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November 17, 2008

#3116075

Ms. Lorena Goerger, Project Manager  
New Mexico Environment Department  
Petroleum Storage Tank Bureau  
1301 Siler Road  
Building B  
Santa Fe, NM 87507

**RE: FIFTH QUARTERLY GROUND WATER MONITORING REPORT FOR  
CONOCO MINI MART, 3837 HIGHWAY 64, CHAMA, NEW MEXICO  
FACILITY #27498 RID #2316 WPID #3264-4**

Dear Ms. Goerger:

The following is the fifth quarterly ground water monitoring report since the UST removal and excavation at the above referenced site. The sampling event was completed on October 1, 2008.

Included with the report are the laboratory analyses for the water samples collected from the monitoring wells associated with the release site.

If you have any additional questions, please do not hesitate to call.

Sincerely,

SOUDER, MILLER & ASSOCIATES

A handwritten signature in blue ink that reads "Tami Ross".

Tami Ross  
Staff Scientist

A handwritten signature in blue ink that reads "Reid S. Allan".

Reid S. Allan, P.G.  
Vice President/Principal Scientist

# **FIFTH QUARTER GROUND WATER MONITORING REPORT**

For

**Conoco Mini-Mart  
3837 Highway 64  
Chama, New Mexico  
Facility #27498 RID #2316 WPID #3264-4**

November 17, 2008



**Prepared For:  
New Mexico Environment Department  
Petroleum Storage Tank Bureau**



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**COVER PAGE  
FORM 1216  
QUARTERLY MONITORING REPORT**

**1. Site Name:**

Conoco Mini Mart

**2. Responsible party:**

State Lead Site

**3. Responsible party mailing address** (list contact person if different):

2044 Galisteo Street  
Santa Fe, NM 87505

**4. Facility Number:**

27498

**5. Address/legal description:**

3837 US Hwy 64, Chama, NM

**6. Author/consulting company:**

Tami Ross and Souder, Miller & Associates

**7. Date of report:**

November 17, 2008

**8. Date of confirmation of release or date PSTB was notified of release:**

May 16, 1994

## STATEMENT OF FAMILIARITY

I, the undersigned, am personally familiar with the information submitted in this report and the attached documents and attest that it is true and complete.



Tami C. Ross  
Staff Scientist



Reid S. Allan  
Vice President/Principal Scientist

November 17, 2008

## I Introduction

### A. Scope of Work:

This report is pursuant to the October 4, 2007 work plan approved by the New Mexico Environment Department (NMED) (WPID# 3264-3). On October 1, 2008, ground water samples were collected from seven site monitoring wells: MW-6, MW-7, MW-9, MW-10, MW-11, MW-12 and MW-13 as shown on Figure 2. The site location is illustrated in Figure 1.

### B. This quarter's highlights, if any.

This is the fifth quarterly sampling event since the underground storage tank (UST) removal and remedial excavation on the north side of the site. The site excavation removed 1,060 cubic yards of hydrocarbon contaminated soil. UST removal, excavation, backfill, and compaction work was completed from December 11-15, 2006.

Contaminants of concern (COC) are above New Mexico Water Quality Control Commission Regulation (NMWQCCR) standards in monitoring wells MW-7 and MW-9. Concentrations of COCs have increased and decreased in individual wells since the last sampling event on June 27, 2008. Benzene concentrations are above NMWQCCR standard in MW-9, off-site monitoring well, for the first time since the installation of the monitoring well in April 2007. Tables 2 and 3 summarize the ground water sample analyses for this quarterly event.

Non-aqueous phase hydrocarbon liquid (NAPL) was not present in site monitoring wells.

## II Activities Performed During This Quarter

### A. Brief description of remediation system and date installed.

Not applicable.

### B. Description of activities performed to keep system operating properly including: inspections, maintenance procedures and modifications, if any.

Not applicable.

### C. Monitoring activities performed.

## Volatile Organic Monitoring

Seven site monitoring wells (MW-6, MW-7, MW-9, MW-10, MW-11, MW-12, and MW-13) at the Conoco Mini Mart were sampled on October 1, 2008 and analyzed for volatile organics by EPA Method 8021 and polynuclear aromatic hydrocarbons by EPA Method 8310. Figures 4 – 6 are contaminant concentration contour maps. Procedures for sampling the monitoring wells are described in Appendix 1. Laboratory results are included in Appendix 3. Analytical results are provided in Tables 2 and 3.

The highest concentration of contaminants is located in the vicinity of MW-7. Based on this information, SMA believes that the car wash is potentially a second source for the ground water contamination plume.

During this quarterly sampling event, down gradient monitoring well MW-9 showed a notable increase in the concentrations of benzene, toluene, ethylbenzene and naphthalenes since the last sampling event in June, 2008. The benzene concentration exceeded NMWQCCR standards at 11.0 ppb during this sampling event.

## Dissolved Lead Monitoring

Pursuant to the current scope of work, monitoring wells were not sampled for dissolved lead in this quarter. History of sampling for dissolved lead is recorded in Table 2.

## Non-Aqueous Phase Liquid Monitoring

No NAPL was observed in site monitoring wells during this quarterly sampling event.

## Ground Water Measurements

This quarter, seven site monitoring wells were gauged for depth to water on October 1, 2008. Field notes are included in Appendix 2. The historical ground water elevation data for the site can be found in Table 1. Figure 3 is a potentiometric surface map. In general, the direction of ground water flow is to the south at a gradient of 0.013 ft/ft. The ground water flow direction and gradient are consistent with historical monitoring results. Ground water levels have decreased an average of 0.60 feet since the June 2008 sampling event.

## III Summary and Conclusions

A. *Discussion of any trends or changes noted in analytical results or site conditions.*

This quarterly sampling is the fifth sampling event since the UST removal and excavation. Contaminants of concern (benzene, total xylenes, and naphthalene) are above the NMWQCCR standards in monitoring wells MW-7 and MW-9.

Overtime, concentrations of COCs have decreased and increased in individual monitoring wells. It is not yet apparent whether the source area excavation of December 2006 has had a beneficial effect on dissolved phase contaminants of concern.

*B. Ongoing assessment of remediation system.*

Not applicable for this quarterly event.

*C. Recommendations.*

SMA recommends the following:

1. Due to the fact the soils remaining in place, beneath the car wash are above NMED standards for BTEX components and Naphthalenes, SMA recommends demolition of the car wash and removal of the soils beneath the car wash.
2. SMA recommends continued quarterly monitoring of all site monitoring wells.

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## Figures

1. Vicinity Map
2. Site Map
3. Potentiometric Surface Map
4. Benzene Concentration Map
5. Total Xylenes Concentration Map
6. Total Naphthalenes Concentration Map

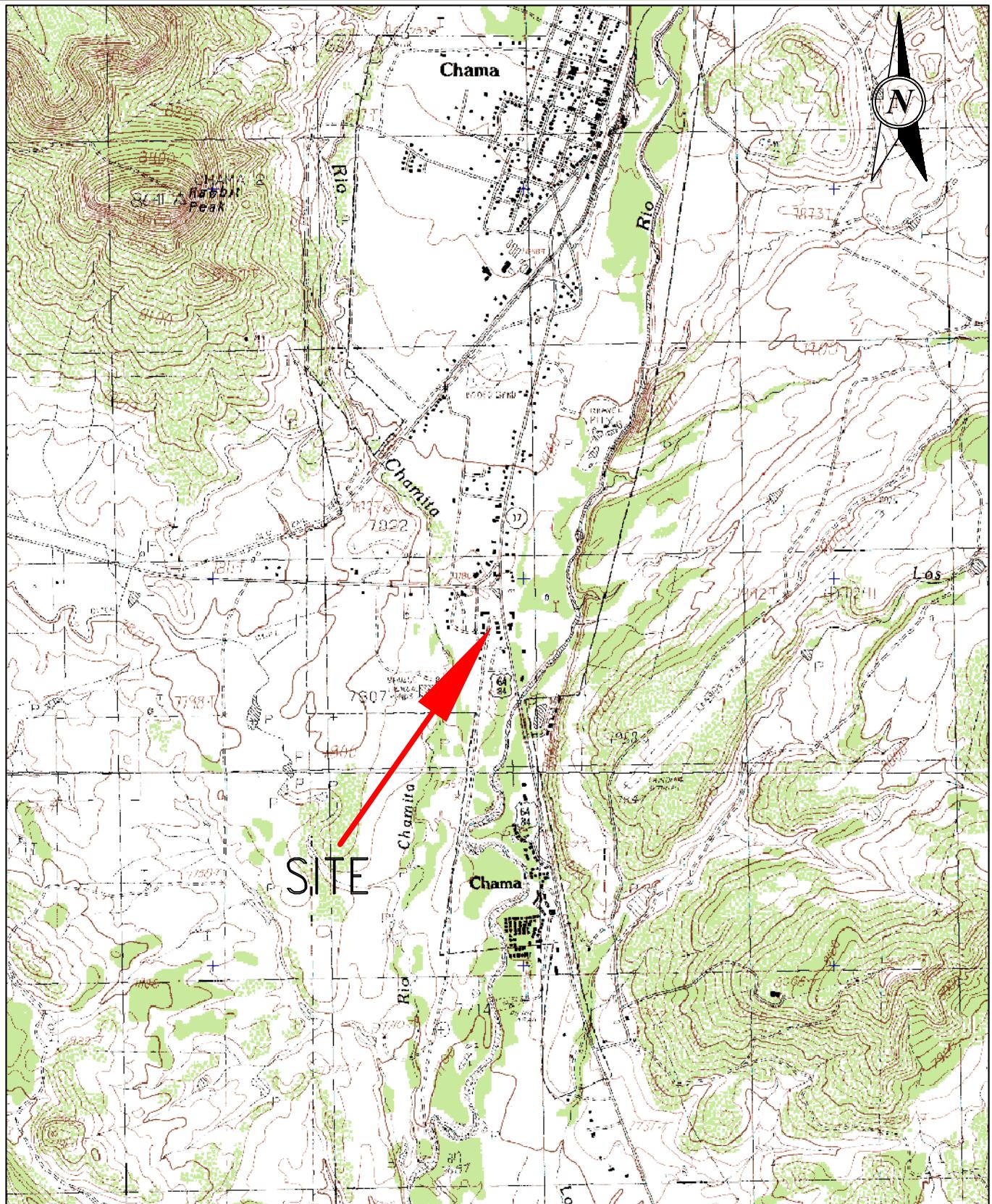
## Tables

1. Summary of Ground Water Elevation Results
2. Summary of Ground Water Sample Analysis (8021)
3. Summary of Ground Water Sample Analysis (8310)

## Appendices

1. Sampling protocol
2. Field notes
3. Laboratory results

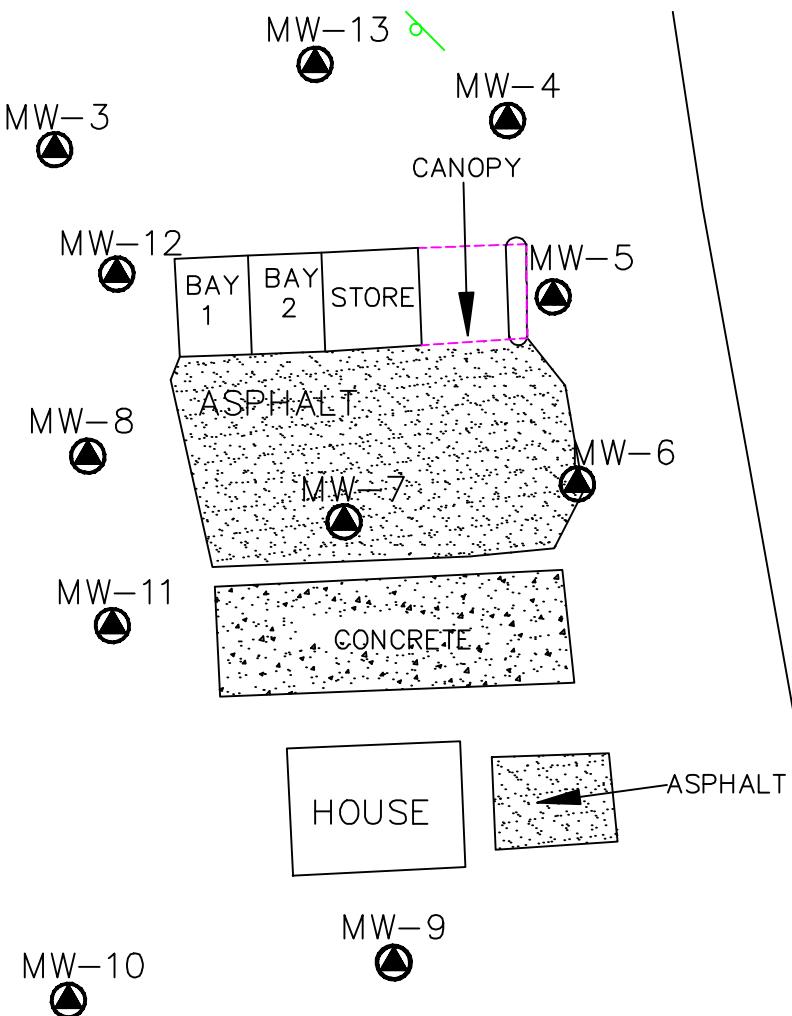
## **Figures**



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Santa Fe - Farmington  
Albuquerque - Las Cruces

APPROVED: RCA	DATE: 8/8/06
DRAWN BY: TROSS	DATE: 8/8/06
REVISIONS BY:	DATE:
PROJECT NO: 3116075	FIGURE: 1

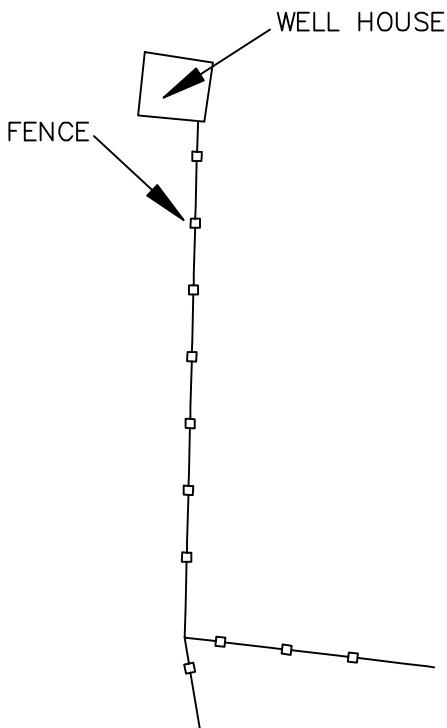
**VICINITY MAP**  
**CONOCO MINI MART**  
**3837 HWY 64**  
**CHAMA, NEW MEXICO**

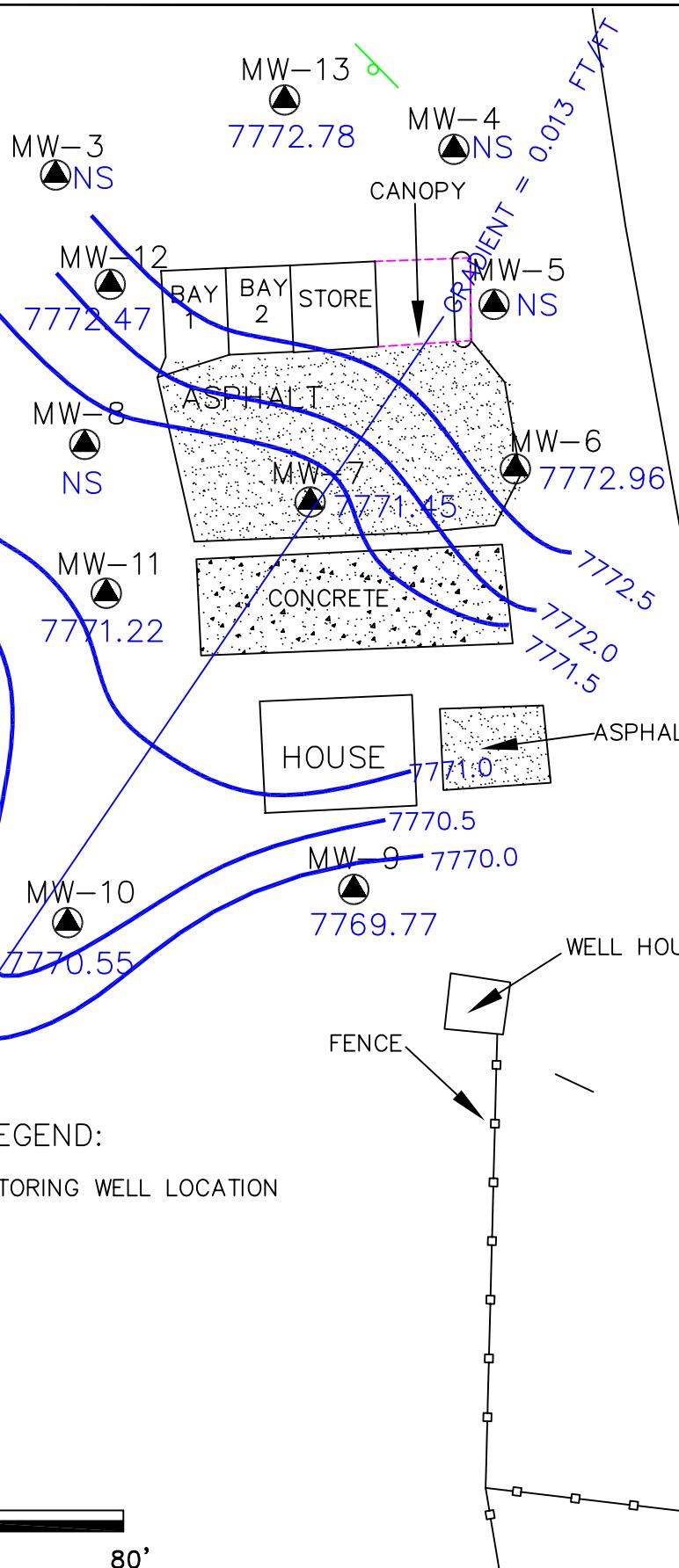


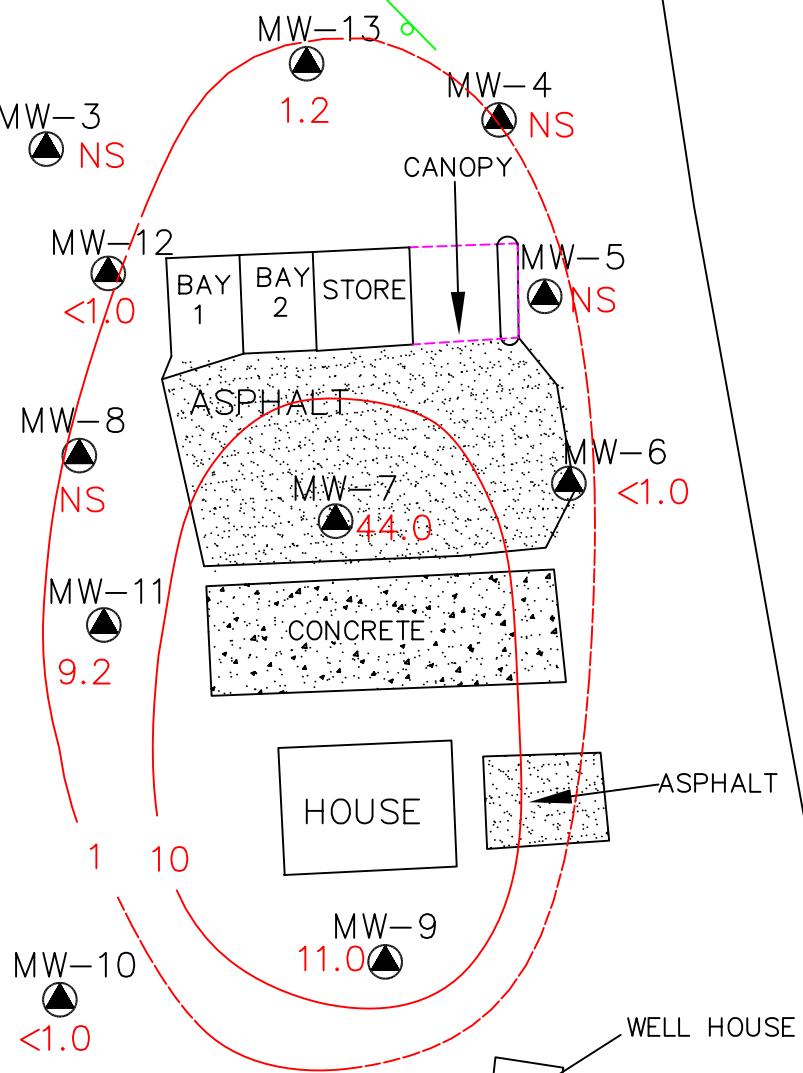
LEGEND:

- MW-11 — MONITORING WELL LOCATION  
— SIGN

SCALE  
0' 20' 40' 80'



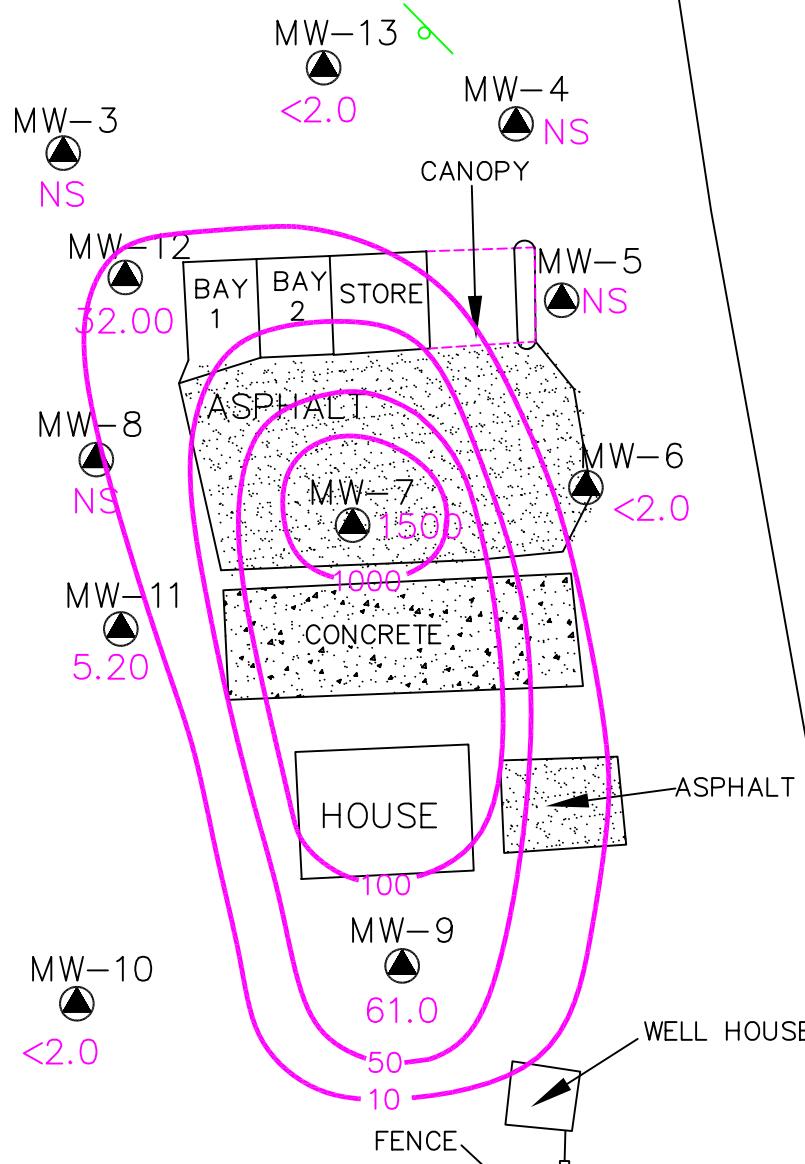




LEGEND:

- MW-11 (black triangle) — MONITORING WELL LOCATION
- (green dashed line with circle) — SIGN
- (dashed line) — BENZENE CONTAMINANT CONTOUR (DASHED WHERE INFERRED) ( $\mu\text{g}/\text{L}$ )

SCALE  
0' 20' 40' 80'

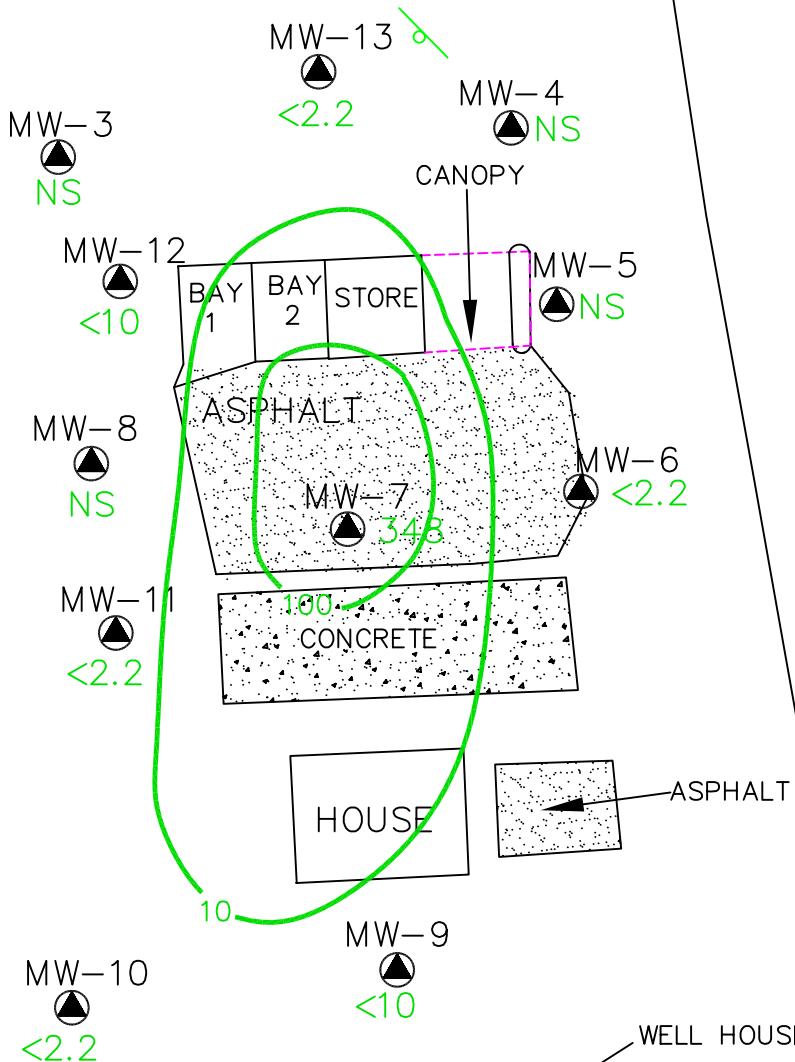


LEGEND:

- MW-11 — MONITORING WELL LOCATION
- SIGN
- XYLENES CONTAMINANT CONTOUR (DASHED WHERE INFERRED) (ug/L)

SCALE

0' 20' 40' 80'



LEGEND:

- MW-11
- MONITORING WELL LOCATION
- SIGN
- - - TOTAL NAPHTHALENE CONCENTRANT CONTOUR(ug/L) (DASHED WHERE INFERRED)

SCALE  
0' 20' 40' 80'

U.S. HIGHWAY 64/84

**Table 1**  
**Summary of Groundwater Elevation Results**  
**Conoco Mini Mart**  
**Chama, New Mexico**

(Feet)

Monitoring Well Identification	Date	Total Depth of Well	Top of Casing	Depth to Water	Relative Water Elevation
MW-1	7/8/2005	15.00	7780.17	5.74	7774.43
	7/10/2006	14.71		5.26	7774.91
	4/4/2007	<i>DESTROYED DURING TANK PULL</i>			
MW-2	7/8/2005	15.00	7779.97	6.01	7773.96
	7/10/2006	15.75		5.78	7774.19
	4/4/2007	<i>DESTROYED DURING TANK PULL</i>			
MW-3	7/8/2005	15.50	7780.16	5.76	7774.40
	7/10/2006	15.00		6.21	7773.95
	4/4/2007	<i>UNABLE TO LOCATE</i>			
MW-4	7/8/2005	15.50	7779.55	4.40	7775.15
	7/10/2006	14.94		4.58	7774.97
	4/4/2007	14.09		2.96	7776.59
MW-5	7/8/2005	15.00	7779.02	5.76	7773.26
	7/10/2006	14.60		5.93	7773.09
	4/4/2007	14.65		3.39	7775.63
MW-6	7/8/2005	12.00	7778.61	5.63	7772.98
	7/10/2006	11.30		5.90	7772.71
	4/4/2007	11.30		3.74	7774.87

**Table 1**  
**Summary of Groundwater Elevation Results**  
**Conoco Mini Mart**  
**Chama, New Mexico**

(Feet)

Monitoring Well Identification	Date	Total Depth of Well	Top of Casing	Depth to Water	Relative Water Elevation
MW-7	7/8/2005	12.50	7779.28	6.84	7772.44
	7/10/2006	11.90		6.59	7772.69
	4/4/2007	12.00		4.79	7774.49
MW-8	7/8/2005	15.00	7779.64	7.76	7771.88
	7/10/2006	14.85		7.91	7771.73
	4/4/2007	14.95		6.71	7772.93
MW-9	4/4/2007	11.30	7777.49	4.92	7772.57
MW-10	4/4/2007	13.30	7777.61	4.88	7772.73
MW-11	4/4/2007	12.00	7778.53	4.74	7773.79
MW-12	4/4/2007	13.55	7780.28	5.75	7774.53
MW-13	4/4/2007	13.55	7780.47	5.99	7774.48
AVERAGE DEPTH TO GROUNDWATER					
		4.79 FEET			
AVERAGE INCREASE IN ELEVATION					
		1.86 Feet			



**Table 2**  
**Summary of Groundwater Sample Analytical Results**  
**US EPA Method 8021**  
**Conoco Mini Mart**  
**Chama, New Mexico**

Monitoring Well Identification	Method 8021							Method 6010		
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead		
MW-1	7/8/2005	58.0	2.1	160.0	290.0	510.1	<1.0	NA		
	7/10/2006	5.8	<0.5	17.9	13.2	36.9	<1.0	NA		
	4/4/2007				DESTROYED DURING TANK PULL					
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05		
Monitoring Well Identification	Method 8021							Method 6010		
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead		
MW-2	7/8/2005	290.0	32.0	720.0	1800.0	2842.0	<5.0	NA		
	7/10/2006	174.0	9.0	357.0	418.3	958.3	11.5	NA		
	4/4/2007				DESTROYED DURING TANK PULL					
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05		
Monitoring Well Identification	Method 8021							Method 6010		
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead		
MW-3	7/8/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA		
	7/10/2006	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	NA		
	4/4/2007				UNABLE TO LOCATE					
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05		
Monitoring Well Identification	Method 8021							Method 6010		
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead		
MW-4	7/8/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA		
	7/10/2006	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	NA		
	4/4/2007	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<0.009		
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05		

**Table 2**  
**Summary of Groundwater Sample Analytical Results**  
**US EPA Method 8021**  
**Conoco Mini Mart**  
**Chama, New Mexico**

Monitoring Well Identification	Method 8021						Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
<b>MW-5</b>	7/8/2005	<1.0	4.8	210.0	<b>940.0</b>	1154.8	<1.0	NA
	7/10/2006	<0.5	1.9	142.0	255.5	399.4	1.7	NA
	4/4/2007	1.9	0.49	195.0	282.9	478.4	<1.0	<0.009
<b>NMWQCC and 20 NMAC 5 Standards</b>		10.0	750.0	750.0	620.0		100.0	0.05
Monitoring Well Identification	Method 8021						Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
<b>MW-6</b>	7/8/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	7/10/2006	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	NA
	4/4/2007	<2.5	<2.5	<2.5	0.87	0.87	<5.0	<0.009
<b>NMWQCC and 20 NMAC 5 Standards</b>		10.0	750.0	750.0	620.0		100.0	0.05
Monitoring Well Identification	Method 8021						Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
<b>MW-7</b>	7/8/2005	<b>700.0</b>	86.0	530.0	<b>1300.0</b>	2616.0	<10	NA
	7/10/2006	<b>50.0</b>	21.7	399.0	<b>1264.0</b>	1734.7	17.5	NA
	4/4/2007	<b>62.6</b>	12.00	508.0	<b>1655.00</b>	2237.60	23.3	<0.009
<b>NMWQCC and 20 NMAC 5 Standards</b>		10.0	750.0	750.0	620.0		100.0	0.05
Monitoring Well Identification	Method 8021						Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
<b>MW-8</b>	7/8/2005	<b>49.0</b>	42.0	600.0	<b>1600.0</b>	2291.0	<10	NA
	7/10/2006	<b>75.8</b>	3.7	425.0	503.0	1007.5	44.3	NA
	4/4/2007	<b>49.7</b>	7.96	570.0	<b>1126.90</b>	1754.56	80.9	<0.018
<b>NMWQCC and 20 NMAC 5 Standards</b>		10.0	750.0	750.0	620.0		100.0	0.05

**Table 2**  
**Summary of Groundwater Sample Analytical Results**  
**US EPA Method 8021**  
**Conoco Mini Mart**  
**Chama, New Mexico**

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-9	4/4/2007	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05
Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-10	4/4/2007	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05
Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-11	4/4/2007	31.1	16.1	138.0	70.98	256.2	<5.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05
Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-12	4/4/2007	10.9	<2.5	43.5	129.00	183.4	<5.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05
Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-13	4/4/2007	19.7	8.36	193.0	380.60	601.7	19.7	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Notes:

Data in italics adopted from INTERA report dated 9/7/2005 (analyzed per Method 8260)

Method 8021 results in ug/L; Method 6010 results in mg/L

MTBE = Methyl Tertiary Butyl Ether

Red indicates concentration exceeds standard

NA = Not Analyzed

Table 3  
 Summary of Groundwater Analytical Results  
 US EPA Method 8310  
 Conoco Mini Mart  
 Chama, New Mexico

Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-1	7/10/2006	<0.943	<0.943	<0.189	<0.0943	<0.0943	<0.132	<0.0943	<0.189	<0.189	<0.472	1.57	<0.472	<0.189
	4/4/2007											DESTROYED DURING TANK PULL		
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-2	7/10/2006											620.00		
	4/4/2007											DESTROYED DURING TANK PULL		
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-3	7/10/2006	<0.943	<0.943	<0.189	<0.0943	<0.0943	<0.132	<0.0943	<0.189	<0.189	<0.472	<0.943	<0.472	<0.189
	4/4/2007											UNABLE TO LOCATE		
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-4	7/10/2006	<1.0	<1.0	<0.2	<0.1	<0.1	<0.14	<0.1	<0.2	<0.2	<0.5	<1.0	<0.5	<0.2
	4/4/2007	<1.00	<1.00	<0.2	<0.1	<0.1	<0.14	<0.1	<0.2	<0.2	<0.5	<1.0	<0.5	<0.2
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-5	7/10/2006	<0.952	<0.952	<0.19	<0.0952	<0.0952	<0.133	0.334	<0.19	<0.19	<0.476	96.9	<0.476	<0.19
	4/4/2007	<1.18	<1.18	<0.235	<0.118	<0.118	<0.165	<0.118	<0.235	<0.235	<0.588	104.7	<0.588	<0.235
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-6	7/10/2006	<0.943	<0.943	<0.189	<0.0943	<0.0943	<0.132	<0.0943	<0.189	<0.189	<0.472	<0.943	<0.472	<0.189
	4/4/2007	<0.980	<0.980	<0.196	<0.0980	<0.0980	<0.137	<0.0980	<0.196	<0.196	<0.490	<0.980	<0.490	<0.196
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-7	7/10/2006	73.00	<0.943	<0.189	<0.0943	12.7	<0.132	<0.0943	<0.189	<0.189	<0.472	427.6	30.6	0.273
	4/4/2007	71.50	<1.25	<0.250	<0.125	<0.125	<0.175	<0.125	<0.250	<0.250	6.68	488.5	19.5	<0.250
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00

**Table 3**  
**Summary of Groundwater Analytical Results**  
**US EPA Method 8310**  
**Conoco Mini Mart**  
**Chama, New Mexico**

Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
<b>MW-8</b>	7/10/2006	5.73	<0.952	<0.190	<0.0952	<0.0952	<0.133	<0.0952	<0.190	<0.190	<0.476	<b>74.1</b>	24.5	<0.190
	4/4/2007	63.60	<0.980	<0.196	<0.0980	<0.0980	<0.137	<0.0980	<0.196	<0.196	5.44	<b>233.70</b>	36.6	<0.196
<b>NMWQCC Standard</b>		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
<b>MW-9</b>	4/4/2007	<0.971	<0.971	<0.194	<0.0971	<0.0971	<0.136	<0.0971	<0.194	<0.194	<0.485	<0.971	<0.485	<0.194
<b>NMWQCC Standard</b>		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
<b>MW-10</b>	4/4/2007	<0.971	<0.971	<0.194	<0.0971	<0.0971	<0.136	<0.0971	<0.194	<0.194	<0.485	<0.971	<0.485	<0.194
<b>NMWQCC Standard</b>		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
<b>MW-11</b>	4/4/2007	24.20	<0.971	<0.194	<0.0971	<0.0971	<0.136	<0.0971	<0.190	<0.194	<0.485	<b>52.8</b>	15.2	1.86
<b>NMWQCC Standard</b>		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
<b>MW-12</b>	4/4/2007	18.80	<0.990	<0.198	<0.099	<0.099	<0.139	<0.099	<0.198	<0.198	<0.495	<b>39.98</b>	18.1	<0.198
<b>NMWQCC Standard</b>		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
<b>MW-13</b>	4/4/2007	16.90	<1.18	<0.235	<0.118	<0.118	<0.165	<0.118	<0.235	<0.235	<0.588	<b>69.6</b>	<0.588	<0.235
<b>NMWQCC Standard</b>		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00

Notes:

Methods 8310 results in ug/L

Red indicates concentration exceeds standard

**Tables**

**Table 1**  
**Summary of Groundwater Elevation Results**  
**Conoco Mini Mart**  
**Chama, New Mexico**

(Feet)

Monitoring Well Identification	Date	Total Depth of Well	Top of Casing	Depth to Water	Relative Water Elevation		
MW-1	7/8/2005	15.00	7780.17	5.74	7774.43		
	7/10/2006	14.71		5.26	7774.91		
	4/4/2007		<i>DESTROYED DURING TANK PULL</i>				
MW-2	7/8/2005	15.00	7779.97	6.01	7773.96		
	7/10/2006	15.75		5.78	7774.19		
	4/4/2007		<i>DESTROYED DURING TANK PULL</i>				
MW-3	7/8/2005	15.50	7780.16	5.76	7774.40		
	7/10/2006	15.00		6.21	7773.95		
	4/4/2007		<i>UNABLE TO LOCATE</i>				
	10/25/2007		<i>NOT MEASURED</i>				
MW-4	7/8/2005	15.50	7779.55	4.40	7775.15		
	7/10/2006	14.94		4.58	7774.97		
	4/4/2007	14.09		2.96	7776.59		
	10/25/2007		<i>NOT MEASURED</i>				
	4/1/2008		<i>NOT MEASURED</i>				
	6/27/2008		<i>NOT MEASURED</i>				
	10/1/2008		<i>NOT MEASURED</i>				
MW-5	7/8/2005	15.00	7779.02	5.76	7773.26		
	7/10/2006	14.60		5.93	7773.09		
	4/4/2007	14.65		3.39	7775.63		
	10/25/2007		<i>NOT MEASURED</i>				
	4/1/2008		<i>NOT MEASURED</i>				
	6/27/2008		<i>NOT MEASURED</i>				
	10/1/2008		<i>NOT MEASURED</i>				
MW-6	7/8/2005	12.00	7778.61	5.63	7772.98		
	7/10/2006	11.30		5.90	7772.71		
	4/4/2007	11.30		3.74	7774.87		
	10/25/2007	11.29		5.31	7773.30		
	4/1/2008	11.34		2.40	7776.21		
	6/27/2008	11.45		5.22	7773.39		
	10/1/2008	11.42		5.65	7772.96		

**Table 1**  
**Summary of Groundwater Elevation Results**  
**Conoco Mini Mart**  
**Chama, New Mexico**

(Feet)

Monitoring Well Identification	Date	Total Depth of Well	Top of Casing	Depth to Water	Relative Water Elevation
MW-7	7/8/2005	12.50	7779.28	6.84	7772.44
	7/10/2006	11.90		6.59	7772.69
	4/4/2007	12.00		4.79	7774.49
	10/25/2007	11.95		7.33	7771.95
	4/1/2008	12.13		3.61	7775.67
	6/27/2008	12.12		6.96	7772.32
	10/1/2008	12.14		7.83	7771.45
MW-8	7/8/2005	15.00	7779.64	7.76	7771.88
	7/10/2006	14.85		7.91	7771.73
	4/4/2007	14.95		6.71	7772.93
	10/25/2007		NOT MEASURED		
	4/1/2008		NOT MEASURED		
	6/27/2008		NOT MEASURED		
	10/1/2008		NOT MEASURED		
MW-9	4/4/2007	11.30	7777.49	4.92	7772.57
	10/25/2007	10.52		7.26	7770.23
	4/1/2008	13.14		3.23	7774.26
	6/27/2008	12.86		6.95	7770.54
	10/1/2008	12.96		7.72	7769.77
MW-10	4/4/2007	13.30	7777.61	4.88	7772.73
	10/25/2007	13.17		6.75	7770.86
	4/1/2008	13.40		2.68	7774.93
	6/27/2008	13.40		6.51	7771.10
	10/1/2008	13.40		7.06	7770.55
MW-11	4/4/2007	12.00	7778.53	4.74	7773.79
	10/25/2007	14.81		7.83	7770.70
	4/1/2008	11.40		3.04	7775.49
	6/27/2008	11.44		6.76	7771.77
	10/1/2008	11.30		7.31	7771.22
MW-12	4/4/2007	13.55	7780.28	5.75	7774.53
	10/25/2007	12.84		7.60	7772.68
	4/1/2008	12.97		3.93	7776.35
	6/27/2008	13.00		7.38	7772.90
	10/1/2008	12.95		7.81	7772.47
MW-13	4/4/2007	13.55	7780.47	5.99	7774.48
	10/25/2007	14.51		7.57	7772.90
	4/1/2008	13.67		3.54	7776.93
	6/27/2008	13.69		7.10	7773.37
	10/1/2008	13.69		7.69	7772.78
AVERAGE DEPTH TO GROUNDWATER		7.30			
AVERAGE DECREASE IN ELEVATION		0.60 Feet			

Table 2  
 Summary of Groundwater Sample Analytical Results  
 US EPA Method 8021  
 Conoco Mini Mart  
 Chama, New Mexico

Monitoring Well Identification	Method 8021							Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead	
MW-1	7/8/2005	58.0	2.1	160.0	290.0	510.1	<1.0	NA	
	7/10/2006	5.8	<0.5	17.9	13.2	36.9	<1.0	NA	
	4/4/2007						DESTROYED DURING TANK PULL		
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05	
Monitoring Well Identification	Method 8021							Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead	
MW-2	7/8/2005	290.0	32.0	720.0	1800.0	2842.0	<5.0	NA	
	7/10/2006	174.0	9.0	357.0	418.3	958.3	11.5	NA	
	4/4/2007						DESTROYED DURING TANK PULL		
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05	
Monitoring Well Identification	Method 8021							Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead	
MW-3	7/8/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	
	7/10/2006	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	NA	
	4/4/2007				UNABLE TO LOCATE				
	10/25/2007				NOT SAMPLED				
	4/1/2008				NOT SAMPLED				
	6/27/2008				NOT SAMPLED				
	10/1/2008				NOT SAMPLED				
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05	
Monitoring Well Identification	Method 8021							Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead	
MW-4	7/8/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	
	7/10/2006	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	NA	
	4/4/2007	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<0.009	
	10/25/2007				NOT SAMPLED				
	4/1/2008				NOT SAMPLED				
	6/27/2008				NOT SAMPLED				
	10/1/2008				NOT SAMPLED				
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05	

Table 2  
 Summary of Groundwater Sample Analytical Results  
 US EPA Method 8021  
 Conoco Mini Mart  
 Chama, New Mexico

Monitoring Well Identification	Method 8021						Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-5	7/8/2005	<1.0	4.8	210.0	940.0	1154.8	<1.0	NA
	7/10/2006	<0.5	1.9	142.0	255.5	399.4	1.7	NA
	4/4/2007	1.9	0.49	195.0	282.9	478.4	<1.0	<0.009
	10/25/2007				NOT SAMPLED			
	4/1/2008				NOT SAMPLED			
	6/27/2008				NOT SAMPLED			
	10/1/2008				NOT SAMPLED			
	NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0
Monitoring Well Identification	Method 8021						Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-6	7/8/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	7/10/2006	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	NA
	4/4/2007	<2.5	<2.5	<2.5	0.87	0.87	<5.0	<0.009
	10/25/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<2.5	NA
	4/1/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<2.5	NA
	6/27/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<2.5	NA
	10/1/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<2.5	NA
	NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0
Monitoring Well Identification	Method 8021						Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-7	7/8/2005	700.0	86.0	530.0	1300.0	2616.0	<10	NA
	7/10/2006	50.0	21.7	399.0	1264.0	1734.7	17.5	NA
	4/4/2007	62.6	12.00	508.0	1655.00	2237.60	23.3	<0.009
	10/25/2007	36.0	19.00	480.0	1400.00	1935.00	<25	NA
	4/1/2008	48.0	18.00	530.0	1500.00	2096.00	<25	NA
	6/27/2008	49.0	17.00	680.0	2500.00	3246.00	<25	NA
	10/1/2008	44.0	15.00	590.0	1500.00	2149.00	<25	NA
	NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0
Monitoring Well Identification	Method 8021						Method 6010	
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-8	7/8/2005	49.0	42.0	600.0	1600.0	2291.0	<10	NA
	7/10/2006	75.8	3.7	425.0	503.0	1007.5	44.3	NA
	4/4/2007	49.7	7.96	570.0	1126.90	1754.56	80.9	<0.018
	10/25/2007				NOT SAMPLED			
	4/1/2008				NOT SAMPLED			
	6/27/2008				NOT SAMPLED			
	10/1/2008				NOT SAMPLED			
	NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0

**Table 2**  
**Summary of Groundwater Sample Analytical Results**  
**US EPA Method 8021**  
**Conoco Mini Mart**  
**Chama, New Mexico**

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	
<b>MW-9</b>	4/4/2007	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<0.009
	10/25/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<2.5	NA
	4/1/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<2.5	NA
	6/27/2008	8.2	3.9	50.0	<2.0	62.10	<2.5	NA
	10/1/2008	11.0	7.5	58.0	61.0	137.50	<2.5	NA
	NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0
<b>MW-10</b>	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Method 6010
	4/4/2007	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<0.009
	10/25/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<2.5	NA
	4/1/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<2.5	NA
	6/27/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<2.5	NA
	10/1/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<2.5	NA
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05
<b>MW-11</b>	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Method 6010
	4/4/2007	31.1	16.1	138.0	70.98	256.2	<5.0	<0.009
	10/25/2007	21.0	5.4	280.0	13.00	319.4	17.0	NA
	4/1/2008	11.0	<1.0	24.0	9.10	44.1	<2.5	NA
	6/27/2008	18.0	<1.0	130.0	8.80	156.8	<2.5	NA
	10/1/2008	9.2	<1.0	47.0	5.20	61.4	<2.5	NA
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05
<b>MW-12</b>	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Method 6010
	4/4/2007	10.9	<2.5	43.5	129.00	183.4	<5.0	<0.009
	10/25/2007	1.9	<1.0	35.0	76.00	112.9	2.7	NA
	4/1/2008	3.2	11.0	150.0	750.00	914.2	2.5	NA
	6/27/2008	<1.0	1.2	78.0	420.00	499.2	2.5	NA
	10/1/2008	<1.0	<1.0	12.0	32.00	44.0	<2.5	NA
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05
<b>MW-13</b>	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Method 6010
	4/4/2007	19.7	8.36	193.0	380.60	601.7	19.7	<0.009
	10/25/2007	1.7	<1.0	36.0	13.00	50.7	<2.5	NA
	4/1/2008	1.6	<1.0	32.0	89.00	122.6	<2.5	NA
	6/27/2008	1.5	<1.0	47.0	16.00	64.5	<2.5	NA
	10/1/2008	1.2	<1.0	21.0	<2.0	22.2	<2.5	NA
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Notes:

Data in italics adopted from INTERA report dated 9/7/2005 (analyzed per Method 8260)

Method 8021 results in ug/L; Method 6010 results in mg/L

MTBE = Methyl Tertiary Butyl Ether

Red indicates concentration exceeds standard

NA = Not Analyzed





## **Appendix 1**

### **Sampling Protocol**

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Ground water samples were collected as established in the New Mexico Underground Storage Tank Bureau Guidelines for Corrective Action promulgated March 2000.

Water levels were measured prior to sample collection using a cleaned water level probe beginning with least contaminated, or clean monitoring wells to the most contaminated monitoring wells. Water levels of each monitoring well were recorded in field form. The water level probe was rinsed three times with distilled water prior to measuring water level in each monitoring well.

Monitoring wells were purged of three well bore volumes or until the well went dry prior to sampling. Samples collected for Method 8260 were collected in 40 ml vials, preserved with mercuric chloride, labeled with the date, time, monitoring well number, and the name of the sampler, and stored on ice. Samples collected for Method 8310 were collected in 1 L amber bottles, labeled with the date, time, monitoring well number and the name of the sampler, and stored on ice. Samples collected for Method 6010 were collected in 125 mL polypropylene bottles, labeled with the date, time, monitoring well number and the name of the sampler, and stored on ice.

Sample numbers were recorded on chain of custody forms and field notebook prior to delivery to the analyzing laboratory.

**Appendix 2**

**Field Notes, Copies**

### WELL PURGE RECORD

JOB NAME: Conoco Mini Mart	DATE: 10-01-08	TIME: 0944
CHAMA, NM		
JOB #: 3116075	SMA [REDACTED]	Representative: L. LAMONE

MONITORING WELL: 6

SAMPLING METHOD: USEPA SW846

FIELD CONDITIONS: Clear / warm

**DECONTAMINATION METHOD:** SINGLE USE BAILER, FIELD EQUIPMENT: ALCANOX  
WASH, TRIPLE DI WATER RINSE

Total Depth of well: 11.42 feet

Depth to water before purging 5.65 feet

Height of Water Column in Feet	Well PVC Diameter		1 Volume in Gallons	Minimum Purge Volumes	Volume to Purge in Gallons
	2-inch	4-inch		3	
5.77	0.163	0.653		3	30

### WELL PURGE RECORD

JOB NAME: Conoco Mini Mart	DATE: 10-01-08	TIME: 1158
CHAMA, NM		
JOB #: 3116075	SMA Representative:	L. LAMONE

MONITORING WELL: 7

SAMPLING METHOD: USEPA SW846

FIELD CONDITIONS: Clean / warm

**DECONTAMINATION METHOD:** SINGLE USE BAILER, FIELD EQUIPMENT: ALCANOX  
WASH, TRIPLE DI WATER RINSE

Total Depth of well: 12.14 feet

Depth to water before purging 7.83 feet

Height of Water Column in Feet	Well PVC Diameter		1 Volume in Gallons	Minimum Purge Volumes	Volume to Purge in Gallons
	2-inch	4-inch		3	
4.31	0.463	0.653			2.5

## WELL PURGE RECORD

JOB NAME: Conoco Mini Mart	DATE: 10-01-08	TIME: 0830
CHAMA, NM		
JOB #: 3116075	SMA _____ Representative:	L. LAMONE

MONITORING WELL: 9

SAMPLING METHOD: USEPA SW846

FIELD CONDITIONS: Clear / Cool

**DECONTAMINATION METHOD:** SINGLE USE BAILER, FIELD EQUIPMENT: ALCANOX  
**WASH, TRIPLE DI WATER RINSE.**

Total Depth of well: 12.96 feet

Depth to water before purging 7.72 feet

Height of Water Column in Feet	Well PVC Diameter		1 Volume in Gallons	Minimum Purge Volumes	Volume to Purge in Gallons
5.24	2-inch	4-inch		3	3.0
	0.163	0.653			

## WELL PURGE RECORD

JOB NAME: Conoco Mini Mart	DATE: 10-01-08	TIME: 0914
CHANIA, ALA		
JOB #: 3116075	SMA Representative:	L. LAMONE

MONITORING WELL: 10

SAMPLING METHOD: USEPA SW846

FIELD CONDITIONS: Clear / cool

**DECONTAMINATION METHOD:** SINGLE USE BAILER, FIELD EQUIPMENT: ALCANOX  
**WASH, TRIPLE DI WATER RINSE**

Total Depth of well: 13.40 feet

Depth to water before purging 7.06 feet

Height of Water Column in Feet	Well PVC Diameter		1 Volume in Gallons	Minimum Purge Volumes	Volume to Purge in Gallons
6.34	2-inch	4-inch		3	320
	0.163	0.653			

### WELL PURGE RECORD

JOB NAME: Conoco Mini Mart	DATE: 10-01-08	TIME: 1129
CHAMA, NM		
JOB #: 3116075	SMA [REDACTED]	Representative: L. Lamone

MONITORING WELL: 11

SAMPLING METHOD: USEPA SW846

FIELD CONDITIONS: Clear / warm

**DECONTAMINATION METHOD:** SINGLE USE BAILER, FIELD EQUIPMENT: ALCANOX  
WASH, TRIPLE DI WATER RINSE

Total Depth of well: 11.30 feet

Depth to water before purging 7.31 feet

Height of Water Column in Feet	Well PVC Diameter	1 Volume in Gallons	Minimum Purge Volumes	Volume to Purge in Gallons
3.99	2-inch 0.163	4-inch 0.653		3 30

### WELL PURGE RECORD

JOB NAME: Conoco Mini Mart	DATE: 10-01-08	TIME: 1051
CHAMA, NM		
JOB #: 3116075	SMA <del>Representative:</del>	L. LAMONE

MONITORING WELL: 12

SAMPLING METHOD: USEPA SW846

FIELD CONDITIONS: clear / warm

**DECONTAMINATION METHOD:** SINGLE USE BAILER, FIELD EQUIPMENT: ALCANOX  
WASH, TRIPLE DI WATER RINSE.

Total Depth of well: 12.95 feet

Depth to water before purging 7.81 feet

Height of Water Column in Feet	Well PVC Diameter		1 Volume in Gallons	Minimum Purge Volumes	Volume to Purge in Gallons
5.14	2-inch	4-inch		3	3.0
	0.163	0.653			

### WELL PURGE RECORD

JOB NAME: Conoco Mini Mart	DATE: 10-01-08	TIME: 1015
CHAMA, NM		
JOB #: 3116075	SMA Representative:	L. LAMONE

MONITORING WELL: 13

SAMPLING METHOD: USEPA SW846

FIELD CONDITIONS: clear / warm

**DECONTAMINATION METHOD:** SINGLE USE BAILER, FIELD EQUIPMENT; ALCANOX  
**WASH, TRIPLE DI WATER RINSE**

Total Depth of well: 13.69 feet

Depth to water before purging 7.69 feet

Height of Water Column in Feet	Well PVC Diameter		1 Volume in Gallons	Minimum Purge Volumes	Volume to Purge in Gallons
	2-inch	4-inch		3	3
6	2-inch	4-inch			
	0.163	0.653			

### **Appendix 3**

#### **Laboratory Results**



## COVER LETTER

Thursday, October 16, 2008

Tami Ross  
Souder, Miller and Associates  
612 E Murray Dr.  
Farmington, NM 87401  
TEL: (505) 325-5667  
FAX (505) 327-1496

RE: Conoco Mini Mart

Order No.: 0810047

Dear Tami Ross:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 10/2/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



# Hall Environmental Analysis Laboratory, Inc.

Date: 16-Oct-08

**CLIENT:** Souder, Miller and Associates  
**Lab Order:** 0810047  
**Project:** Conoco Mini Mart  
**Lab ID:** 0810047-01

**Client Sample ID:** MW-9  
**Collection Date:** 10/1/2008 9:00:00 AM  
**Date Received:** 10/2/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8021B: VOLATILES</b>						
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/14/2008 11:08:29 PM
Benzene	11	1.0		µg/L	1	10/14/2008 11:08:29 PM
Toluene	7.5	1.0		µg/L	1	10/14/2008 11:08:29 PM
Ethylbenzene	58	1.0		µg/L	1	10/14/2008 11:08:29 PM
Xylenes, Total	61	2.0		µg/L	1	10/14/2008 11:08:29 PM
Surr: 4-Bromofluorobenzene	127	65.9-130		%REC	1	10/14/2008 11:08:29 PM
<b>EPA METHOD 8310: PAHS</b>						
Naphthalene	ND	10		µg/L	1	10/10/2008 5:19:34 AM
1-Methylnaphthalene	ND	10		µg/L	1	10/10/2008 5:19:34 AM
2-Methylnaphthalene	ND	10		µg/L	1	10/10/2008 5:19:34 AM
Acenaphthylene	ND	13		µg/L	1	10/10/2008 5:19:34 AM
Acenaphthene	ND	25		µg/L	1	10/10/2008 5:19:34 AM
Fluorene	ND	4.0		µg/L	1	10/10/2008 5:19:34 AM
Phenanthrene	ND	3.0		µg/L	1	10/10/2008 5:19:34 AM
Anthracene	ND	3.0		µg/L	1	10/10/2008 5:19:34 AM
Fluoranthene	ND	1.5		µg/L	1	10/10/2008 5:19:34 AM
Pyrene	ND	1.5		µg/L	1	10/10/2008 5:19:34 AM
Benz(a)anthracene	ND	0.35		µg/L	1	10/10/2008 5:19:34 AM
Chrysene	ND	1.0		µg/L	1	10/10/2008 5:19:34 AM
Benzo(b)fluoranthene	ND	0.50		µg/L	1	10/10/2008 5:19:34 AM
Benzo(k)fluoranthene	ND	0.35		µg/L	1	10/10/2008 5:19:34 AM
Benzo(a)pyrene	ND	0.35		µg/L	1	10/10/2008 5:19:34 AM
Dibenz(a,h)anthracene	ND	0.35		µg/L	1	10/10/2008 5:19:34 AM
Benzo(g,h,i)perylene	ND	0.40		µg/L	1	10/10/2008 5:19:34 AM
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	1	10/10/2008 5:19:34 AM
Surr: Benzo(e)pyrene	66.5	44.8-104		%REC	1	10/10/2008 5:19:34 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 16-Oct-08

**CLIENT:** Souder, Miller and Associates  
**Lab Order:** 0810047  
**Project:** Conoco Mini Mart  
**Lab ID:** 0810047-02

**Client Sample ID:** MW-10

**Collection Date:** 10/1/2008 9:30:00 AM

**Date Received:** 10/2/2008

**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Analyst
<b>EPA METHOD 8021B: VOLATILES</b>							
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/14/2008 5:34:06 PM	
Benzene	ND	1.0		µg/L	1	10/14/2008 5:34:06 PM	
Toluene	ND	1.0		µg/L	1	10/14/2008 5:34:06 PM	
Ethylbenzene	ND	1.0		µg/L	1	10/14/2008 5:34:06 PM	
Xylenes, Total	ND	2.0		µg/L	1	10/14/2008 5:34:06 PM	
Surr: 4-Bromofluorobenzene	96.6	65.9-130		%REC	1	10/14/2008 5:34:06 PM	
<b>EPA METHOD 8310: PAHS</b>							
Naphthalene	ND	2.2		µg/L	1	10/10/2008 5:50:45 AM	DMF
1-Methylnaphthalene	ND	2.2		µg/L	1	10/10/2008 5:50:45 AM	
2-Methylnaphthalene	ND	2.2		µg/L	1	10/10/2008 5:50:45 AM	
Acenaphthylene	ND	2.8		µg/L	1	10/10/2008 5:50:45 AM	
Acenaphthene	ND	5.6		µg/L	1	10/10/2008 5:50:45 AM	
Fluorene	ND	0.89		µg/L	1	10/10/2008 5:50:45 AM	
Phenanthrene	ND	0.67		µg/L	1	10/10/2008 5:50:45 AM	
Anthracene	ND	0.67		µg/L	1	10/10/2008 5:50:45 AM	
Fluoranthene	ND	0.33		µg/L	1	10/10/2008 5:50:45 AM	
Pyrene	ND	0.33		µg/L	1	10/10/2008 5:50:45 AM	
Benz(a)anthracene	ND	0.078		µg/L	1	10/10/2008 5:50:45 AM	
Chrysene	ND	0.22		µg/L	1	10/10/2008 5:50:45 AM	
Benzo(b)fluoranthene	ND	0.11		µg/L	1	10/10/2008 5:50:45 AM	
Benzo(k)fluoranthene	ND	0.078		µg/L	1	10/10/2008 5:50:45 AM	
Benzo(a)pyrene	ND	0.078		µg/L	1	10/10/2008 5:50:45 AM	
Dibenz(a,h)anthracene	ND	0.078		µg/L	1	10/10/2008 5:50:45 AM	
Benzo(g,h,i)perylene	ND	0.089		µg/L	1	10/10/2008 5:50:45 AM	
Indeno(1,2,3-cd)pyrene	ND	0.089		µg/L	1	10/10/2008 5:50:45 AM	
Surr: Benzo(e)pyrene	64.6	44.8-104		%REC	1	10/10/2008 5:50:45 AM	

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 16-Oct-08

**CLIENT:** Souder, Miller and Associates  
**Lab Order:** 0810047  
**Project:** Conoco Mini Mart  
**Lab ID:** 0810047-03

**Client Sample ID:** MW-6  
**Collection Date:** 10/1/2008 10:00:00 AM  
**Date Received:** 10/2/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8021B: VOLATILES</b>						
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/14/2008 11:38:53 PM
Benzene	ND	1.0		µg/L	1	10/14/2008 11:38:53 PM
Toluene	ND	1.0		µg/L	1	10/14/2008 11:38:53 PM
Ethylbenzene	ND	1.0		µg/L	1	10/14/2008 11:38:53 PM
Xylenes, Total	ND	2.0		µg/L	1	10/14/2008 11:38:53 PM
Surr: 4-Bromofluorobenzene	106	65.9-130		%REC	1	10/14/2008 11:38:53 PM
<b>EPA METHOD 8310: PAHS</b>						
Naphthalene	ND	2.2		µg/L	1	10/10/2008 6:22:00 AM
1-Methylnaphthalene	ND	2.2		µg/L	1	10/10/2008 6:22:00 AM
2-Methylnaphthalene	ND	2.2		µg/L	1	10/10/2008 6:22:00 AM
Acenaphthylene	ND	2.8		µg/L	1	10/10/2008 6:22:00 AM
Acenaphthene	ND	5.6		µg/L	1	10/10/2008 6:22:00 AM
Fluorene	ND	0.89		µg/L	1	10/10/2008 6:22:00 AM
Phenanthrene	ND	0.67		µg/L	1	10/10/2008 6:22:00 AM
Anthracene	ND	0.67		µg/L	1	10/10/2008 6:22:00 AM
Fluoranthene	ND	0.33		µg/L	1	10/10/2008 6:22:00 AM
Pyrene	ND	0.33		µg/L	1	10/10/2008 6:22:00 AM
Benz(a)anthracene	ND	0.078		µg/L	1	10/10/2008 6:22:00 AM
Chrysene	ND	0.22		µg/L	1	10/10/2008 6:22:00 AM
Benzo(b)fluoranthene	ND	0.11		µg/L	1	10/10/2008 6:22:00 AM
Benzo(k)fluoranthene	ND	0.078		µg/L	1	10/10/2008 6:22:00 AM
Benzo(a)pyrene	ND	0.078		µg/L	1	10/10/2008 6:22:00 AM
Dibenz(a,h)anthracene	ND	0.078		µg/L	1	10/10/2008 6:22:00 AM
Benzo(g,h,i)perylene	ND	0.089		µg/L	1	10/10/2008 6:22:00 AM
Indeno(1,2,3-cd)pyrene	ND	0.089		µg/L	1	10/10/2008 6:22:00 AM
Surr: Benzo(e)pyrene	61.4	44.8-104		%REC	1	10/10/2008 6:22:00 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 16-Oct-08

**CLIENT:** Souder, Miller and Associates  
**Lab Order:** 0810047  
**Project:** Conoco Mini Mart  
**Lab ID:** 0810047-04

**Client Sample ID:** MW-13  
**Collection Date:** 10/1/2008 10:34:00 AM  
**Date Received:** 10/2/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8021B: VOLATILES</b>						
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/15/2008 12:09:18 AM
Benzene	1.2	1.0		µg/L	1	10/15/2008 12:09:18 AM
Toluene	ND	1.0		µg/L	1	10/15/2008 12:09:18 AM
Ethylbenzene	21	1.0		µg/L	1	10/15/2008 12:09:18 AM
Xylenes, Total	ND	2.0		µg/L	1	10/15/2008 12:09:18 AM
Surr: 4-Bromofluorobenzene	119	65.9-130		%REC	1	10/15/2008 12:09:18 AM
<b>EPA METHOD 8310: PAHS</b>						
Naphthalene	ND	2.2		µg/L	1	10/10/2008 6:53:16 AM
1-Methylnaphthalene	ND	2.2		µg/L	1	10/10/2008 6:53:16 AM
2-Methylnaphthalene	ND	2.2		µg/L	1	10/10/2008 6:53:16 AM
Acenaphthylene	ND	2.8		µg/L	1	10/10/2008 6:53:16 AM
Acenaphthene	ND	5.6		µg/L	1	10/10/2008 6:53:16 AM
Fluorene	ND	0.89		µg/L	1	10/10/2008 6:53:16 AM
Phenanthrene	ND	0.67		µg/L	1	10/10/2008 6:53:16 AM
Anthracene	ND	0.67		µg/L	1	10/10/2008 6:53:16 AM
Fluoranthene	ND	0.33		µg/L	1	10/10/2008 6:53:16 AM
Pyrene	ND	0.33		µg/L	1	10/10/2008 6:53:16 AM
Benz(a)anthracene	ND	0.078		µg/L	1	10/10/2008 6:53:16 AM
Chrysene	ND	0.22		µg/L	1	10/10/2008 6:53:16 AM
Benzo(b)fluoranthene	ND	0.11		µg/L	1	10/10/2008 6:53:16 AM
Benzo(k)fluoranthene	ND	0.078		µg/L	1	10/10/2008 6:53:16 AM
Benzo(a)pyrene	ND	0.078		µg/L	1	10/10/2008 6:53:16 AM
Dibenz(a,h)anthracene	ND	0.078		µg/L	1	10/10/2008 6:53:16 AM
Benzo(g,h,i)perylene	ND	0.089		µg/L	1	10/10/2008 6:53:16 AM
Indeno(1,2,3-cd)pyrene	ND	0.089		µg/L	1	10/10/2008 6:53:16 AM
Surr: Benzo(e)pyrene	73.8	44.8-104		%REC	1	10/10/2008 6:53:16 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 16-Oct-08

**CLIENT:** Souder, Miller and Associates  
**Lab Order:** 0810047  
**Project:** Conoco Mini Mart  
**Lab ID:** 0810047-05

**Client Sample ID:** MW-12  
**Collection Date:** 10/1/2008 11:11:00 AM  
**Date Received:** 10/2/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8021B: VOLATILES</b>						
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/15/2008 1:31:32 PM
Benzene	ND	1.0		µg/L	1	10/15/2008 1:31:32 PM
Toluene	ND	1.0		µg/L	1	10/15/2008 1:31:32 PM
Ethylbenzene	12	1.0		µg/L	1	10/15/2008 1:31:32 PM
Xylenes, Total	32	2.0		µg/L	1	10/15/2008 1:31:32 PM
Surr: 4-Bromofluorobenzene	117	65.9-130		%REC	1	10/15/2008 1:31:32 PM
<b>EPA METHOD 8310: PAHS</b>						
Naphthalene	ND	10		µg/L	1	10/10/2008 7:24:33 AM
1-Methylnaphthalene	ND	10		µg/L	1	10/10/2008 7:24:33 AM
2-Methylnaphthalene	ND	10		µg/L	1	10/10/2008 7:24:33 AM
Acenaphthylene	ND	13		µg/L	1	10/10/2008 7:24:33 AM
Acenaphthene	ND	25		µg/L	1	10/10/2008 7:24:33 AM
Fluorene	ND	4.0		µg/L	1	10/10/2008 7:24:33 AM
Phenanthrene	ND	3.0		µg/L	1	10/10/2008 7:24:33 AM
Anthracene	ND	3.0		µg/L	1	10/10/2008 7:24:33 AM
Fluoranthene	ND	1.5		µg/L	1	10/10/2008 7:24:33 AM
Pyrene	ND	1.5		µg/L	1	10/10/2008 7:24:33 AM
Benz(a)anthracene	ND	0.35		µg/L	1	10/10/2008 7:24:33 AM
Chrysene	ND	1.0		µg/L	1	10/10/2008 7:24:33 AM
Benzo(b)fluoranthene	ND	0.50		µg/L	1	10/10/2008 7:24:33 AM
Benzo(k)fluoranthene	ND	0.35		µg/L	1	10/10/2008 7:24:33 AM
Benzo(a)pyrene	ND	0.35		µg/L	1	10/10/2008 7:24:33 AM
Dibenz(a,h)anthracene	ND	0.35		µg/L	1	10/10/2008 7:24:33 AM
Benzo(g,h,i)perylene	ND	0.40		µg/L	1	10/10/2008 7:24:33 AM
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	1	10/10/2008 7:24:33 AM
Surr: Benzo(e)pyrene	56.4	44.8-104		%REC	1	10/10/2008 7:24:33 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 16-Oct-08

**CLIENT:** Souder, Miller and Associates  
**Lab Order:** 0810047  
**Project:** Conoco Mini Mart  
**Lab ID:** 0810047-06

**Client Sample ID:** MW-11  
**Collection Date:** 10/1/2008 11:45:00 AM  
**Date Received:** 10/2/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8021B: VOLATILES</b>						
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/15/2008 2:01:50 PM
Benzene	9.2	1.0		µg/L	1	10/15/2008 2:01:50 PM
Toluene	ND	1.0		µg/L	1	10/15/2008 2:01:50 PM
Ethylbenzene	47	1.0		µg/L	1	10/15/2008 2:01:50 PM
Xylenes, Total	5.2	2.0		µg/L	1	10/15/2008 2:01:50 PM
Surr: 4-Bromofluorobenzene	149	65.9-130	S	%REC	1	10/15/2008 2:01:50 PM
<b>EPA METHOD 8310: PAHS</b>						
Naphthalene	ND	2.2		µg/L	1	10/10/2008 7:55:51 AM
1-Methylnaphthalene	ND	2.2		µg/L	1	10/10/2008 7:55:51 AM
2-Methylnaphthalene	ND	2.2		µg/L	1	10/10/2008 7:55:51 AM
Acenaphthylene	ND	2.8		µg/L	1	10/10/2008 7:55:51 AM
Acenaphthene	ND	5.6		µg/L	1	10/10/2008 7:55:51 AM
Fluorene	ND	0.89		µg/L	1	10/10/2008 7:55:51 AM
Phenanthrene	ND	0.67		µg/L	1	10/10/2008 7:55:51 AM
Anthracene	ND	0.67		µg/L	1	10/10/2008 7:55:51 AM
Fluoranthene	ND	0.33		µg/L	1	10/10/2008 7:55:51 AM
Pyrene	ND	0.33		µg/L	1	10/10/2008 7:55:51 AM
Benz(a)anthracene	ND	0.078		µg/L	1	10/10/2008 7:55:51 AM
Chrysene	ND	0.22		µg/L	1	10/10/2008 7:55:51 AM
Benzo(b)fluoranthene	ND	0.11		µg/L	1	10/10/2008 7:55:51 AM
Benzo(k)fluoranthene	ND	0.078		µg/L	1	10/10/2008 7:55:51 AM
Benzo(a)pyrene	ND	0.078		µg/L	1	10/10/2008 7:55:51 AM
Dibenz(a,h)anthracene	ND	0.078		µg/L	1	10/10/2008 7:55:51 AM
Benzo(g,h,i)perylene	ND	0.089		µg/L	1	10/10/2008 7:55:51 AM
Indeno(1,2,3-cd)pyrene	ND	0.089		µg/L	1	10/10/2008 7:55:51 AM
Surr: Benzo(e)pyrene	52.0	44.8-104		%REC	1	10/10/2008 7:55:51 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 16-Oct-08

**CLIENT:** Souder, Miller and Associates  
**Lab Order:** 0810047  
**Project:** Conoco Mini Mart  
**Lab ID:** 0810047-07

**Client Sample ID:** MW-7  
**Collection Date:** 10/1/2008 12:15:00 PM  
**Date Received:** 10/2/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8021B: VOLATILES</b>						
Methyl tert-butyl ether (MTBE)	ND	25		µg/L	10	10/15/2008 1:48:34 AM
Benzene	44	10		µg/L	10	10/15/2008 1:48:34 AM
Toluene	15	10		µg/L	10	10/15/2008 1:48:34 AM
Ethylbenzene	590	10		µg/L	10	10/15/2008 1:48:34 AM
Xylenes, Total	1500	20		µg/L	10	10/15/2008 1:48:34 AM
Surr: 4-Bromofluorobenzene	115	65.9-130		%REC	10	10/15/2008 1:48:34 AM
<b>EPA METHOD 8310: PAHS</b>						
Naphthalene	180	10		µg/L	1	10/10/2008 8:27:07 AM
1-Methylnaphthalene	48	10		µg/L	1	10/10/2008 8:27:07 AM
2-Methylnaphthalene	120	10		µg/L	1	10/10/2008 8:27:07 AM
Acenaphthylene	ND	13		µg/L	1	10/10/2008 8:27:07 AM
Acenaphthene	ND	25		µg/L	1	10/10/2008 8:27:07 AM
Fluorene	ND	4.0		µg/L	1	10/10/2008 8:27:07 AM
Phenanthrene	ND	3.0		µg/L	1	10/10/2008 8:27:07 AM
Anthracene	ND	3.0		µg/L	1	10/10/2008 8:27:07 AM
Fluoranthene	ND	1.5		µg/L	1	10/10/2008 8:27:07 AM
Pyrene	ND	1.5		µg/L	1	10/10/2008 8:27:07 AM
Benz(a)anthracene	ND	0.35		µg/L	1	10/10/2008 8:27:07 AM
Chrysene	ND	1.0		µg/L	1	10/10/2008 8:27:07 AM
Benzo(b)fluoranthene	ND	0.50		µg/L	1	10/10/2008 8:27:07 AM
Benzo(k)fluoranthene	ND	0.35		µg/L	1	10/10/2008 8:27:07 AM
Benzo(a)pyrene	ND	0.35		µg/L	1	10/10/2008 8:27:07 AM
Dibenz(a,h)anthracene	ND	0.35		µg/L	1	10/10/2008 8:27:07 AM
Benzo(g,h,i)perylene	ND	0.40		µg/L	1	10/10/2008 8:27:07 AM
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	1	10/10/2008 8:27:07 AM
Surr: Benzo(e)pyrene	74.2	44.8-104		%REC	1	10/10/2008 8:27:07 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

**QA/QC SUMMARY REPORT**

**Client:** Souder, Miller and Associates  
**Project:** Conoco Mini Mart

**Work Order:** 0810047

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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**Method: EPA Method 8021B: Volatiles**

Sample ID: 0810047-02A MSD	MSD				Batch ID: R30695	Analysis Date: 10/14/2008 7:35:54 PM			
Methyl tert-butyl ether (MTBE)	28.99	µg/L	2.5	145	51.2	138	3.86	28	S
Benzene	19.81	µg/L	1.0	99.1	85.9	113	0.312	27	
Toluene	20.14	µg/L	1.0	101	86.4	113	1.94	19	
Ethylbenzene	20.12	µg/L	1.0	101	83.5	118	0.397	10	
Xylenes, Total	60.86	µg/L	2.0	101	83.4	122	0.0296	13	
Sample ID: B	MBLK				Batch ID: R30695	Analysis Date: 10/14/2008 8:56:44 AM			
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS	LCS				Batch ID: R30695	Analysis Date: 10/14/2008 8:36:52 PM			
Methyl tert-butyl ether (MTBE)	29.03	µg/L	2.5	145	51.2	138			S
Benzene	19.75	µg/L	1.0	98.8	85.9	113			
Toluene	20.32	µg/L	1.0	102	86.4	113			
Ethylbenzene	20.01	µg/L	1.0	100	83.5	118			
Xylenes, Total	60.85	µg/L	2.0	101	83.4	122			
Sample ID: 0810047-02A MS	MS				Batch ID: R30695	Analysis Date: 10/14/2008 7:05:27 PM			
Methyl tert-butyl ether (MTBE)	27.90	µg/L	2.5	139	51.2	138			S
Benzene	19.87	µg/L	1.0	99.4	85.9	113			
Toluene	20.53	µg/L	1.0	103	86.4	113			
Ethylbenzene	20.20	µg/L	1.0	101	83.5	118			
Xylenes, Total	60.88	µg/L	2.0	101	83.4	122			

**Qualifiers:**

- E Value above quantitation range  
J Analyte detected below quantitation limits  
R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

**Client:** Souder, Miller and Associates  
**Project:** Conoco Mini Mart

**Work Order:** 0810047

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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**Method:** EPA Method 8310: PAHs**Sample ID:** MB-17315      **MBLK**      **Batch ID:** 17315      **Analysis Date:** 10/10/2008 3:14:35 AM

Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	2.0						
2-Methylnaphthalene	ND	µg/L	2.0						
Acenaphthylene	ND	µg/L	2.5						
Acenaphthene	ND	µg/L	5.0						
Fluorene	ND	µg/L	0.80						
Phenanthrene	ND	µg/L	0.60						
Anthracene	ND	µg/L	0.60						
Fluoranthene	ND	µg/L	0.30						
Pyrene	ND	µg/L	0.30						
Benz(a)anthracene	ND	µg/L	0.070						
Chrysene	ND	µg/L	0.20						
Benzo(b)fluoranthene	ND	µg/L	0.10						
Benzo(k)fluoranthene	ND	µg/L	0.070						
Benzo(a)pyrene	ND	µg/L	0.070						
Dibenz(a,h)anthracene	ND	µg/L	0.070						
Benzo(g,h,i)perylene	ND	µg/L	0.080						
Indeno(1,2,3-cd)pyrene	ND	µg/L	0.080						

**Sample ID:** LCS-17315      **LCS**      **Batch ID:** 17315      **Analysis Date:** 10/10/2008 3:45:48 AM

Naphthalene	60.02	µg/L	2.0	75.0	31.5	90.7			
1-Methylnaphthalene	59.73	µg/L	2.0	74.5	32.5	93.3			
2-Methylnaphthalene	61.28	µg/L	2.0	76.6	32.8	89.6			
Acenaphthylene	59.39	µg/L	2.5	74.1	37.8	92.4			
Acenaphthene	62.10	µg/L	5.0	77.6	38.6	93.9			
Fluorene	5.780	µg/L	0.80	72.1	38	95.5			
Phenanthrene	2.780	µg/L	0.60	69.2	32.9	107			
Anthracene	2.870	µg/L	0.60	71.4	35.2	98.3			
Fluoranthene	5.870	µg/L	0.30	73.2	36.4	104			
Pyrene	5.200	µg/L	0.30	64.8	37.1	102			
Benz(a)anthracene	0.6100	µg/L	0.070	76.1	33.7	101			
Chrysene	2.980	µg/L	0.20	74.1	35.2	96.1			
Benzo(b)fluoranthene	0.8100	µg/L	0.10	80.8	33.6	94.2			
Benzo(k)fluoranthene	0.3800	µg/L	0.070	76.0	25.4	110			
Benzo(a)pyrene	0.3800	µg/L	0.070	75.7	26.9	102			
Dibenz(a,h)anthracene	0.6900	µg/L	0.070	68.9	40.7	92.1			
Benzo(g,h,i)perylene	0.7300	µg/L	0.080	73.0	24.3	109			
Indeno(1,2,3-cd)pyrene	1.370	µg/L	0.080	68.4	42.6	99.9			

**Sample ID:** LCSD-17315      **LCSD**      **Batch ID:** 17315      **Analysis Date:** 10/10/2008 4:48:18 AM

Naphthalene	38.36	µg/L	2.0	48.0	31.5	90.7	44.0	32.1	R
1-Methylnaphthalene	40.52	µg/L	2.0	50.5	32.5	93.3	38.3	32.7	R
2-Methylnaphthalene	40.59	µg/L	2.0	50.7	32.8	89.6	40.6	34	R
Acenaphthylene	39.92	µg/L	2.5	49.8	37.8	92.4	39.2	38.8	R
Acenaphthene	42.64	µg/L	5.0	53.3	38.6	93.9	37.2	38.6	
Fluorene	4.420	µg/L	0.80	55.1	38	95.5	26.7	29.3	

**Qualifiers:**

E Value above quantitation range  
J Analyte detected below quantitation limits  
R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

# QA/QC SUMMARY REPORT

Client: Souder, Miller and Associates

Project: Conoco Mini Mart

Work Order: 0810047

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8310: PAHs

Sample ID:	LCSD	Batch ID:	Analysis Date:
Phenanthrene	2.000	µg/L	0.60
Anthracene	1.980	µg/L	0.60
Fluoranthene	3.950	µg/L	0.30
Pyrene	3.240	µg/L	0.30
Benz(a)anthracene	0.4200	µg/L	0.070
Chrysene	2.110	µg/L	0.20
Benzo(b)fluoranthene	0.6200	µg/L	0.10
Benzo(k)fluoranthene	0.2600	µg/L	0.070
Benzo(a)pyrene	0.2600	µg/L	0.070
Dibenz(a,h)anthracene	0.4800	µg/L	0.070
Benzo(g,h,i)perylene	0.5000	µg/L	0.080
Indeno(1,2,3-cd)pyrene	0.9800	µg/L	0.080

**Qualifiers:**

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SMA-FARM

Date Received:

10/2/08 AM  
10/3/2008

Work Order Number 0810047

Received by: ARS

Checklist completed by:

Signature

AJ

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name Greyhound

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Container/Temp Blank temperature?	6°	<6° C Acceptable	If given sufficient time to cool.

### COMMENTS:

Client contacted _____	Date contacted: _____	Person contacted: _____
Contacted by: _____	Regarding: _____	
Comments: _____		
Corrective Action: _____		

# Chain-of-Custody Record

Turn-Around Time:

Standard     Rush

Project Name:

*Comoco Mini Mart*

Project #:

*311075*

email or Fax#:

*Lori Ross*

QA/QC Package:  Standard     Level 4 (Full Validation)

Other \_\_\_\_\_

EDD (Type) \_\_\_\_\_

Address: *612 E. Murray*  
*Farmington, NM*  
Phone #: *(505) 2325-5662*

[www.hallenvironmental.com](http://www.hallenvironmental.com)

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975    Fax 505-345-4107

## Analysis Request

Air Bubbles (Y or N)

8270 (Semi-VOA)

8260B (VOA)

8081 Pesticides / 8082 PCB's

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8310 (PNA or PAH)

EDC (Method 8260)

EDB (Method 504.1)

TPH (Method 418.1)

TPH Method 8015B (Gas/Diesel)

BTEX + MTBE + TPH (Gas only)

BTEX + MTBE + TPH (8021)

Container  
Type and #

Preservative  
Type

HEAL No.

0810047

*Glass/4*

*HCl/Cool*

*1*

*2*

*1*

*3*

*1*

*4*

*1*

*5*

*1*

*6*

*1*

*7*

*1*

*8*

*1*

*9*

*1*

*10*

*1*

*11*

*1*

*12*

*1*

*13*

*1*

*14*

*1*

*15*

*1*

Remarks:

*[Signature]*

Received by:

*[Signature]*

Received by:

Date: *10/02/08* Time: *0815* Relinquished by: *[Signature]*

Date: *10/02/08* Time: *16:30* Relinquished by: *[Signature]*

Date: *10/02/08* Time: *16:30* Received by: *[Signature]*

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly noted on the analytical report.