	Monthly (Qtr Analysis) April	Monthly (Qtr Analysis) May	Monthly (Qtr Analysis) June	Monthly (Qtr Analysis) July	Monthly (Qtr Analysis) August	Monthly (Qtr Analysis) September	Monthly (Qtr Analysis) October	Monthly (Qtr Analysis) November	Monthly (Qtr Analysis) December
										Outflow	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**	**Outflow**
										9-Jan-08	21-Feb-08	13-Mar-08	3-Apr-08	6-May-08	12-Jun-08	9-Jul-08	5-Aug-08	5-Sep-08	3-Oct-08	6-Nov-08	16-Dec-08
Field	Flow	X	X	bpd	report					767	661	801	1370	934							
	Temperature	X	X	^{0}C						3.4			11								
	pH	X	X	s.u.	6.5 - 9.0					8.9			7.71								
	Specific conductance	X	X	µs						1915			1152								
	Oil & Grease	X	X		10					no			no								
Laboratory	Chlorine	X	X	mg/l		0.011		0.000	0.000	ND	ND	ND	ND	ND	ND	No Flow	No Flow	ND	ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1		0.377	0.000	0.000	0.000	0.000	0.026	0.000	0.290			0.000	0.000	0.000	0.377
	Alkalinity	X	X	mg/l as$CaCO_3$				966.000	524.000	966	742	524	543	662	768			693	752	695	775
	Hardness	X	X	mg/l as$CaCO_3$				60.000	14.000	18	18	26	27	24	24			57	14	24	60
	pH	X	X	s.u.	6.5-9.0			9.000	8.300	9.0	9.0	8.5	8.6	8.3	8.5			8.8	8.5	8.6	8.7
	Temperature	X	X	^{0}C				14.800	1.000	2.1	2.9	14.8	1.0	1.8	3.2			4.2	3.6	4.6	7.4
	Dissolved Oxygen	X	X	mg/l		5		8.800	6.000	7.1	8.5	8.0	8.8	7.7	7.9			6.2	6.3	6.0	7.5
	Conductivity	X	X	µs/cm				1490.000	888.000	1490	1386	1154	1117	1100	1248			888	1075	1164	978
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			963.000	582.000	963	865	725	712	729	747			582	675	706	740
	Total Solids	X	X	mg/l				966.000	584.700	966	868	730	713.9	731.0	749.6			584.7	675.9	710.5	741.8
	Total Suspended Solids (TSS)	X	X	mg/l	30			5.000	0.900	3	3	5	1.9	2.0	2.6			2.7	0.9	4.5	1.8
	Manganese, Total	X	X	mg/l			0.001	0.160	0.040	0.070	0.040	0.050	0.050	0.040	0.140			0.150	0.120	0.160	0.060
	Iron, Total	X	X	mg/l			0.001	4.960	0.650	3.82	1.20	1.00	1.40	0.65	2.10			1.72	0.99	4.96	2.00
	Mercury, Total	X		mg/l		0.00001	0.001	0.000	0.000												
	Silica, Total	X		mg/l			0.001	0.000	0.000												
	Barium, dissolved	X	X	mg/l			0.001	0.190	0.050	0.050	0.190	0.100	0.090	0.110	0.110			0.120	0.100	0.120	0.090
	Boron, dissolved	X	X	mg/l	0.75		0.001	0.210	0.040	0.100	0.210	0.100	0.050	0.040	0.080			0.070	0.050	0.160	0.050
	Cadmium, dissolved	X		mg/l		0.002	0.001	0.000	0.000												
	Copper, dissolved	X		mg/l		0.006	0.001	0.000	0.000												
	Iron, dissolved	X	X	mg/l			0.001	0.700	0.050	0.050	0.090	0.170	0.200	0.160	0.700			0.060	0.130	0.120	0.140
	Lead, dissolved	X		mg/l		0.00156297	0.001	0.000	0.000												
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	0.040	0.010	0.01	<.01	0.04	0.01	0.01	<0.01			<0.01	0.01	0.01	<.01
	Nickel, dissolved	X		mg/l		0.036003	0.001	0.000	0.000												
	Silver, dissolved	X		mg/l		0.000151558	0.001	0.000	0.000												
	Zinc,dissolved	X		mg/l		0.08173983	0.001	0.000	0.000												
	Selenium,dissolved	X		mg/l		0.0046	0.001	0.000	0.000												
	Iron, Total recoverable	X		mg/l		1.805	0.001	0.000	0.000												
	Arsenic, Total recoverable	X		mg/l				0.000	0.000												
	Chloride	X	X	mg/l			0.1	56.200	10.400	56.2	22.7	17.3	15.4	13.2	14.3			19.3	10.4	23.5	16.5
	Sulfate	X	X	mg/l			0.1	76.200	4.500	4.5	20.3	76.2	56.2	51.6	61.2			7.5	66	36.3	48.6
	Fluoride	X		mg/l			0.1	0.000	0.000	<0.1	<.01	<.1	<.1	<.1	<.1			<0.1	<0.1	<0.1	<0.1
	Nitrate	X		mg/l		100	0.1	0.000	0.000												
	Nitrite	X		mg/l		0.5	0.1	0.000	0.000												
	Phosphate	X		mg/l			0.1	0.000	0.000												
	Ortho-phosphate	X		mg/l			0.1	0.000	0.000												
	Calcium	X	X	mg/l				27.700	4.900	4.9	9.6	12.3	14.1	11.5	11.9			25.6	13.8	27.7	8.8
	Magnesium	X	X	mg/l				13.100	0.890	0.89	3.6	3.3	3.8	3	3			7.2	3.4	13.1	2.2
	Sodium	X	X	mg/l				354.000	231.000	354	319	262	245	260	303			231	295	233	307
	SAR	X	X					137.000	10.400	38.5	28.3	20.5	12.2	21.1	24.2			10.4	18.4	137.0	23.9
	Chromium, Total	X		mg/l			0.01	0.000	0.000												
	Chromium 6	X		mg/l		0.011	0.01	0.000	0.000												
	Chromium 3	X		mg/l		0.052	0.01	0.000	0.000												
	Potassium	X		mg/l				2.500	0.600	1.8	2.5	1.8	0.6	1.7	2.0			2.1	2.0	2.4	1.8
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	762.000	483.000	674.0	661.0	483.0	625.0	653.0	760.0			689.0	743.0	687.0	762.0

2008 Red River Ranch Water Sampling Data

Outfall 001
Pond A

							Quarterly	Quarterly	Quarterly	Quarterly	Quarterly
							(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)
Month							January	April	May	July	October
Sample Location (inflow)							**Inflow**	**Inflow**	**Inflow**	**Inflow**	**Inflow**
Sampling Completed Date:							9-Jan-08	3-Apr-08	6-May-08	9-Jul-08	3-Oct-08
Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit				
Field	Flow	X	X	bpd	report			7458		6364		
	Temperature	X	X	^0C				13				
	pH	X	X	s.u.	6.5 - 9.0			8.97				
	Specific conductance	X	X	µs				1516				
	Oil & Grease	X	X		10			no				
Laboratory	Chlorine	X	X	mg/l		0.011		ND	No Flow	ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1		0.289		0.185	0.205	0.000
	Alkalinity	X	X	mg/l as $CaCO_3$				552		572	527	673
	Hardness	X	X	mg/l as $CaCO_3$				16		12	7	1
	pH	X	X	s.u.	6.5-9.0			8.8		8.7	9.0	9.0
	Temperature	X	X	^0C				2.1		1.8	3.2	3.6
	Dissolved Oxygen	X	X	mg/l		5		2.3		2.0	1.7	2.6
	Conductivity	X	X	µs/cm				1070		949	892	888
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			630		653	609	573.0
	Total Solids	X	X	mg/l				630		654.6	609.5	573.0
	Total Suspended Solids (TSS)	X	X	mg/l	30			ND		1.6	0.5	ND
	Manganese, Total	X	X	mg/l			0.001	0.030		0.030	0.010	0.030
	Iron, Total	X	X	mg/l			0.001	0.57		0.81	0.03	0.65
	Mercury, Total	X		mg/l		0.00001	0.001					
	Silica, Total	X		mg/l			0.001					
	Barium, dissolved	X	X	mg/l			0.001	0.140		0.060	0.070	0.050
	Boron, dissolved	X	X	mg/l	0.75		0.001	0.350		0.160	0.140	0.140
	Cadmium, dissolved	X		mg/l		0.002	0.001					
	Copper, dissolved	X		mg/l		0.006	0.001					
	Iron, dissolved	X	X	mg/l			0.001	0.030		0.170	0.780	0.400
	Lead, dissolved	X		mg/l		0.00156297	0.001					
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	0.02		0.01	0.01	0.02
	Nickel, dissolved	X		mg/l		0.036003	0.001					
	Silver, dissolved	X		mg/l		0.000151558	0.001					
	Zinc,dissolved	X		mg/l		0.08173983	0.001					
	Selenium,dissolved	X		mg/l		0.0046	0.001					
	Iron, Total recoverable	X		mg/l		1.805	0.001					
	Arsenic, Total recoverable	X		mg/l								
	Chloride	X	X	mg/l			0.1	81.4		28.6	34.1	16.5
	Sulfate	X	X	mg/l			0.1	32.1		31.8	14.4	23.4
	Fluoride	X		mg/l			0.1	<0.1		<.1	<.01	<0.1
	Nitrate	X		mg/l		100	0.1					
	Nitrite	X		mg/l		0.5	0.1					
	Phosphate	X		mg/l			0.1					
	Ortho-phosphate	X		mg/l			0.1					
	Calcium	X	X	mg/l				6.0		3.2	4.2	3.7
	Magnesium	X	X	mg/l				2.6		0.6	0.5	0.46
	Sodium	X	X	mg/l				328		240	218	265
	SAR	X	X					28.1		15.1	26.7	34.5
	Chromium, Total	X		mg/l			0.01					
	Chromium 6	X		mg/l		0.011	0.01					
	Chromium 3	X		mg/l		0.052	0.01					
	Potassium	X		mg/l				1.9		1.6	1.1	1.3
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	592.0		561.0	518.0	661.0

2008 Red River Ranch Water Sampling Data											
Outfall 002								Quarterly	Quarterly	Quarterly	Quarterly
Pond B								(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)
Month								January	April	July	October
Sample Location (inflow)								**Inflow**	**Inflow**	**Inflow**	**Inflow**
Sampling Completed Date:								9-Jan-08	3-Apr-08	9-Jul-08	3-Oct-08
Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit				
Field	Flow	X	X	bpd	report			2050	1974		
	Temperature	X	X	^{0}C				10.8	13.2		
	pH	X	X	s.u.	6.5 - 9.0			8.31	8.01		
	Specific conductance	X	X	µs				1681	1156		
	Oil & Grease	X	X		10			no	no		
Laboratory	Chlorine	X	X	mg/l		0.011		ND	ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1		0.838	0.493	0.577	0.134
	Alkalinity	X	X	mg/l as $CaCO_3$				737	599	672	815
	Hardness	X	X	mg/l as $CaCO_3$				53	49	53	39
	pH	X	X	s.u.	6.5-9.0			8.3	8.2	8.4	8.4
	Temperature	X	X	^{0}C				2.1	1.1	1.7	3.6
	Dissolved Oxygen	X	X	mg/l		5		5.1	5.6	4.7	4.5
	Conductivity	X	X	µs/cm				1110	1121	1082	1150
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			664	703	779	681
	Total Solids	X	X	mg/l				665	704.6	779.9	682.5
	Total Suspended Solids (TSS)	X	X	mg/l	30			1	1.6	0.9	1.5
	Manganese, Total	X	X	mg/l			0.001	0.040	0.040	0.400	0.060
	Iron, Total	X	X	mg/l			0.001	0.80	1.30	0.01	1.70
	Mercury, Total	X		mg/l		0.00001	0.001				
	Silica, Total	X		mg/l			0.001				
	Barium, dissolved	X	X	mg/l			0.001	0.020	0.130	0.130	0.130
	Boron, dissolved	X	X	mg/l	0.75		0.001	0.260	0.250	0.250	0.260
	Cadmium, dissolved	X		mg/l		0.002	0.001				
	Copper, dissolved	X		mg/l		0.006	0.001				
	Iron, dissolved	X	X	mg/l			0.001	0.020	0.010	<0.01	0.150
	Lead, dissolved	X		mg/l		0.00156297	0.001				
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	0.02	0.02	0.03	0.05
	Nickel, dissolved	X		mg/l		0.036003	0.001				
	Silver, dissolved	X		mg/l		0.000151558	0.001				
	Zinc,dissolved	X		mg/l		0.08173983	0.001				
	Selenium,dissolved	X		mg/l		0.0046	0.001				
	Iron, Total recoverable	X		mg/l		1.805	0.001				
	Arsenic, Total recoverable	X		mg/l							
	Chloride	X	X	mg/l			0.1	55.1	36.4	39.0	20.8
	Sulfate	X	X	mg/l			0.1	27.6	31.8	29.1	37.5
	Fluoride	X		mg/l			0.1	<0.1	<.1	<0.1	<0.1
	Nitrate	X		mg/l		100	0.1				
	Nitrite	X		mg/l		0.5	0.1				
	Phosphate	X		mg/l			0.1				
	Ortho-phosphate	X		mg/l			0.1				
	Calcium	X	X	mg/l				10.4	20.3	22.1	17.1
	Magnesium	X	X	mg/l				4.7	9.9	10.9	7.7
	Sodium	X	X	mg/l				249	238	242	299
	SAR	X	X					16.0	10.2	10.5	15.0
	Chromium, Total	X		mg/l			0.01				
	Chromium 6	X		mg/l		0.011	0.01				
	Chromium 3	X		mg/l		0.052	0.01				
	Potassium	X		mg/l				2.4	1.1	2.2	2.8
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	480.0	650.0	663.0	804.0

2008 Red River Ranch Water Sampling Data

Outfall 003
Pond D

								Quarterly	Quarterly	Quarterly	Quarterly
								(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)	(Qtr Analysis)
Month								January	April	July	October
Sample Location (inflow)								**Inflow**	**Inflow**	**Inflow**	**Inflow**
Sampling Completed Date:								9-Jan-08	3-Apr-08	9-Jul-08	3-Oct-08
Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit				
Field	Flow	X	X	bpd	report			2300	2057		
	Temperature	X	X	^{0}C				9.8	11.8		
	pH	X	X	s.u.	6.5 - 9.0			8.49	8.18		
	Specific conductance	X	X	µs				1787	1475		
	Oil & Grease	X	X		10			no	no		
Laboratory	Chlorine	X	X	mg/l		0.011		ND	ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1		0.313	0.302	0.464	0.338
	Alkalinity	X	X	mg/l as$CaCO_3$				800	743	702	862
	Hardness	X	X	mg/l as$CaCO_3$				31	29	34	147
	pH	X	X	s.u.	6.5-9.0			8.7	8.5	8.7	8.3
	Temperature	X	X	^{0}C				2.1	1.1	1.7	3.6
	Dissolved Oxygen	X	X	mg/l		5		4.3	6.0	4.0	4.1
	Conductivity	X	X	µs/cm				1531	1398	1189	1004
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			884	895	872	649
	Total Solids	X	X	mg/l				884	895.8	873.1	649.8
	Total Suspended Solids (TSS)	X	X	mg/l	30			ND	0.8	1.1	0.8
	Manganese, Total	X	X	mg/l			0.001	0.030	0.040	0.040	0.070
	Iron, Total	X	X	mg/l			0.001	0.84	0.68	2.20	4.60
	Mercury, Total	X		mg/l		0.00001	0.001				
	Silica, Total	X		mg/l			0.001				
	Barium, dissolved	X	X	mg/l			0.001	0.010	0.270	0.230	0.230
	Boron, dissolved	X	X	mg/l	0.75		0.001	0.160	0.340	0.330	0.220
	Cadmium, dissolved	X		mg/l		0.002	0.001				
	Copper, dissolved	X		mg/l		0.006	0.001				
	Iron, dissolved	X	X	mg/l			0.001	0.170	0.040	<.01	0.020
	Lead, dissolved	X		mg/l		0.00156297	0.001				
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	0.01	0.03	0.03	0.06
	Nickel, dissolved	X		mg/l		0.036003	0.001				
	Silver, dissolved	X		mg/l		0.000151558	0.001				
	Zinc,dissolved	X		mg/l		0.08173983	0.001				
	Selenium,dissolved	X		mg/l		0.0046	0.001				
	Iron, Total recoverable	X		mg/l		1.805	0.001				
	Arsenic, Total recoverable	X		mg/l							
	Chloride	X	X	mg/l			0.1	28.9	211.0	33.8	18.1
	Sulfate	X	X	mg/l			0.1	15	41.7	52.6	55.8
	Fluoride	X		mg/l			0.1	<0.1	<.1	<0.1	<0.1
	Nitrate	X		mg/l		100	0.1				
	Nitrite	X		mg/l		0.5	0.1				
	Phosphate	X		mg/l			0.1				
	Ortho-phosphate	X		mg/l			0.1				
	Calcium	X	X	mg/l				2.1	11.5	15.3	42.2
	Magnesium	X	X	mg/l				0.04	5.6	8	26.7
	Sodium	X	X	mg/l				243	304	279	259
	SAR	X	X					45.4	23.7	14.1	7.6
	Chromium, Total	X		mg/l			0.01				
	Chromium 6	X		mg/l		0.011	0.01				
	Chromium 3	X		mg/l		0.052	0.01				
	Potassium	X		mg/l				1.1	0.8	1.6	3.7
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	461.0	445.0	691.0	854.0

Red River Ranch Water Sampling Data

Outfall 004

Pond E

Month

Sample Location (inflow)

Sampling Completed Date:

Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit	Quarterly (Qtr Analysis)	Quarterly (Qtr Analysis)	Quarterly (Qtr Analysis)	Quarterly (Qtr Analysis)	Quarterly (Qtr Analysis)
								February	March	April	July	October
								Inflow	**Inflow**	**Inflow**	**Inflow**	**Inflow**
								21-Feb-08	13-Mar-08	3-Apr-08	9-Jul-08	3-Oct-08
Field	Flow	X	X	bpd	report			661	801	1370		
	Temperature	X	X	^{0}C						14.6		
	pH	X	X	s.u.	6.5 - 9.0					8.13		
	Specific conductance	X	X	µs						1155		
	Oil & Grease	X	X		10					no		
Laboratory	Chlorine	X	X	mg/l		0.011		ND	ND	ND	No Flow	ND
	Ammonia	X	X	mg/l as NH^3		0.1		0.000	0.453	0.396		0.022
	Alkalinity	X	X	mg/l as $CaCO_3$				718	556	548		721
	Hardness	X	X	mg/l as $CaCO_3$				25	20	16		13
	pH	X	X	s.u.	6.5-9.0			9.1	8.3	8.4		8.2
	Temperature	X	X	^{0}C				2.9	14.8	1.1		3.6
	Dissolved Oxygen	X	X	mg/l		5		8.7	7.1	8.3		5.2
	Conductivity	X	X	µs/cm				1370	1185	1135		1115
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			852	843	772		668
	Total Solids	X	X	mg/l				857	847	775.4		668.0
	Total Suspended Solids (TSS)	X	X	mg/l	30			5	4	3.4		ND
	Manganese, Total	X	X	mg/l			0.001	0.040	0.050	0.090		0.040
	Iron, Total	X	X	mg/l			0.001	1.40	1.80	12.20		1.50
	Mercury, Total	X		mg/l		0.00001	0.001					
	Silica, Total	X		mg/l			0.001					
	Barium, dissolved	X	X	mg/l			0.001	0.190	0.120	0.100		0.130
	Boron, dissolved	X	X	mg/l	0.75		0.001	0.210	0.120	0.040		0.060
	Cadmium, dissolved	X		mg/l		0.002	0.001					
	Copper, dissolved	X		mg/l		0.006	0.001					
	Iron, dissolved	X	X	mg/l			0.001	0.090	0.150	0.260		1.500
	Lead, dissolved	X		mg/l		0.00156297	0.001					
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	<.01	0.04	0.02		0.04
	Nickel, dissolved	X		mg/l		0.036003	0.001					
	Silver, dissolved	X		mg/l		0.000151558	0.001					
	Zinc,dissolved	X		mg/l		0.08173983	0.001					
	Selenium,dissolved	X		mg/l		0.0046	0.001					
	Iron, Total recoverable	X		mg/l		1.805	0.001					
	Arsenic, Total recoverable	X		mg/l								
	Chloride	X	X	mg/l			0.1	22.4	18.5	31.2		15.6
	Sulfate	X	X	mg/l			0.1	20.3	80.4	61.2		63.9
	Fluoride	X		mg/l			0.1	<.01	<.1	<.1		<0.1
	Nitrate	X		mg/l		100	0.1					
	Nitrite	X		mg/l		0.5	0.1					
	Phosphate	X		mg/l			0.1					
	Ortho-phosphate	X		mg/l			0.1					
	Calcium	X	X	mg/l				9.8	11.9	9.4		10.7
	Magnesium	X	X	mg/l				3.6	2.9	2.2		2.7
	Sodium	X	X	mg/l				323	272	249		292
	SAR	X	X					28.4	21.7	11.8		20.6
	Chromium, Total	X		mg/l			0.01					
	Chromium 6	X		mg/l		0.011	0.01					
	Chromium 3	X		mg/l		0.052	0.01					
	Potassium	X		mg/l				2.5	1.7	0.6		1.9
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	673.0	533.0	560.0		715.0

Red River Ranch Water Sampling Data
Water Sampling Data

Spring Canyon Spring

								Baseline	Monthly (Quarterly)	Monthly (Quarterly)	Monthly (Quarterly)	Monthly (Quarterly)
Month								August	March	April	July	October
Sampling Completed Date:								7-Aug-06	13-Mar-08	3-Apr-08	9-Jul-08	3-Oct-08
Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit					
Field	Flow	X	X	bpd	report					-		
	Temperature	X	X	^{0}C						8.1		
	pH	X	X	s.u.	6.5 - 9.0					7.18		
	Specific conductance	X	X	µs						367		
	Oil & Grease	X	X		10					no	no	no
Laboratory	Chlorine	X	X	mg/l		0.011				ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1				0.000	0.000	0.000
	Alkalinity	X	X	mg/l as $CaCO_3$						191	310	726
	Hardness	X	X	mg/l as $CaCO_3$						127	157	62
	pH	X	X	s.u.	6.5-9.0			8.18		7.5	8.4	8.8
	Temperature	X	X	^{0}C						1.0	1.7	3.6
	Dissolved Oxygen	X	X	mg/l		5				6.8	8.4	8.4
	Conductivity	X	X	µs/cm				549		359	420	960
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			322		229	226	553
	Total Solids	X	X	mg/l				372		229.2	226.4	553.5
	Total Suspended Solids (TSS)	X	X	mg/l	30			50		0.2	0.4	0.5
	Manganese, Total	X	X	mg/l			0.001			0.030	0.010	0.050
	Iron, Total	X	X	mg/l			0.001			0.71	0.09	0.40
	Mercury, Total	X		mg/l		0.00001	0.001	ND				
	Silica, Total	X		mg/l			0.001	13.5				
	Barium, dissolved	X	X	mg/l			0.001			0.120	0.170	0.090
	Boron, dissolved	X	X	mg/l	0.75		0.001	ND		0.020	0.090	0.020
	Cadmium, dissolved	X		mg/l		0.002	0.001	ND				
	Copper, dissolved	X		mg/l		0.006	0.001	0.002				
	Iron, dissolved	X	X	mg/l			0.001	ND		0.010	<0.01	0.050
	Lead, dissolved	X		mg/l		0.00156297	0.001	ND				
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	0.012		0.02	0.01	0.04
	Nickel, dissolved	X		mg/l		0.036003	0.001	ND				
	Silver, dissolved	X		mg/l		0.00015156	0.001	ND				
	Zinc,dissolved	X		mg/l		0.08173983	0.001	ND				
	Selenium,dissolved	X		mg/l		0.0046	0.001	ND				
	Iron, Total recoverable	X		mg/l		1.805	0.001	0.29				
	Arsenic, Total recoverable	X		mg/l				0.0005				
	Chloride	X	X	mg/l			0.1	1.0		33.0	7.8	110.0
	Sulfate	X	X	mg/l			0.1	52		22.2	28.2	34.8
	Fluoride	X		mg/l			0.1	0.2		<.1	<.1	<.1
	Nitrate	X		mg/l		100	0.1	ND				
	Nitrite	X		mg/l		0.5	0.1	ND				
	Phosphate	X		mg/l			0.1	0.016				
	Ortho-phosphate	X		mg/l			0.1	0.149				
	Calcium	X	X	mg/l				48.0		45.2	51.9	20.7
	Magnesium	X	X	mg/l				26.9		17.0	23.6	12.5
	Sodium	X	X	mg/l				1.5		18.5	26.1	246.0
	SAR	X	X	mg/l				0.99		0.6	0.8	10.5
	Chromium, Total	X		mg/l			0.01	ND				
	Chromium 6	X		mg/l		0.011	0.01	ND				
	Chromium 3	X		mg/l		0.052	0.01	ND				
	Potassium	X		mg/l				3.3		0.5	0.9	2.6
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	291.0		195.0	299.0	720.0

No Data (no flow or unable to sample)

Red River Ranch Water Sampling Data

Water Sampling Data

Lower Lorencito Spring

								Baseline	Monthly (Quarterly)	Monthly (Quarterly)	Monthly (Quarterly)	Monthly (Quarterly)
Month								August	March	April	July	October
Sampling Completed Date:								7-Aug-06	13-Mar-08	3-Apr-08	9-Jul-08	3-Oct-08
Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit					
Field	Flow	X	X	bpd	report					-		
	Temperature	X	X	^{0}C						5.3		
	pH	X	X	s.u.	6.5 - 9.0					6.96		
	Specific conductance	X	X	µs						217		
	Oil & Grease	X	X		10					no	no	
Laboratory	Chlorine	X	X	mg/l		0.011				ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1				0.000	0.000	0.000
	Alkalinity	X	X	mg/l as $CaCO_3$						131	310	671
	Hardness	X	X	mg/l as $CaCO_3$						82	157	38
	pH	X	X	s.u.	6.5-9.0			7.64		7.9	8.4	9.2
	Temperature	X	X	^{0}C						1.1	1.7	3.6
	Dissolved Oxygen	X	X	mg/l		5				9.3	8.4	8.2
	Conductivity	X	X	µs/cm				443		204	420	876
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			244		200	226	540
	Total Solids	X	X	mg/l				268		202.9	226.4	546
	Total Suspended Solids (TSS)	X	X	mg/l	30			24		2.9	0.4	6
	Manganese, Total	X	X	mg/l			0.001	ND		0.030	0.010	0.180
	Iron, Total	X	X	mg/l			0.001	ND		4.10	0.09	7.00
	Mercury, Total	X		mg/l		0.00001	0.001	ND				
	Silica, Total	X		mg/l			0.001	12.4				
	Barium, dissolved	X	X	mg/l			0.001			0.100	0.170	0.080
	Boron, dissolved	X	X	mg/l	0.75		0.001	ND		0.010	0.020	0.130
	Cadmium, dissolved	X		mg/l		0.002	0.001	ND				
	Copper, dissolved	X		mg/l		0.006	0.001	ND				
	Iron, dissolved	X	X	mg/l			0.001	ND		0.490	<0.01	0.250
	Lead, dissolved	X		mg/l		0.00156297	0.001	ND				
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	ND		0.02	0.01	0.01
	Nickel, dissolved	X		mg/l		0.036003	0.001	ND				
	Silver, dissolved	X		mg/l		0.00015156	0.001	ND				
	Zinc,dissolved	X		mg/l		0.08173983	0.001	ND				
	Selenium,dissolved	X		mg/l		0.0046	0.001	ND				
	Iron, Total recoverable	X		mg/l		1.805	0.001	ND				
	Arsenic, Total recoverable	X		mg/l				ND				
	Chloride	X	X	mg/l			0.1	3.0		3.4	7.8	16.5
	Sulfate	X	X	mg/l			0.1	28		15.6	28.2	22.8
	Fluoride	X		mg/l			0.1	0.2		<.1	<.1	<.1
	Nitrate	X		mg/l		100	0.1	0.3				
	Nitrite	X		mg/l		0.5	0.1	ND				
	Phosphate	X		mg/l			0.1	ND				
	Ortho-phosphate	X		mg/l			0.1	0.093				
	Calcium	X	X	mg/l				51.7		26.0	51.9	20.6
	Magnesium	X	X	mg/l				14.3		13.6	23.6	6.8
	Sodium	X	X	mg/l				21.5		10.6	26.1	234
	SAR	X	X	mg/l				0.68		0.6	0.8	11.4
	Chromium, Total	X		mg/l			0.01	ND				
	Chromium 6	X		mg/l		0.011	0.01	ND				
	Chromium 3	X		mg/l		0.052	0.01	ND				
	Potassium	X		mg/l				2.1		0.5	0.9	1.9
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	230.0		148.0	299.0	663.0

No Data (no flow or unable to sample)

Red River Ranch Water Sampling Data

Water Sampling Data

Middle Lorencito Spring

								Baseline	Monthly (Quarterly)	Monthly (Quarterly)	Monthly (Quarterly)	Monthly (Quarterly)
Month								August	March	April	July	October
Sampling Completed Date:								7-Aug-06	13-Mar-08	3-Apr-08	9-Jul-08	3-Oct-08
Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit					
Field	Flow	X	X	bpd	report			-		-		
	Temperature	X	X	^0C						8.2		
	pH	X	X	s.u.	6.5 - 9.0					7.37		
	Specific conductance	X	X	µs						325		
	Oil & Grease	X	X		10					no	no	no
Laboratory	Chlorine	X	X	mg/l		0.011			ND	ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1			0.000	0.000	0.000	0.000
	Alkalinity	X	X	mg/l as $CaCO_3$					181	137	321	308
	Hardness	X	X	mg/l as $CaCO_3$					112	106	120	119
	pH	X	X	s.u.	6.5-9.0			7.93	8.3	7.4	7.9	9.2
	Temperature	X	X	^0C					14.8	1.1	1.7	3.6
	Dissolved Oxygen	X	X	mg/l		5			7.7	9.0	6.8	8.3
	Conductivity	X	X	µs/cm				459	464	324	412	385
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			258	282	215	237	237
	Total Solids	X	X	mg/l				294	283	215.0	237.0	237.0
	Total Suspended Solids (TSS)	X	X	mg/l	30			36	1	ND	ND	ND
	Manganese, Total	X	X	mg/l			0.001	ND	0.030	0.020	0.010	0.020
	Iron, Total	X	X	mg/l			0.001	ND	0.35	1.10	0.14	0.11
	Mercury, Total	X		mg/l		0.00001	0.001	ND				
	Silica, Total	X		mg/l			0.001	12.6				
	Barium, dissolved	X	X	mg/l			0.001		0.180	0.170	0.180	0.190
	Boron, dissolved	X	X	mg/l	0.75		0.001	ND	0.180	0.020	0.020	0.020
	Cadmium, dissolved	X		mg/l		0.002	0.001	ND				
	Copper, dissolved	X		mg/l		0.006	0.001	ND				
	Iron, dissolved	X	X	mg/l			0.001	ND	0.010	0.070	<0.01	0.010
	Lead, dissolved	X		mg/l		0.00156297	0.001	ND				
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	ND	0.02	0.01	0.01	0.01
	Nickel, dissolved	X		mg/l		0.036003	0.001	ND				
	Silver, dissolved	X		mg/l		0.00015156	0.001	ND				
	Zinc,dissolved	X		mg/l		0.08173983	0.001	ND				
	Selenium,dissolved	X		mg/l		0.0046	0.001	ND				
	Iron, Total recoverable	X		mg/l		1.805	0.001	ND				
	Arsenic, Total recoverable	X		mg/l				ND				
	Chloride	X	X	mg/l			0.1	3.0	11.4	14.3	9.9	7.4
	Sulfate	X	X	mg/l			0.1	18	15.6	18.6	16.8	18.0
	Fluoride	X		mg/l			0.1	0.2	<.1	<.1	<.01	<.01
	Nitrate	X		mg/l		100	0.1	1.1				
	Nitrite	X		mg/l		0.5	0.1	ND				
	Phosphate	X		mg/l			0.1	0.058				
	Ortho-phosphate	X		mg/l			0.1	ND				
	Calcium	X	X	mg/l				36.8	37.7	46.0	43.9	44.3
	Magnesium	X	X	mg/l				10.9	14.9	14.4	18.3	17.6
	Sodium	X	X	mg/l				49.3	55.3	20.2	46.7	38.0
	SAR	X	X	mg/l				1.83	2.5	0.9	1.5	1.2
	Chromium, Total	X		mg/l			0.01	ND				
	Chromium 6	X		mg/l		0.011	0.01	ND				
	Chromium 3	X		mg/l		0.052	0.01	ND				
	Potassium	X		mg/l				2.0	1.3	0.8	1.0	1.8
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	254.0	254.0	210.0	314.0	292.0

Red River Ranch Water Sampling Data

Water Sampling Data

Canadian Spring

								Baseline	Monthly (Quarterly)	Monthly (Quarterly)	Monthly (Quarterly)	Monthly (Quarterly)
Month								August	March	April	July	October
Sampling Completed Date:								7-Aug-06	13-Mar-08	3-Apr-08	9-Jul-08	3-Oct-08
Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit					
Field	Flow	X	X	bpd	report					-		
	Temperature	X	X	^{0}C						7.9		
	pH	X	X	s.u.	6.5 - 9.0					7.04		
	Specific conductance	X	X	µs						232		
	Oil & Grease	X	X		10					no	no	no
Laboratory	Chlorine	X	X	mg/l		0.011				ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1				0.000	0.000	0.000
	Alkalinity	X	X	mg/l as $CaCO_3$						165	225	219
	Hardness	X	X	mg/l as $CaCO_3$						83	119	149
	pH	X	X	s.u.	6.5-9.0			7.39		8.1	8.2	7.9
	Temperature	X	X	^{0}C						1.0	1.7	3.6
	Dissolved Oxygen	X	X	mg/l		5				9.8	7.4	8.0
	Conductivity	X	X	µs/cm				249		277	271	341
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			140		130	138	217
	Total Solids	X	X	mg/l				164		130.0	138.1	218.6
	Total Suspended Solids (TSS)	X	X	mg/l	30			24		ND	0.1	1.6
	Manganese, Total	X	X	mg/l			0.001	ND		0.010	0.010	0.300
	Iron, Total	X	X	mg/l			0.001	0.318		0.50	0.49	1.00
	Mercury, Total	X		mg/l		0.00001	0.001	ND				
	Silica, Total	X		mg/l			0.001	13.2				
	Barium, dissolved	X	X	mg/l			0.001			0.050	0.070	0.080
	Boron, dissolved	X	X	mg/l	0.75		0.001	ND		0.010	0.010	0.010
	Cadmium, dissolved	X		mg/l		0.002	0.001	ND				
	Copper, dissolved	X		mg/l		0.006	0.001	ND				
	Iron, dissolved	X	X	mg/l			0.001	ND		0.040	<0.01	0.060
	Lead, dissolved	X		mg/l		0.00156297	0.001	ND				
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	ND		<.01	0.01	0.17
	Nickel, dissolved	X		mg/l		0.036003	0.001	ND				
	Silver, dissolved	X		mg/l		0.00015156	0.001	ND				
	Zinc,dissolved	X		mg/l		0.08173983	0.001	ND				
	Selenium,dissolved	X		mg/l		0.0046	0.001	ND				
	Iron, Total recoverable	X		mg/l		1.805	0.001	0.32				
	Arsenic, Total recoverable	X		mg/l				ND				
	Chloride	X	X	mg/l			0.1	3.0		11.0	6.6	37.4
	Sulfate	X	X	mg/l			0.1	13		13.2	15.9	15.6
	Fluoride	X		mg/l			0.1	0.2		<.1	<0.01	<0.01
	Nitrate	X		mg/l		100	0.1	0.4				
	Nitrite	X		mg/l		0.5	0.1	ND				
	Phosphate	X		mg/l			0.1	0.095				
	Ortho-phosphate	X		mg/l			0.1	ND				
	Calcium	X	X	mg/l				26.3		33.7	42.0	46.4
	Magnesium	X	X	mg/l				8.8		12.7	18.0	19.7
	Sodium	X	X	mg/l				10.5		9.0	11.5	16.4
	SAR	X	X	mg/l				0.45		0.4	0.4	0.5
	Chromium, Total	X		mg/l			0.01	ND				
	Chromium 6	X		mg/l		0.011	0.01	ND				
	Chromium 3	X		mg/l		0.052	0.01	ND				
	Potassium	X		mg/l				1.4		0.2	0.5	1.4
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	120.0		158.0	219.0	202.0

No Data (no flow or unable to sample)

Red River Ranch Water Sampling Data

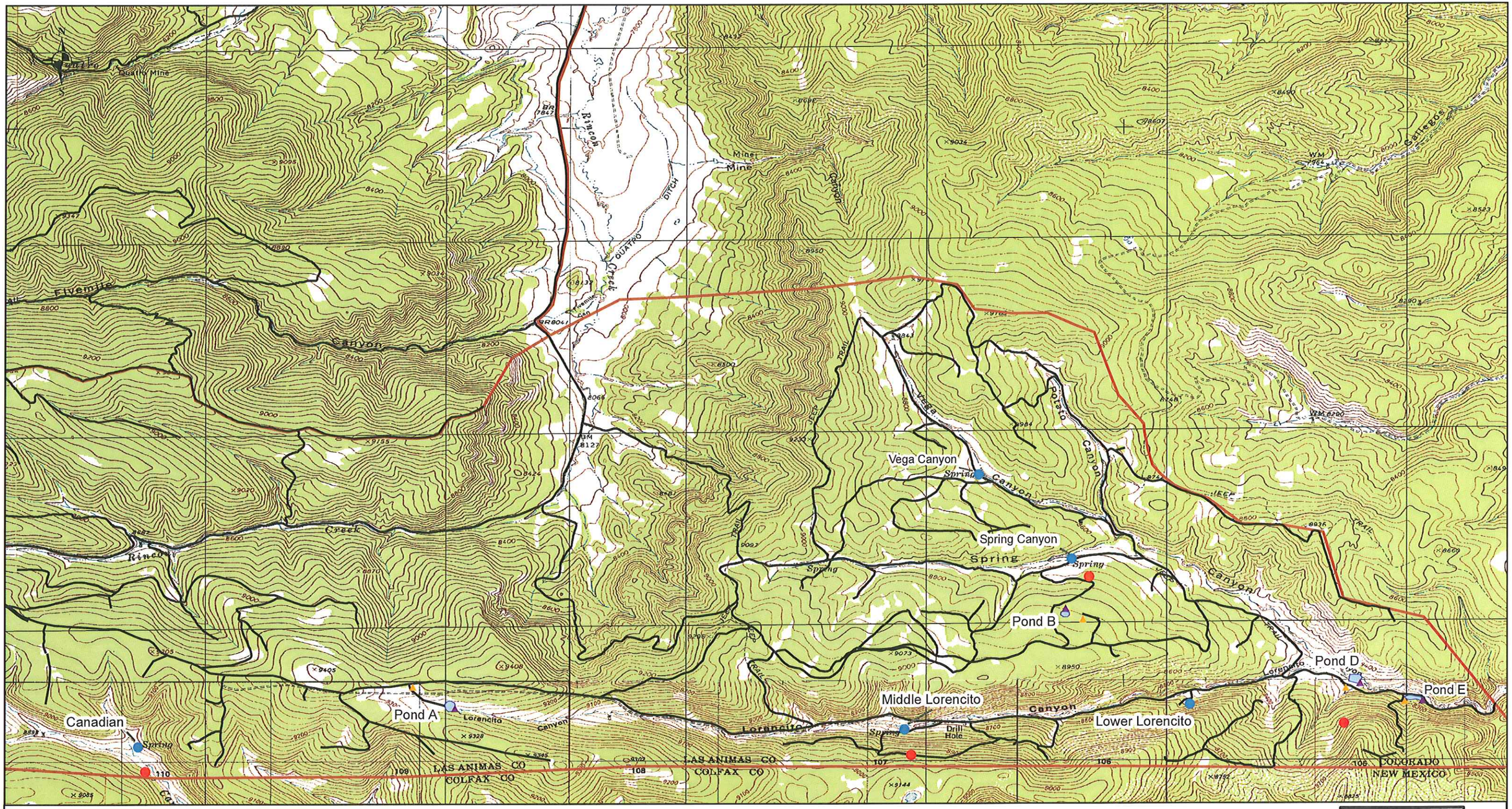
Water Sampling Data

Vega Canyon Spring

								Baseline	Monthly (Quarterly)	Monthly (Quarterly)
Month								April	July	October
Sampling Completed Date:								3-Apr-08	9-Jul-08	3-Oct-08
Testing Location	Analyte	Baseline	Monthly / Quarterly	Units	CDPHE Permit Limit	CDPHE Stream Standard	Detection Limit			
Field	Flow	X	X	bpd	report			-		
	Temperature	X	X	^{0}C				9.2		
	pH	X	X	s.u.	6.5 - 9.0			7.65		
	Specific conductance	X	X	µs				280		
	Oil & Grease	X	X		10			no	no	no
Laboratory	Chlorine	X	X	mg/l		0.011		ND	ND	ND
	Ammonia	X	X	mg/l as NH^3		0.1		0.000	0.000	0.000
	Alkalinity	X	X	mg/l as $CaCO_3$				89	263	265
	Hardness	X	X	mg/l as $CaCO_3$				109	218	174
	pH	X	X	s.u.	6.5-9.0			7.30	8.2	8.4
	Temperature	X	X	^{0}C				1.0	1.7	3.6
	Dissolved Oxygen	X	X	mg/l		5		8.7	6.7	7.4
	Conductivity	X	X	µs/cm				228	455	461
	Total Dissolved Solids (TDS)	X	X	mg/l	3500			203	230	258
	Total Solids	X	X	mg/l				208	232	258
	Total Suspended Solids (TSS)	X	X	mg/l	30			4.9	1.5	ND
	Manganese, Total	X	X	mg/l			0.001	0.030	0.300	0.040
	Iron, Total	X	X	mg/l			0.001	2.500	1.60	0.67
	Mercury, Total	X		mg/l		0.00001	0.001			
	Silica, Total	X		mg/l			0.001			
	Barium, dissolved	X	X	mg/l			0.001	0.040	0.130	0.030
	Boron, dissolved	X	X	mg/l	0.75		0.001	0.010	0.020	0.020
	Cadmium, dissolved	X		mg/l		0.002	0.001			
	Copper, dissolved	X		mg/l		0.006	0.001			
	Iron, dissolved	X	X	mg/l			0.001	0.150	<0.01	0.020
	Lead, dissolved	X		mg/l		0.00156297	0.001			
	Manganese,dissolved	X	X	mg/l		1.422722	0.001	0.010	0.290	<.01
	Nickel, dissolved	X		mg/l		0.036003	0.001			
	Silver, dissolved	X		mg/l		0.00015156	0.001			
	Zinc,dissolved	X		mg/l		0.08173983	0.001			
	Selenium,dissolved	X		mg/l		0.0046	0.001			
	Iron, Total recoverable	X		mg/l		1.805	0.001			
	Arsenic, Total recoverable	X		mg/l						
	Chloride	X	X	mg/l			0.1	13.2	5.7	2.2
	Sulfate	X	X	mg/l			0.1	40.4	69.0	73.2
	Fluoride	X		mg/l			0.1	<.1	<0.01	<.01
	Nitrate	X		mg/l		100	0.1			
	Nitrite	X		mg/l		0.5	0.1			
	Phosphate	X		mg/l			0.1			
	Ortho-phosphate	X		mg/l			0.1			
	Calcium	X	X	mg/l				41.1	55.5	54.2
	Magnesium	X	X	mg/l				14.6	28.8	28.3
	Sodium	X	X	mg/l				7.3	13.8	16
	SAR	X	X	mg/l				0.30	0.40	0.4
	Chromium, Total	X		mg/l			0.01			
	Chromium 6	X		mg/l		0.011	0.01			
	Chromium 3	X		mg/l		0.052	0.01			
	Potassium	X		mg/l				0.3	1.5	1.2
	Bicarbonate as $CaCO_3$	X	X	mg/l			1	152.0	257.0	258.0

Appendix B

Topographic Map



Legend

- Outflow Sampling Location
- Inflow Sampling Location
- Springs
- Seeps
- Ponds
- Roads
- Lease Boundary
- Section Boundary

Red River Ranch Holdings, LLC
Centralized E&P Waste Management Facility

Las Animas County, CO

0 0.5 1 Miles

1:30,000

Datum:NAD 83
Creator: A.Jarolimek
File Path:R:\Projects\126 Red River Ranch\Maps\EP_annual report

O & G Environmental Consulting
11 Inverness Way South
Englewood, Colorado 80112
tel (720) 529-9777 fax (720) 529-9798
www.ogenvironmental.com

PROJECT	DRAWING	SCALE	DATE	REVISION
Red River Ranch 126	N/A	1:30,000	20080227	1.0

Appendix C

Summary of Local Fire Department Inspection

Summary of Local Fire Department Inspection:

In the fall of 2007 Larry Parsons of the Stonewall, CO Volunteer Fire Department (SVFD) visually inspected and visited each pond location. Mr. Parsons also inspected the emergency shutdown locations and fire extinguishers. No issues were reported. A map was distributed to Mr. Parsons for the SVFD records. A follow up inspection is not necessary; however, communication between the fire department and Red River Ranch is ongoing to maintain compliance.

Appendix D

Stored Material Profile

Multi-well Production Pond Volumes 2007

Red River Ranch Pond Volumes - 2008

(barrels except where noted)

	Pond A Volume	Pond B Volume	Pond D Volume	Pond E Volume
January	231,198	63,550	71,300	23,777
February	205,784	57,739	57,536	19,169
March	206,243	57,040	74,462	24,831
April	112,200	59,220	61,710	41,100
May	197,284	54,560	86,831	28,954
June	205,170	53,070	78,780	26,250
July	197,315	56,513	80,104	-
August	171,492	55,552	86,645	-
September	166,980	57,870	83,910	27,960
October	196,416	78,213	106,485	35,495
November	166,170	50,820	104,940	34,980
December	157,263	29,853	98,673	32,891
Average	737,838	224,667	330,459	98,469
Total	**2,213,515**	**674,000**	**991,376**	**295,407**

Total volume per month

barrels	acrefeet
389,825	50
340,228	44
362,576	47
274,230	35
367,629	47
363,270	47
333,932	43
313,689	40
336,720	43
416,609	54
356,910	46
318,680	41
347,858	45
Total Volume 2008	
4,174,298	**538**

Appendix E

Operating Plan

Red River Ranch Holdings, LLC
Centralized E&P Waste Management Facility
Operating Plan

The Red River Ranch Holdings, LLC (RRRH) centralized E&P waste management facility will be used by RRRH to store produced water derived from coal bed methane drilling and completion operations.

Currently, buried polyethylene (poly) and flex water pipelines convey the water to four multi-well production ponds permitted under the COGCC. Each pond also has a discharge point permitted under the CDPHE. The retention time of the produced water is approximately two days, after which the produced water is discharged through enhanced channels to Lorencito Canyon or Spring Canyon.

The constructed wetland component enhances the visual and aesthetic resources of the property. A discharge permit has been granted by the CDPHE for the discharge points associated with the production ponds. A comprehensive sampling and monitoring program has been implemented to ensure that allowable concentrations are maintained, which includes multiple sampling locations of the produced water prior to reaching the production ponds, visual inspection of the wetland vegetation and soil sampling. The production ponds were designed and constructed to meet the COGCC design requirements to handle projected CBM water flow and allow for discharge to Lorencito Canyon or Spring Canyon.

Should an outfall point associated with a production pond fail a water quality test, RRRH will review the water quality samples taken at each of the well pads to determine if one or multiple wells are contributing to the poor sample. Once identified, the well or wells will be retested and shut down pending the results of the retest. The production pond would also be retested and treatment would begin until acceptable limits are achieved. The CDPHE would also be notified.

Each multi-well production pond will be monitored on a weekly basis (at a minimum) and all outlets (spillways and low-level pipe outlets), culverts, and low-water crossings will be checked quarterly and after major storm events. In addition, the channel section below each production pond will be inspected for signs of overtopping and/or seepage. Inspectors will note the condition of all ponds and discharge points, and check for evidence of erosion, or failure. As conditions are identified that require repair, the appropriate remedial work required will be scheduled and performed. If erosion is noted, it will be immediately mitigated with erosion control measures, modification of discharge structures or locations and, if necessary, diversion of discharges to other locations. Culverts and low-water crossings will be inspected after major storm events. Debris will be removed to prevent culvert blockage and repairs will be made immediately following storm events as necessary.

All of the multi-well production ponds incorporate an agri-drain to control high water levels and to release water from the production pond to either the Lorencito Canyon or Spring Canyon. Also, each multi-well production pond has a constructed wetland component and enhanced discharge channel incorporated into its design and construction.

Record keeping includes metering produced water volumes. Emergency response procedures will be contained within the Spill Prevention, Control and Countermeasure Plan (SPCC) that has been developed for the coal bed methane operations in accordance with Colorado Department of Public Health and Environment and U.S. EPA guidelines. The SPCC will present operational guidance and procedures for avoiding and responding to potential spills. The SPCC Plan will also present emergency response and 24 hour contact information.

If any restoration work, including, but not limited to, dredging and in-stream restoration, takes place within Lorencito Canyon downstream of the multi-well production ponds, RRRH will take soil samples of the reclaimed areas to assure that all COGCC soil standards are still being met.

Last, the RRRH Centralized E&P Waste Management Facility will be available for annual review, to be performed by the COGCC. RRRH requests that a 30-day notice is given before the review is to take place.

Appendix F

Soil Gas Survey

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.
4600 West 60th Avenue
Arvada, Colorado 80003
T 303.433.9788 / F 303.433.1432

July 22, 2008

Mr. Benji Gonzales
Red River Ranch Holdings at Tercio Ranch
15850 County Road 13
Weston, Colorado 81091

RE: Soil Gas Survey at Former Gas Well, Red River Ranch Holdings at Tercio Ranch, Trinidad, Colorado

Dear Mr. Gonzales:

LT Environmental, Inc. (LTE) is pleased to provide Red River Ranch Holdings with this letter summarizing the results of soil gas survey activities conducted in the vicinity of the abandoned Lorencito Canyon well (API #05-071-06149) located beneath a coal bed methane produced water pond. The soil gas survey activities were conducted in response to a request by the Colorado Oil and Gas Conservation Commission (COGCC). The COGCC was concerned for the integrity of the plugging and abandonment (P&A) of the production well.

BACKGROUND

The Site referenced in this report includes the location of the abandoned production well, the coal bed methane produced water pond, and the surrounding land.

At the request of the COGCC, LTE conducted a soil gas survey of the Site in response to a concern for the integrity of the P&A of the production well. LTE conducted this soil gas survey to determine whether potentially hazardous environmental conditions exist in the vicinity of the abandoned production well.

SITE DESCRIPTION

The Site is located in Las Animas County, Colorado, approximately 10 miles south of Torres, Colorado (Figure 1). The abandoned production well is located beneath a lined produced water pond (Pond E). The land surrounding the abandoned production well site consists of forested land, with an active production well to the west, and a creek to the north and east.

The table shown below presents the legal description of the location of the abandoned production well, including the geographic coordinates measured by LTE using a Global Positioning System (GPS).

ABANDONED WELL SITE LOCATION

Lorencito Canyon (API #05-071-06149)			
Geographic Coordinates (NAD83)		PLSS Location	County
Northing	Easting		
696401.196	3164768.696	SWNW Sec. 18, T35S, R67W	Las Animas

API - American Petroleum Institute
NAD 83 - North American Datum 1983, Colorado State Plan South. Units are in feet.
PLSS - Public Land Survey System

SOIL GAS SURVEY METHODOLOGY

On June 26, 2008, LTE conducted a soil gas survey of the Site. LTE used a sampling grid layout with 50-foot spacing to cover the abandoned production well site mapping area systematically and to provide a means to delineate the extent of potential gas seepage. The sampling grid for this survey was centered over the abandoned production well.

During the survey, a slide hammer was used to advance a half-inch diameter steel rod (probe) at the corners of each square on the grid. Tubing was lowered into each borehole and gas measurements were collected directly from the shallow surface soil approximately 3 feet below ground surface (bgs). LTE measured the concentration of combustible gas (methane), carbon monoxide, hydrogen sulfide, and oxygen at each sampling location using a Mine Safety Appliances (MSA) Gasport® four-gas meter.

Subsurface gas measurements were collected at points located around the abandoned production well; Pond E; and the active Red River Ranch Holdings 18-3 R67W (API #05-071-08976) production well adjacent to the site. Each sample point location was recorded using GPS. The measured gas concentrations and other relevant field notes were stored as attributes in the GPS unit with the associated GPS mapped position. A total of 17 subsurface gas measurements were collected from the soil during the gas survey. LTE used the GPS to map additional pertinent site features.

SOIL GAS SURVEY RESULTS

LTE personnel advanced 17 subsurface probes across the project area. Results of this survey indicate that methane was not detected in any sample locations. Oxygen concentrations ranged from 15.4 percent (%) to 18.6%. Detectable concentrations of carbon monoxide ranged from 5 parts per million (ppm) to 15 ppm. No hydrogen sulfide was detected. No stressed vegetation was observed during the survey. Results of the soil gas survey are depicted on Figure 2. Table 1 presents the subsurface gas measurements collected during the survey.

CONCLUSIONS

During the soil gas survey completed by LTE on June 26, 2008, methane seepage was not observed in the vicinity of the abandoned production well, Pond E, or the active production well.

LTE appreciates the opportunity to provide environmental services to Red River Ranch Holdings. If you have any questions regarding this report or would like additional information, please contact us at (303) 433-9788.

Sincerely,

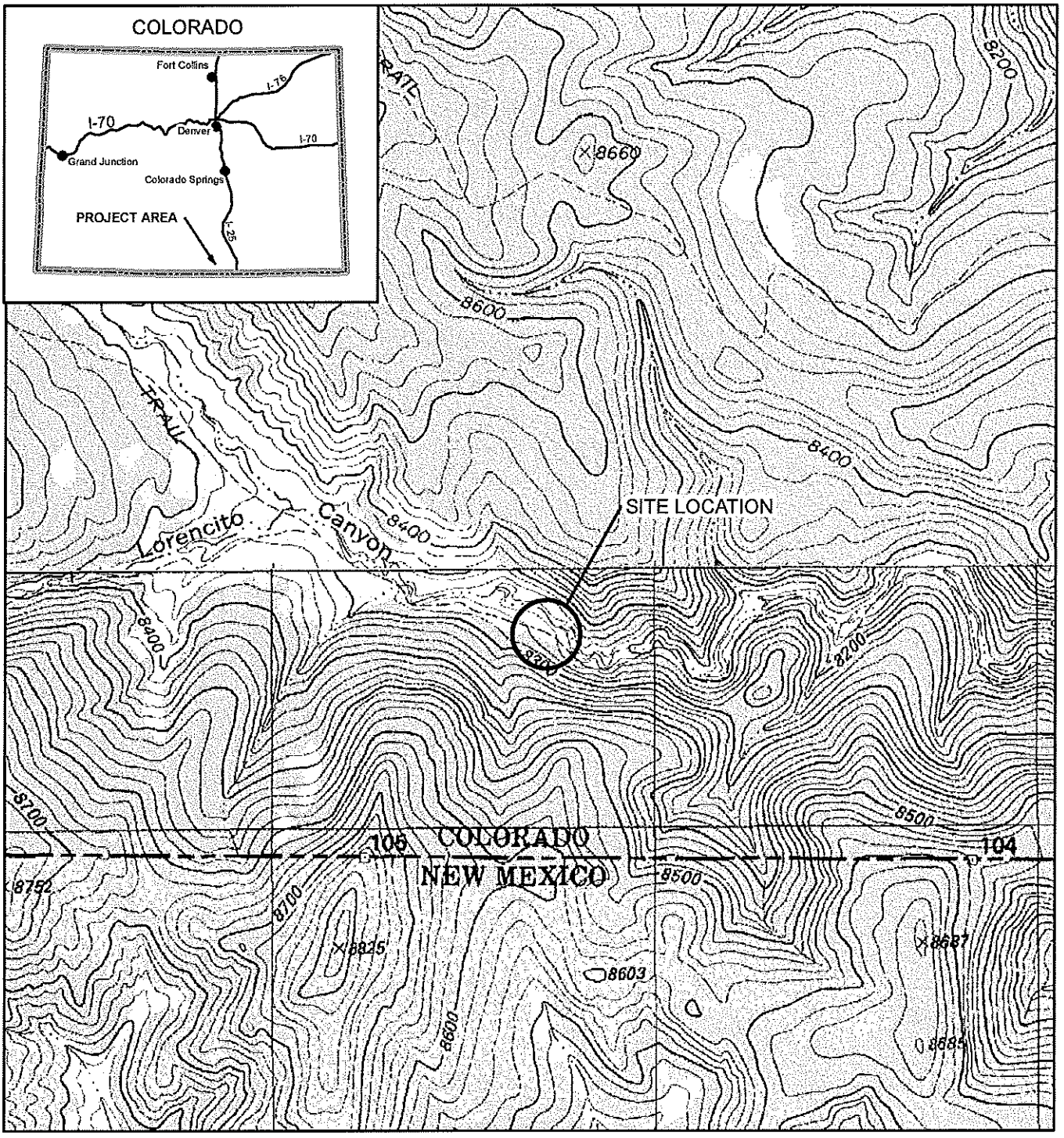
LT ENVIRONMENTAL, INC.

Rob Rebel, E.I.T.
Staff Engineer

Chris Shephard, P.E.
Principal/Project Manager

Attachments

FIGURES AND TABLE



Map Source: USGS/NRCS, 2005

N

0 600 1,200 2,400 Feet

LEGEND

SITE LOCATION

FIGURE 1
SITE LOCATION MAP
POND E
LAS ANIMAS COUNTY, COLORADO

RED RIVER RANCH HOLDINGS

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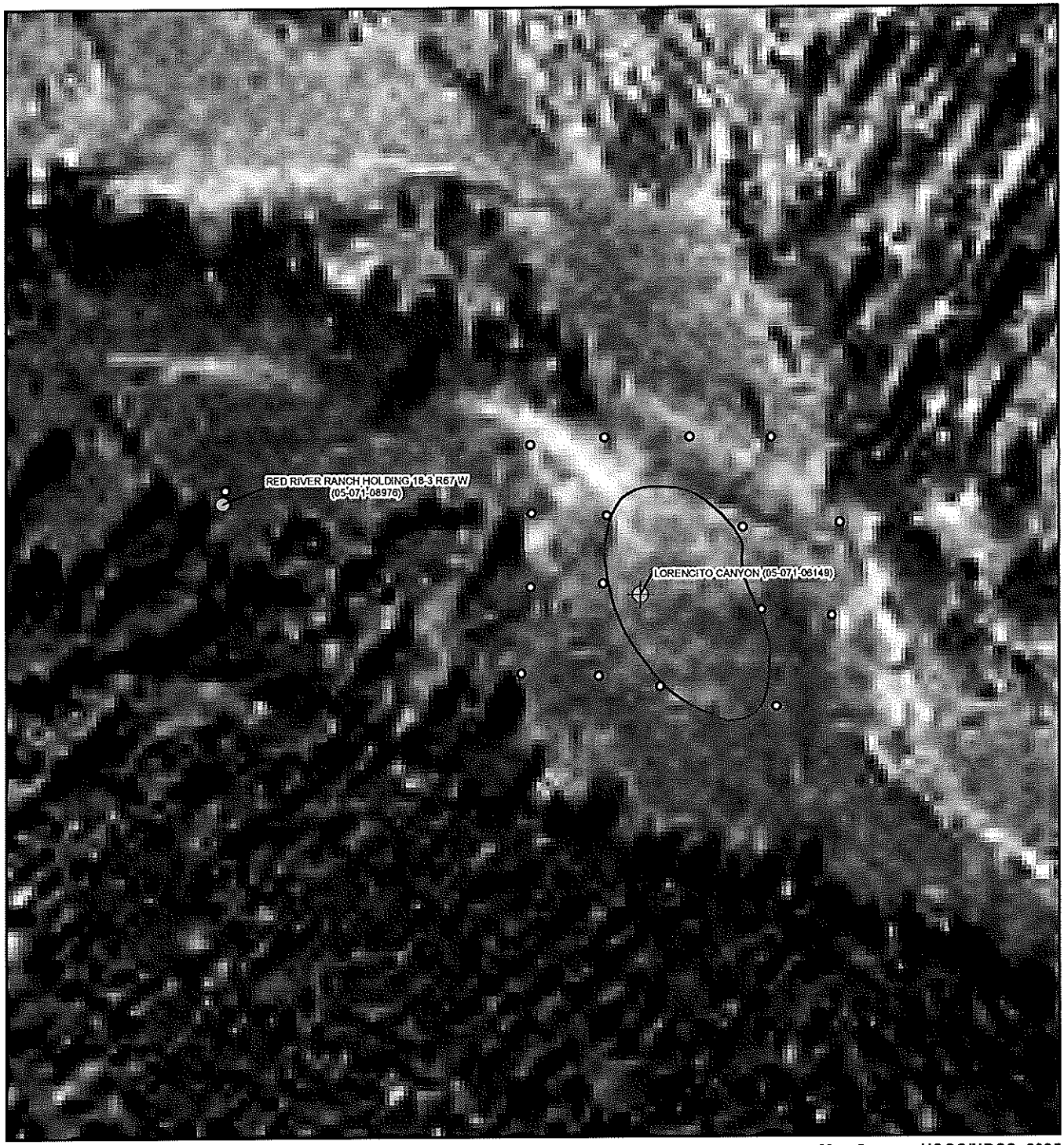

Map Source: USGS/NRCS, 2005

LEGEND

SUBSURFACE METHANE MEASUREMENTS

- 0 ppm
- 1 ppm - 500 ppm
- 501 ppm - 5%
- 6% - 15%
- 16% - 25%
- 26% - 50%
- 51% - 75%
- 76% - 100%

PPM - PARTS PER MILLION

- PRODUCING WELL
- PLUGGED AND ABANDONED WELL
- PRODUCED WATER POND (POND E)

0 50 100 200 Feet

N

FIGURE 2
SOIL GAS SURVEY RESULTS MAP
POND E
LAS ANIMAS COUNTY, COLORADO

RED RIVER RANCH HOLDINGS

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TABLE 1
SOIL GAS SURVEY DATA
POND E
TRINIDAD, COLORADO
RED RIVER RANCH HOLDINGS

Point ID	GPS Coordinates*		Sample Date	Subsurface CH_4 Conc. (%LEL)	Subsurface O_2 Conc. (%)	Subsurface H_2S Conc. (ppm)	Subsurface CO Conc. (ppm)
	NORTHING	EASTING					
1	696408.967	3164742.634	6/26/2008	<1	17.6	<1	<1
2	696456.723	3164745.238	6/26/2008	<1	17.0	<1	5
3	696448.373	3164841.873	6/26/2008	<1	16.7	<1	15
4	696322.128	3164865.483	6/26/2008	<1	18.6	<1	<1
5	696336.689	3164783.339	6/26/2008	<1	15.4	<1	7
6	696343.728	3164739.130	6/26/2008	<1	18.2	<1	15
7	696346.007	3164684.571	6/26/2008	<1	18.4	<1	<1
8	696406.451	3164690.736	6/26/2008	<1	18.1	<1	15
9	696458.435	3164691.786	6/26/2008	<1	18.3	<1	<1
10	696475.459	3164474.309	6/26/2008	<1	18.5	<1	5
11	696506.691	3164690.656	6/26/2008	<1	18.5	<1	<1
12	696511.868	3164743.614	6/26/2008	<1	18.5	<1	<1
13	696512.122	3164804.079	6/26/2008	<1	18.6	<1	<1
14	696511.697	3164862.211	6/26/2008	<1	18.5	<1	<1
15	696451.839	3164910.575	6/26/2008	<1	18.5	<1	<1
16	696385.846	3164905.064	6/26/2008	<1	18.5	<1	9
17	696390.207	3164855.210	6/26/2008	<1	18.0	<1	<1

Notes:

* GPS coordinates are in Colorado State Plan South, NAD83. Units are in Feet (ft.)

CH_4 - methane

O_2 - oxygen

H_2S - hydrogen sulfide

CO - carbon monoxide

Conc. - concentration

ppm - parts per million

% - percent

LEL - lower explosive limit

< - less than