AP - 057

2011 AGWMR

09 / 26 / 2012

CONESTOGA-ROVERS
& ASSOCIATES

2011 ANNUAL GROUNDWATER MONITORING REPORT

CHEVRON U.S.A., INC.
MARK OWEN #9 RESERVE PIT (AP #57)
NW/4 OF SE/4 (J) SECTION 34, T-21-S; R-37-E
LEA COUNTY, NEW MEXICO

Prepared For:

Mr. Kegan Boyer
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
UPSTREAM BUSINESS UNIT
1400 Smith Street, Room 07086
Houston, Texas 77002

Prepared by:
Conestoga-Rovers & Associates

2135 South Loop 250 West
Midland, Texas 79703
Office: (432) 686-0086
Fax: (432) 686-0186

web:
http:\\www.CRAworld.com

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1.0 INTRODUCTION

This Annual Groundwater Monitoring Report presents groundwater data collected during the 2011 reporting period at Mark Owen #9 Reserve Pit (hereafter referred to as the "Site"). On March 10, June 3, August 23, and December 16, 2011, Conestoga-Rovers & Associates (CRA) conducted the semi-annual groundwater monitoring events on behalf of Chevron Environmental Management Company (CEMC).

The legal description of the Site is the NW/4 of the SE/4 of Section 34, Township 21 South, Range 37 East, Lea County, New Mexico (FIGURE 1). The Site is situated immediately southeast of the town of Eunice, New Mexico and is associated with a release of fluids from the reserve pit utilized in the drilling of the Mark Owen #9 oil well by Chevron in 2006. Global Positioning System (GPS) coordinates for the site are Latitude 32° 25'56.49" North and Longitude 103° 08' 46.27" West. The O-GRID number assigned to the Site is reported as #4323. The Mark Owen #9 well site is currently operated by Chevron USA.

A Revised Stage 1 Abatement Plan for the Mark Owen #9 Reserve Pit was submitted on behalf of CEMC by CRA to the New Mexico Oil Conservation Division (NMOCD) in a correspondence dated March 13, 2007. The NMOCD assigned AP #57 to this Abatement Plan, however, the agency has not yet provided a written response to the March 2007 submittal that included data from soil and groundwater investigation and remedial activities performed at the site (by Environmental Plus, Inc.) at the site in 2006. Consequently, an investigation was performed at the site in October 2007 to collect current information associated with the indicated May 2006 release of drilling fluids from the reserve pit into the surrounding soils and groundwater. An Interim Investigation Report was submitted to the agency in March 2008 summarizing the results of the October 2007 investigation. Reports for 2008, 2009, and 2010 were submitted by CRA to CEMC who in turn submitted the reports to the NMOCD in Santa Fe, New Mexico. Currently the Site is monitored quarterly by CRA.

2.0 REGULATORY FRAMEWORK

The NMOCD guidelines require groundwater to be analyzed for constituents of concern (COC) as defined by the New Mexico Water Quality Control Commission (NMWQCC) regulations. The NMWQCC regulations provide Human Health Standards for Groundwater. The COC in affected groundwater at the Site is chloride. In this report, groundwater analytical results for chloride, TDS, BTEX, sulfates and total alkalinity are compared to the NMWQCC standards shown in the following table:

Analyte	NMWQCC Standard for Groundwater (mg/L)
Chloride[2]	250
Fluoride[1]	1.6
Nitrate (NO_3 as N)[1]	10
Sulfate (SO_4)[2]	600
Total Dissolved Solids (TDS)[2]	1,000
Benzene[1]	0.01
Toluene[1]	0.75
Ethylbenzene[1]	0.75
Total Xylenes[1]	0.62

Notes:

1) [1]NMWQCC Human Health Standards per NMAC 20.6.2.310B

2) [2]NMWQCC OTHER STANDARDS FOR DOMESTIC WATER SUPPLY PER NMAC20.6.2.3103B

3.0 GROUNDWATER INVESTIGATION ACTIVITIES

In September 2011, two groundwater monitoring wells, MW-8 and MW-9 and a recovery well, RW-1, were installed at the Site. The wells were installed to further delineate COCs associated with the reserve pit release. Groundwater gauging results are in TABLE I. Groundwater analytical results are in TABLES II and III. Soil sample results are located in TABLE IV. The respective well locations are presented in FIGURE 2.

3.1 FIELD METHODOLOGIES

Prior to mobilizing the drilling equipment to the Site, the boring location areas were marked and a utility notification made at least 48-hour prior to mobilization. Each location was cleared with a post hole digger prior to drilling operations.

An air-rotary rig, operated by a licensed State of New Mexico water well driller, White Drilling of Clyde, Texas, was utilized to advance the borings to depths of 50-feet bgs to assess the nature and extent of chloride, sulfate and total dissolved solids groundwater impact at the site as well as soils conditions in the vadose zone. Shovel samples were screened onsite using a Photoionization Detector (PID) and selected samples were analyzed for BTEX, TPH and Chlorides.

The three borings were converted into two four-inch groundwater monitoring wells (MW-8 and MW-9) and one six-inch groundwater recovery well (RW-1) at each location utilizing 30 feet of screen straddling the soil/ water interface. PVC casing was installed to extend three feet above the ground surface was used on all three wells. The two monitoring wells, MW-8 and MW-9, and one recovery well, RW-1, were terminated 50 feet below the ground surface. General well specifications for the monitor wells included: four-inch diameter PVC casing/screens with gravel-packed screened intervals, 0.020-inch slotted screen , bentonite seals above the gravel pack, and above ground surface completions with concrete pads. . General well specifications for the recovery well included: six-inch diameter PVC casing/screens with gravel-packed screened intervals, 0.020-inch slotted screen , bentonite seals above the gravel pack, and above ground surface completions with concrete pads. The wells were developed by pump and bailing. The purge water was containerized in drums and disposed of by Nabors Well Services LTD (Nabors).

3.2 GROUNDWATER ASSESSMENT RESULTS

Groundwater was encountered 32 feet below top of casing (TOC) in MW-8, 31 feet below TOC in MW-9, and 33 feet below TOC in RW-1 in a September 12, 2011 gauging event. The NMOSE Well Records and CRA Soil Boring Logs and Monitor Well Details are in APPENDIX B.

Historic depth to groundwater and related measurements and information pertaining to the monitoring wells are presented in TABLE I - Groundwater Gauging Summary. A Topographic Survey of Monitor Wells, utilized to calculate top of casing (TOC) elevations and depth to groundwater elevations, is presented in APPENDIX C. The three new wells are consistent in elevation and gradient with the historical data. The survey was performed

by West Company of Midland, Inc. in October 2011; MW-8, MW-9, and RW-1 were surveyed.

Groundwater samples were collected after developing of the monitor wells. Monitor wells MW-8 and MW-9 were sampled on September 12, 2011 and Recovery well RW-1 was sampled on September 13 ,2011. Samples from the three monitoring wells were delivered to Xenco Laboratories of Odessa, Texas using EPA-approved chain-of-custody procedures. The water samples were analyzed for chlorides, sulfates, and TDS by Environmental Protection Agency (EPA) Methods 300.0 and 2540C. The fluids recovered during the sampling event were containerized and disposed of by Nabors Well Services LTD (Nabors). Groundwater COCs detected above the secondary drinking water standards for MW-8, MW-9 and RW-1 are highlighted in TABLE II and are listed below:

- Chloride was detected at concentrations of 3,180 mg/L in MW-8, 913 mg/L on MW-9 and 9,820 mg/L in RW-1, above the New Mexico Water Quality Control Commission Groundwater Standard (250 mg/L) in September 12-132011;
- Sulfate was detected at concentrations of 765 mg/L in MW-8, above the New Mexico Water Quality Control Commission Groundwater Standard (600 mg/L) on September 12, 2011;
- TDS was detected at concentrations of 7,680 mg/L in MW-8, 2,580 mg/L on MW-9 and 18,600 mg/L in RW-1, above the, New Mexico Water Quality Control Commission Groundwater Standard (1000 mg/L) on September 12 and 13 2011;

The three new wells, MW-8, MW-9, and RW-1 were also sampled in December 2011 as part of the fourth quarter sampling event. Copies of the certified analytical reports and chain-of-custody documentation are attached in APPENDIX A.

4.0 GROUNDWATER MONITORING ACTIVITIES

The Site is monitored quarterly with a network of four monitor wells (MW-1, MW-2, MW-3, and MW-4) installed in October 2007. Three wells (MW-5, MW-6, and MW-7) were installed in September 2010 and three wells (MW-8, MW-9 and RW-1) were installed in September 2011 and subsequently added to the quarterly schedule. Each well has an above-ground surface completion with protective bollards.

Prior to purging the monitor wells, static fluid levels were measured with an electronic interface probe to the nearest hundredth of a foot. Conductivity profiles were also taken of each well using a Solinist conductivity meter. After recording fluid levels, samples were collected using a low flow method. Water quality parameters pH, temperature and conductivity were recorded during purging. All non-disposable groundwater sampling equipment was decontaminated with a soap (Liquinox®) and potable water wash, a potable water rinse and a final de-ionized water rinse. Subsequent to the purging process, groundwater samples were collected with the low flow pump. Laboratory-supplied sample containers were filled directly from the bailers.

The groundwater samples were placed on ice in insulated coolers and chilled to a temperature of approximately 4°C (40°F). The coolers were sealed for shipment and proper chain-of-custody documentation accompanied the samples to Xenco Laboratories of Odessa, Texas using EPA-approved chain-of-custody procedures. The water samples were analyzed for total petroleum hydrocarbons by (TPH) by EPA Method 8015 modified for diesel range organics (DRO) and gasoline range organics (GRO) benzene, toluene, ethyl benzene and xylenes (BTEX) by EPA Method 8021B, and groundwater quality (total alkalinity, chloride, sulfate and total dissolved solids (TDS) by EPA Methods 160.1, 300.0 and 310.1, respectively. The fluids generated during the sampling events were containerized onsite in labeled drums and subsequently managed at an NMOCD permitted salt water disposal (SWD) facility by Nabors Well Services LTD (Nabors).

4.1 POTENTIOMETRIC SURFACE AND GRADIENT

Groundwater elevation data are presented in TABLE I and are consistent with elevations from the 2010 data. Groundwater gradient maps for March, June, August and December 2011 are presented in FIGURES 3, 4, 5 and 6, respectively. Depth to groundwater ranged from 29.37-feet to 36.18-feet below top of casing on March 10, 2011, ranged from 29.69-feet to 36.36-feet below top of casing on June 3, 2011, ranged from 29.65-feet to 36.31-feet below top of casing on August 23, 2011 and from 27.88-feet to 36.34-feet below top of casing on December 16, 2011. Groundwater flow at the Site is to the southeast at a gradient of 0.004-ft/ft.

4.2 ANALYTICAL RESULTS

The 2011 analytical results are summarized in TABLE II and TABLE III. Nine monitor wells and one recovery well (MW-1 thru MW-9 and RW-1) were included in the sampling schedule. Eight monitor wells (MW-1, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, and MW-9) and one recovery well (RW-1) exceeded chloride and TDS NMWQCC standards. Three monitor wells (MW-1, MW-4 and MW-8) and one recovery

well (RW-1) exceeded sulfate NMWQCC standards. One monitor well, MW-9, exhibited Benzene above NMWQCC standards (0.0241 mg/L). The groundwater analytical summaries (including comparisons to applicable NMWQCC standards) are provided in TABLES II and III. Isopleth maps approximating chloride and TDS concentrations for the March, June, August and December 2011 events are shown on FIGURES 7 through 14.

Groundwater COCs detected above the NMWQCC "Other Standards for Domestic Water Supply" are highlighted in TABLE III and are listed below:

- Chloride was detected at concentrations above the NMWQCC "Other Standards for Domestic Water Supply" (250 mg/L) in MW-1, MW-3, MW-4, MW-5, MW-6 and MW-7 during the March and June 2011 events; and in MW-1, MW-4, MW-5, MW-6 and MW-7 during the August 2011 event ; and in MW-1, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9 and RW-1 during the December 2011 event;
- Sulfate was detected at concentrations above the NMWQCC "Other Standards for Domestic Water Supply" (600 mg/L) in MW-1 and MW-4 during the March and August 2011 events; and in MW-1, MW-4, MW-8 and RW-1 during the December 2011 event;
- Total Dissolved Solids were detected at concentrations above the NMWQCC "Other Standards for Domestic Water Supply" (1,000 mg/L) in MW-1, MW-2, MW-3, MW-4, MW-5, MW-6 and MW-7 during the March 2011 event, and in MW-1, MW-2, MW-4, MW-5, MW-6, and MW-7 during the June and August 2011 events; and in MW-1, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9 and RW-1 during the December 2011 event.

Duplicate samples were collected from MW-1 during the March and June 2011 events, from MW-2 during the August 2011 event and MW-3 during the December 2011 event. Duplicate constituents were detected without any significant deviations during all events. Copies of the certified analytical reports and chain-of-custody documentation are attached in APPENDIX A.

5.0 SUMMARY OF FINDINGS

Based on groundwater assessment activities performed by CRA at the Site in March, June, August and December, 2011, the summaries of findings include the following:

- CRA/CEMC has yet to receive comments on a Revised Stage 1 AP Plan (AP#57) that was submitted to the NMOCD on March 13, 2007. Consequently, a Site investigation was performed in October 2007 and a groundwater sampling event conducted on November 1, 2007. An Interim Investigation Report was submitted to the agency in March 2008. Three additional monitor wells were installed in September 2010. CRA conducted quarterly groundwater monitoring for 2011 and installed three additional monitor wells in September 2011;
- The depth to groundwater ranged from 29.37-feet to 36.18-feet below top of casing on March 10, 2011, ranged from 29.69-feet to 36.36-feet below top of casing on June 3, 2011, ranged from 29.65-feet to 36.31-feet below top of casing on August 23, 2011 and from 27.88-feet to 36.34-feet below top of casing on December 16, 2011. Groundwater flow at the Site is to the southeast at a gradient of 0.004-ft/ft.
- Benzene was detected at a concentration above the NMWQCC standard during the December 2011 sampling event in monitor well MW-9;
- Chloride was detected at concentrations above the NMWQCC "Other Standards for Domestic Water Supply" (250 mg/L) in MW-1, MW-3, MW-4, MW-5, MW-6 and MW-7 during the March and June 2011 events; and in MW-1, MW-4, MW-5, MW-6 and MW-7 during the August 2011 event ; and in MW-1, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9 and RW-1 during the December 2011 event.
- Sulfate was detected at concentrations above the NMWQCC "Other Standards for Domestic Water Supply" (600 mg/L) in MW-1 and MW-4 during the March and August 2011 events; and in MW-1, MW-4, MW-8 and RW-1 during the December 2011 event.
- Total Dissolved Solids were detected at concentrations above the NMWQCC "Other Standards for Domestic Water Supply" (1,000 mg/L) in MW-1, MW-2, MW-3, MW-4, MW-5, MW-6 and MW-7 during the March 2011 event, and in MW-1, MW-2, MW-4, MW-5, MW-6, and MW-7 during the June and August 2011 events; and in MW-1, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9 and RW-1 during the December 2011 event.
- The chloride plume is not delineated down gradient of MW-9.

6.0 RECOMMENDATIONS

Based upon the summary of findings presented in this report, the following is recommended:

- Delineate groundwater impacts to the east and south of the reserve pit;
- Continue quarterly groundwater sampling in 2012 to monitor the fluctuating chloride levels and total dissolved solids;

All of which is Respectfully Submitted,

CONESTOGA-ROVERS & ASSOCIATES

Desireé Crenshaw
Project Manager

Thomas C. Larson
Senior Project Geologist

EUNICE QUADRANGLE
NEW MEXICO

LAT= 32° 25' 56.9" N
LONG= 103° 08' 47.9"W

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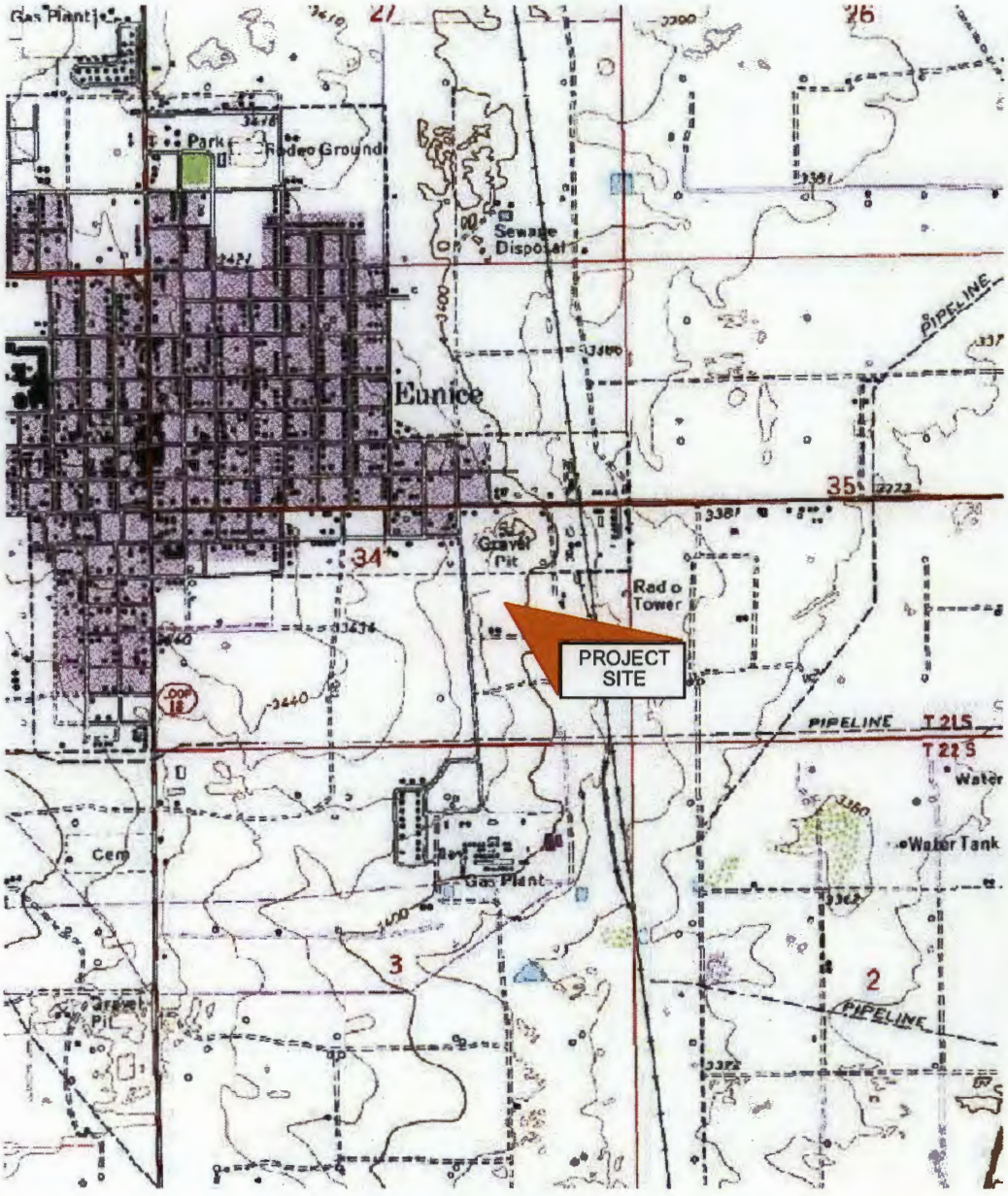

USGS MAP SERIES 1:24000

0 1/2 1 2
(Miles)

0 2000 4000 6000 8000
(Feet)

CONTOUR INTERVAL 5 FEET

figure 1

SITE LOCATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

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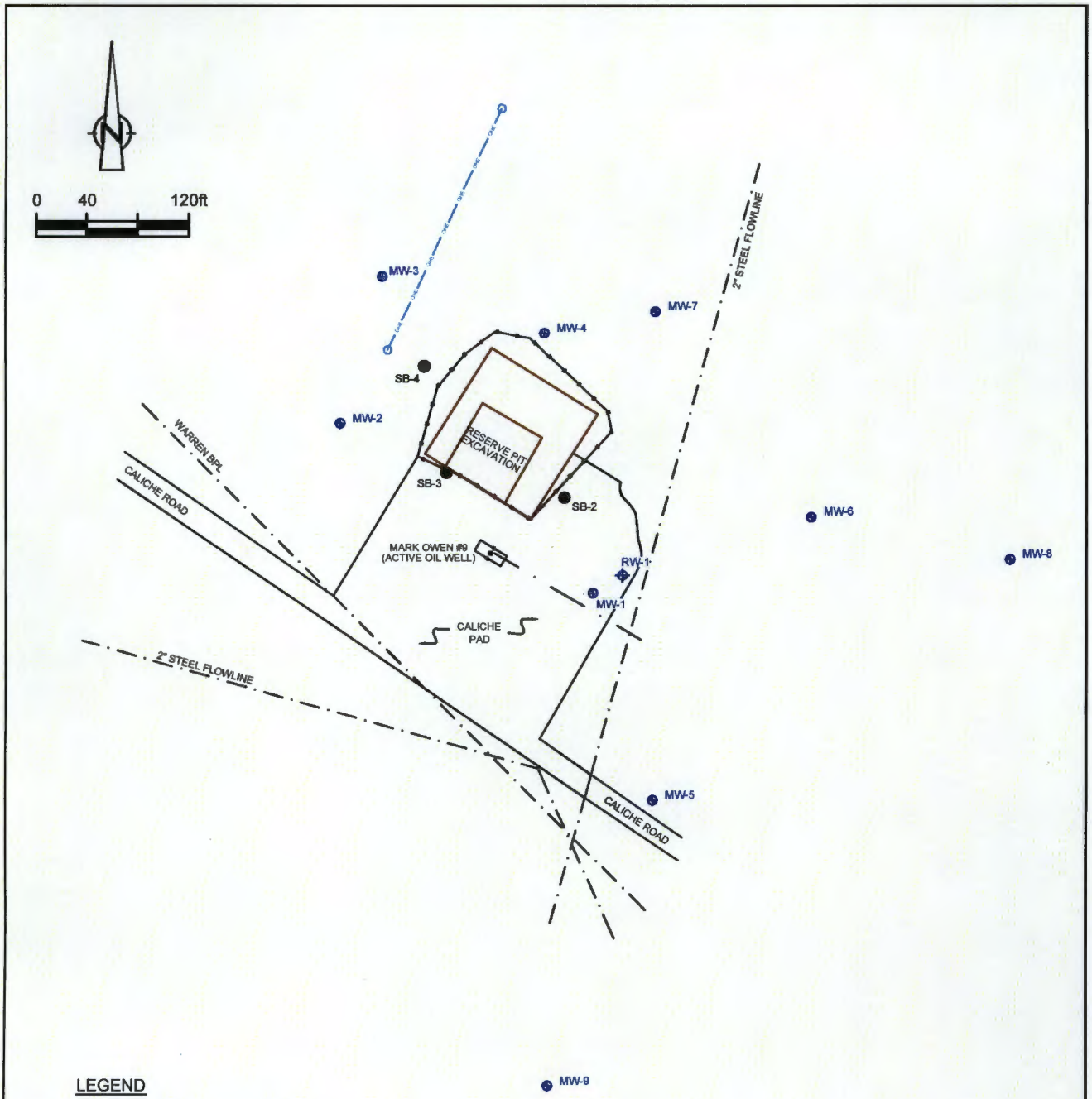

LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. MW-8, MW-9, AND RW-1 WERE INSTALLED SEPTEMBER 2011

figure 2

SITE DETAILS MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

CRA

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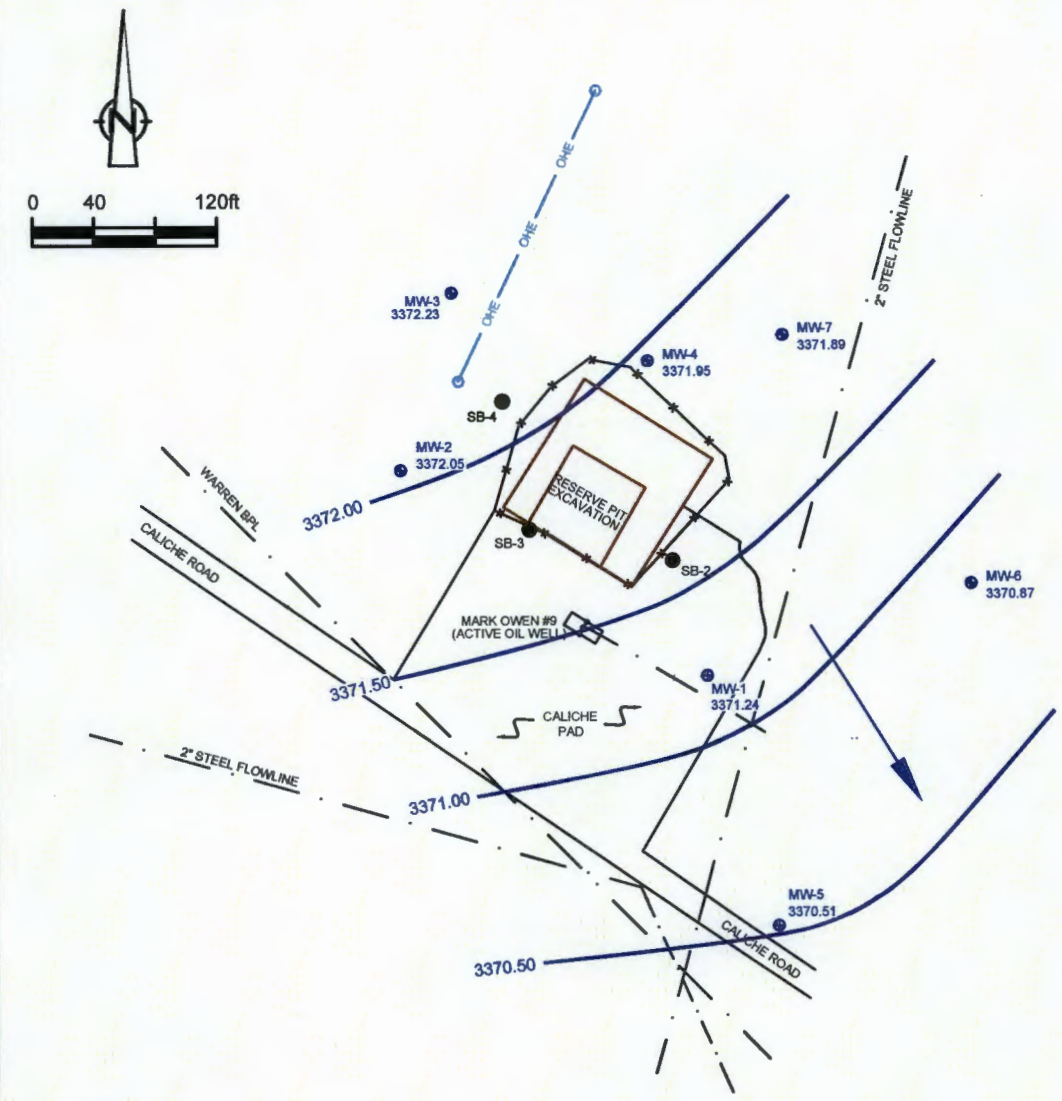

LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION
- CONTOUR (INTERVAL = 0.50 FT)
- GROUNDWATER FLOW

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE GAUGED MARCH 10, 2011

figure 3

MARCH 2011 GROUNDWATER GRADIENT MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

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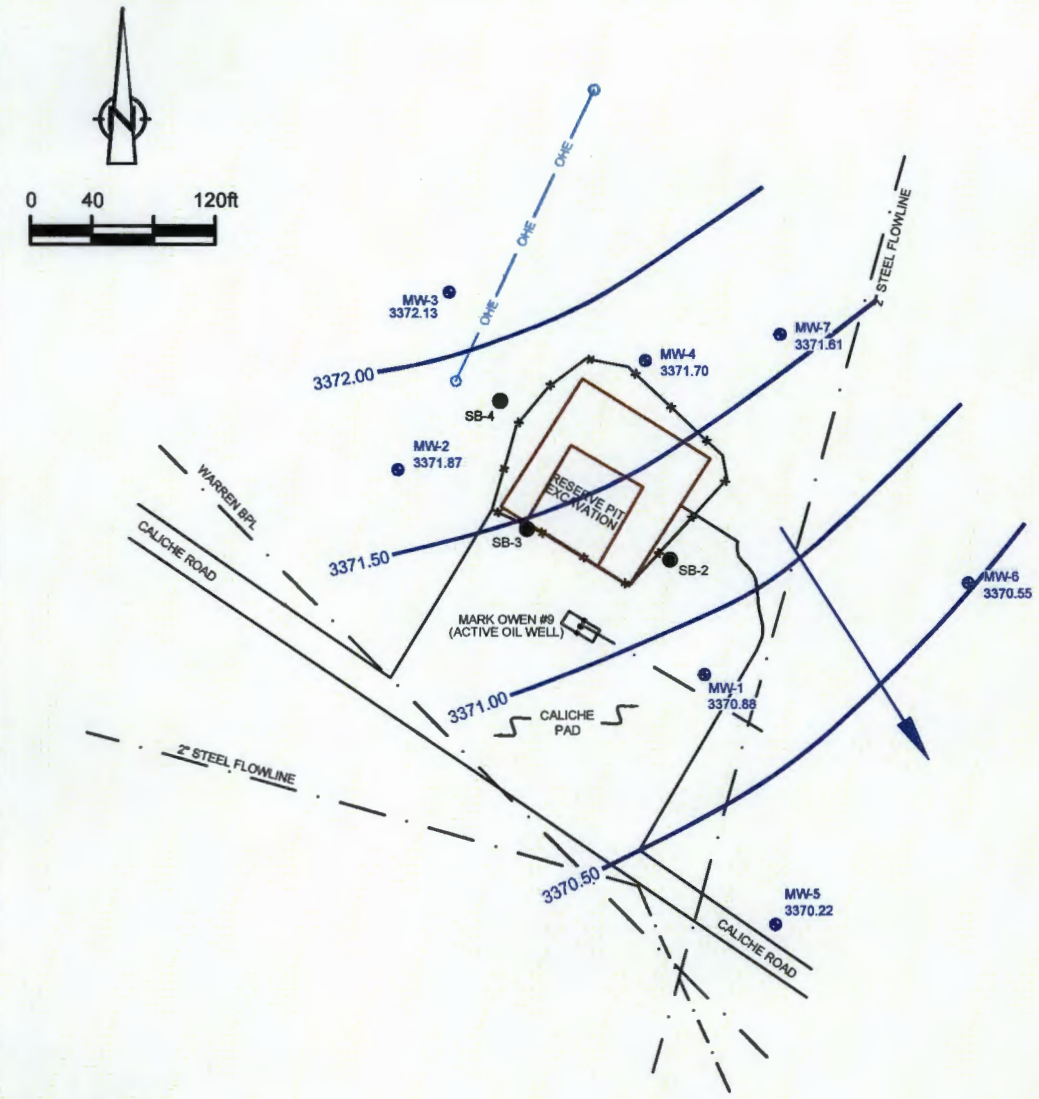

LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION
- CONTOUR (INTERVAL = 0.50 FT)
- GROUNDWATER FLOW

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE GAUGED JUNE 3, 2011

figure 4

JUNE 2011 GROUNDWATER GRADIENT MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

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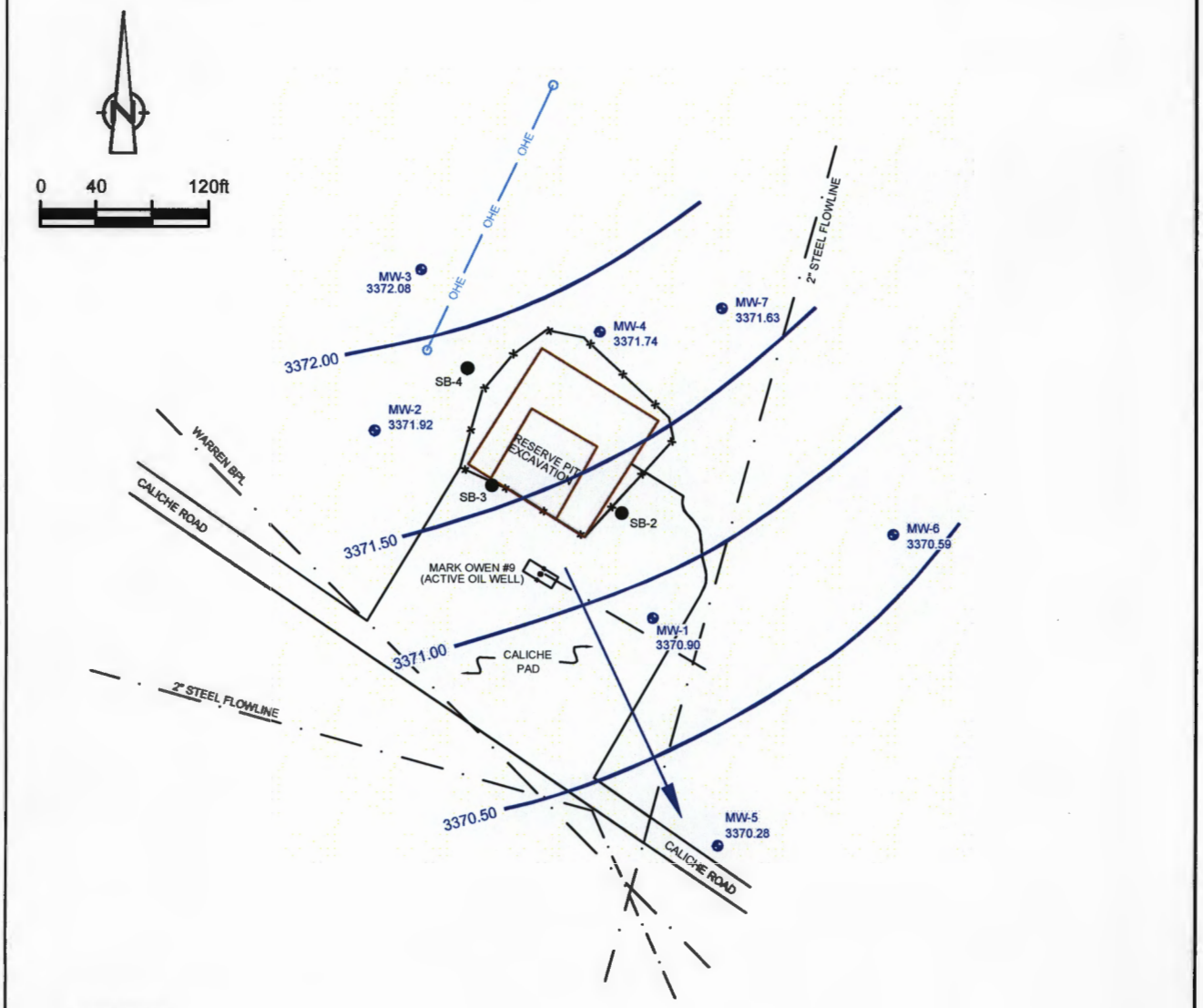

LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION
- CONTOUR (INTERVAL = 0.50 FT)
- GROUNDWATER FLOW

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE GAUGED AUGUST 23, 2011

figure 5

AUGUST 2011 GROUNDWATER GRADIENT MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

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CRA

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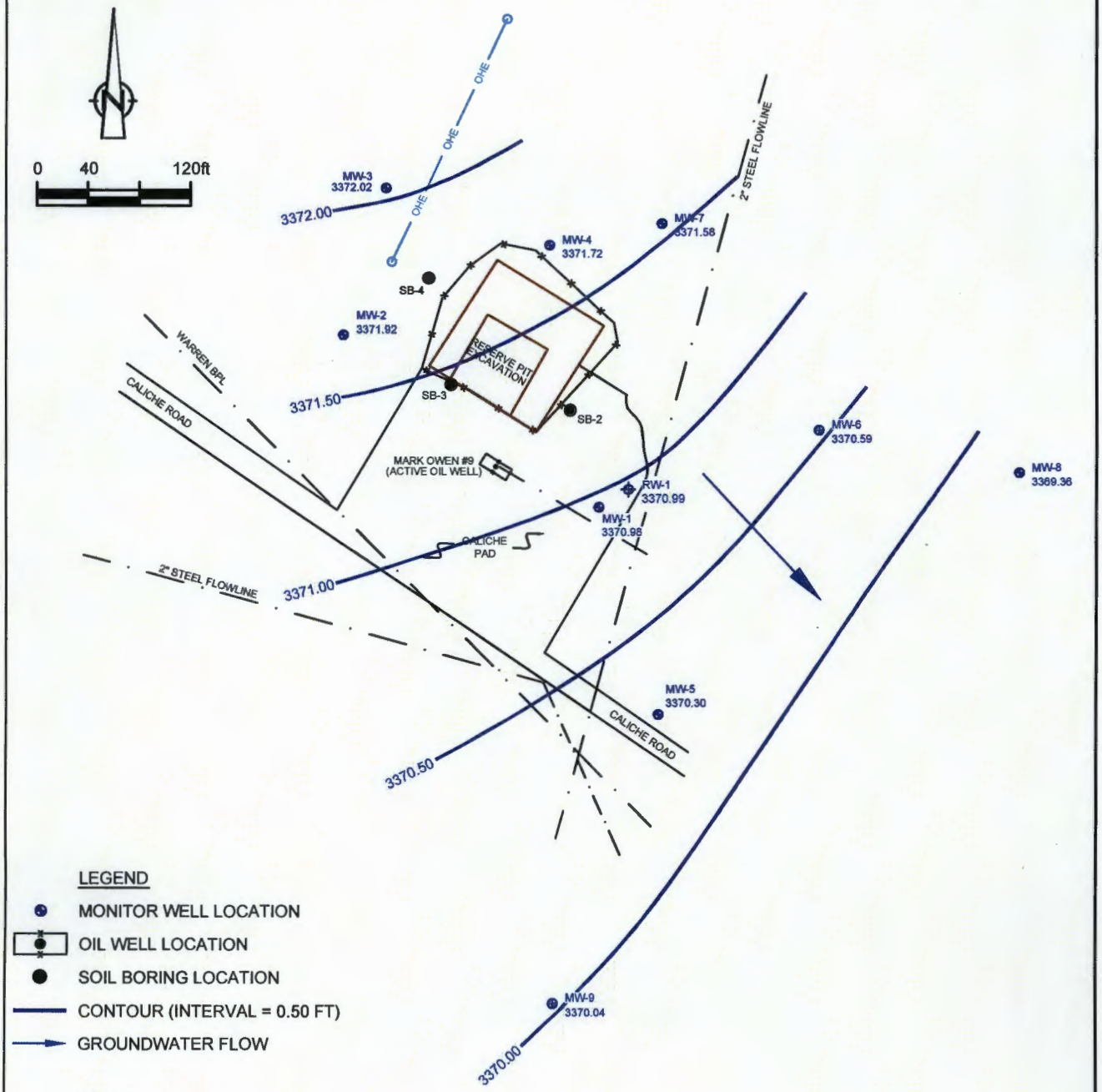

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS MW-8, MW-9, AND RW-1 WERE INSTALLED IN SEPTEMBER 2011
4. WELLS WERE GAUGED ON DECEMBER 16, 2011

figure 6

DECEMBER 2011 GROUNDWATER GRADIENT MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

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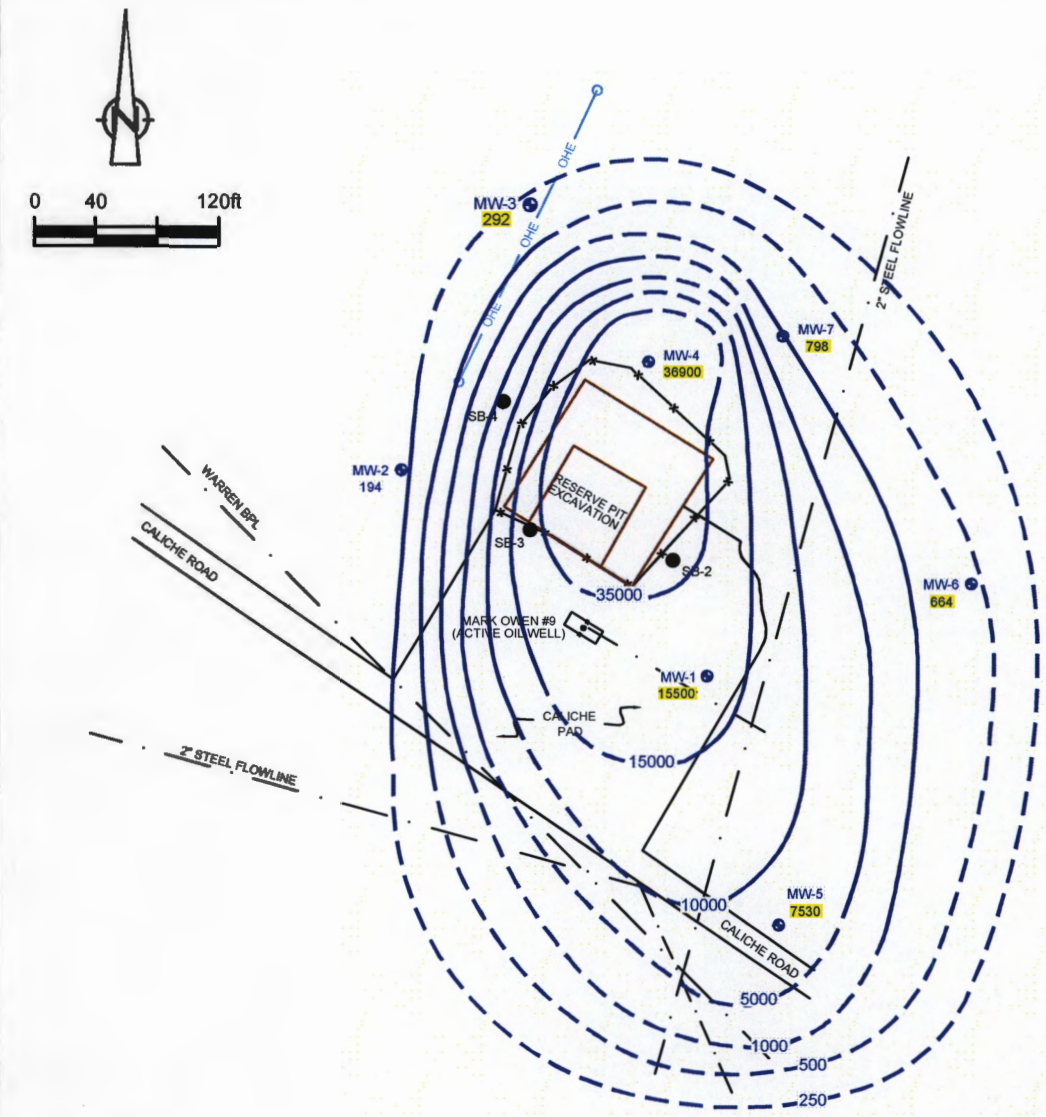

LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION
- CHLORIDE CONTOUR

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE SAMPLED ON MARCH 10, 2011

figure 7

MARCH 2011 CHLORIDE CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

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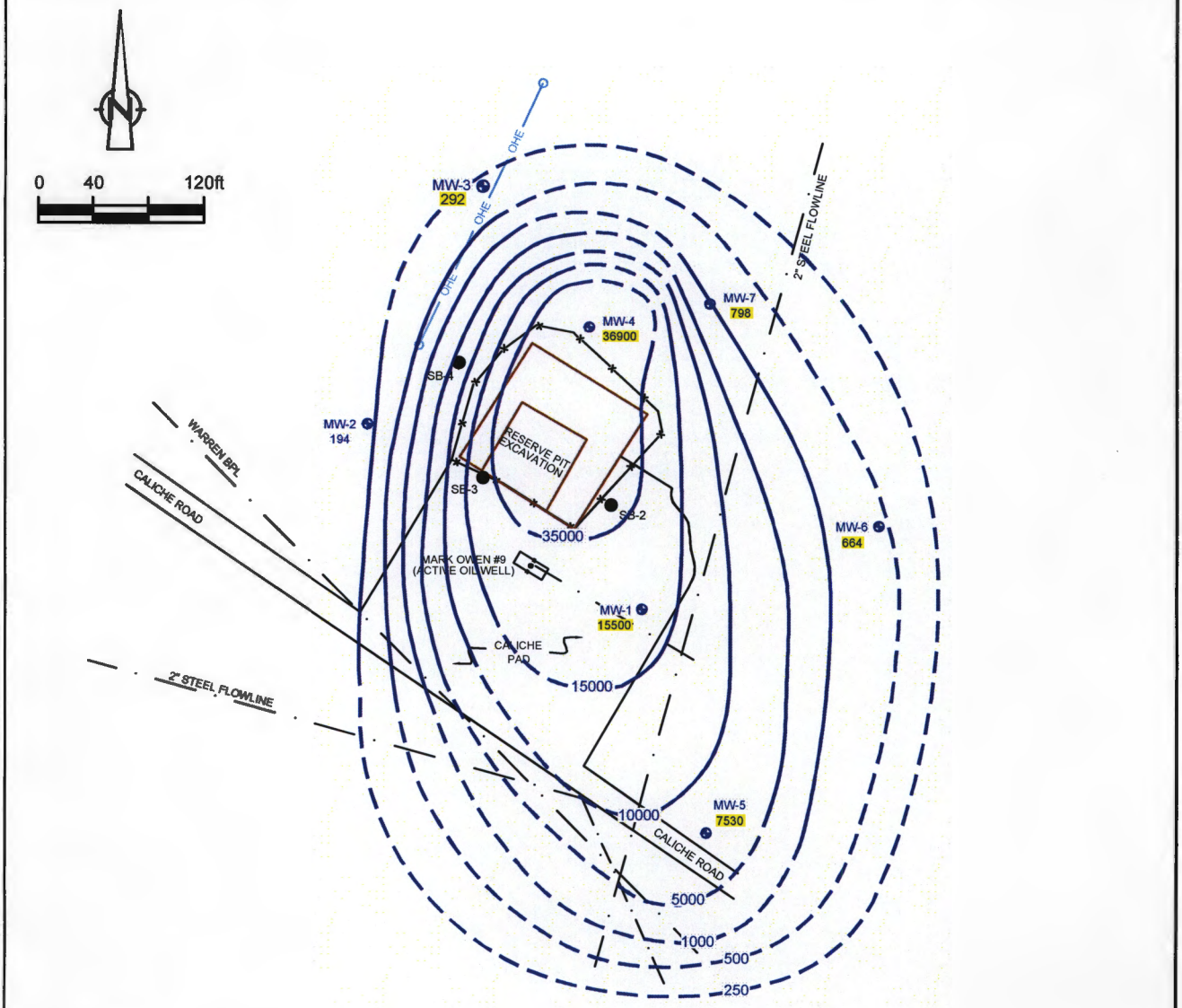

LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION
- CHLORIDE CONTOUR

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE SAMPLED ON MARCH 10, 2011

figure 7

MARCH 2011 CHLORIDE CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

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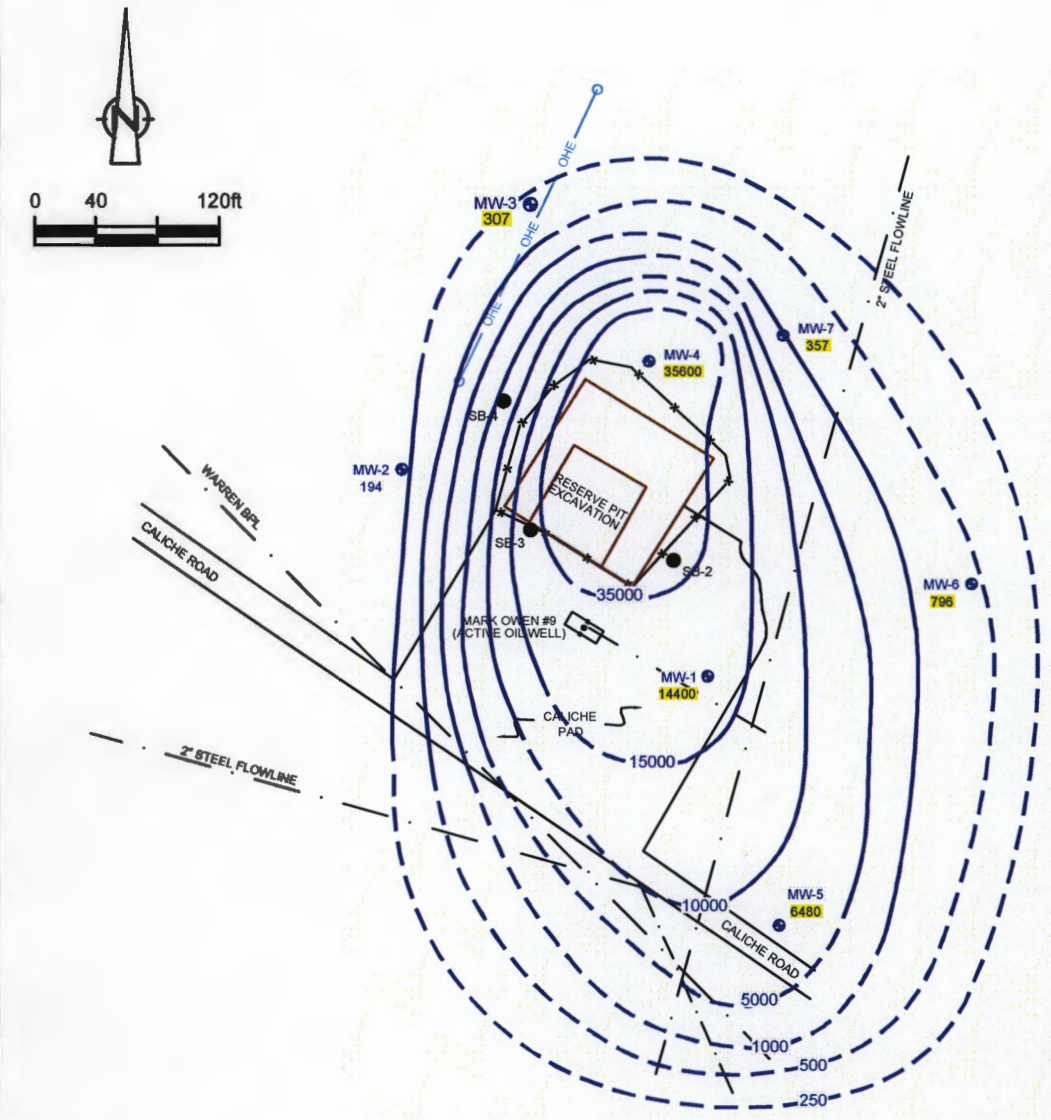

LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION
- CHLORIDE CONTOUR

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE SAMPLED JUNE 3, 2011

figure 8

JUNE 2011 CHLORIDE CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

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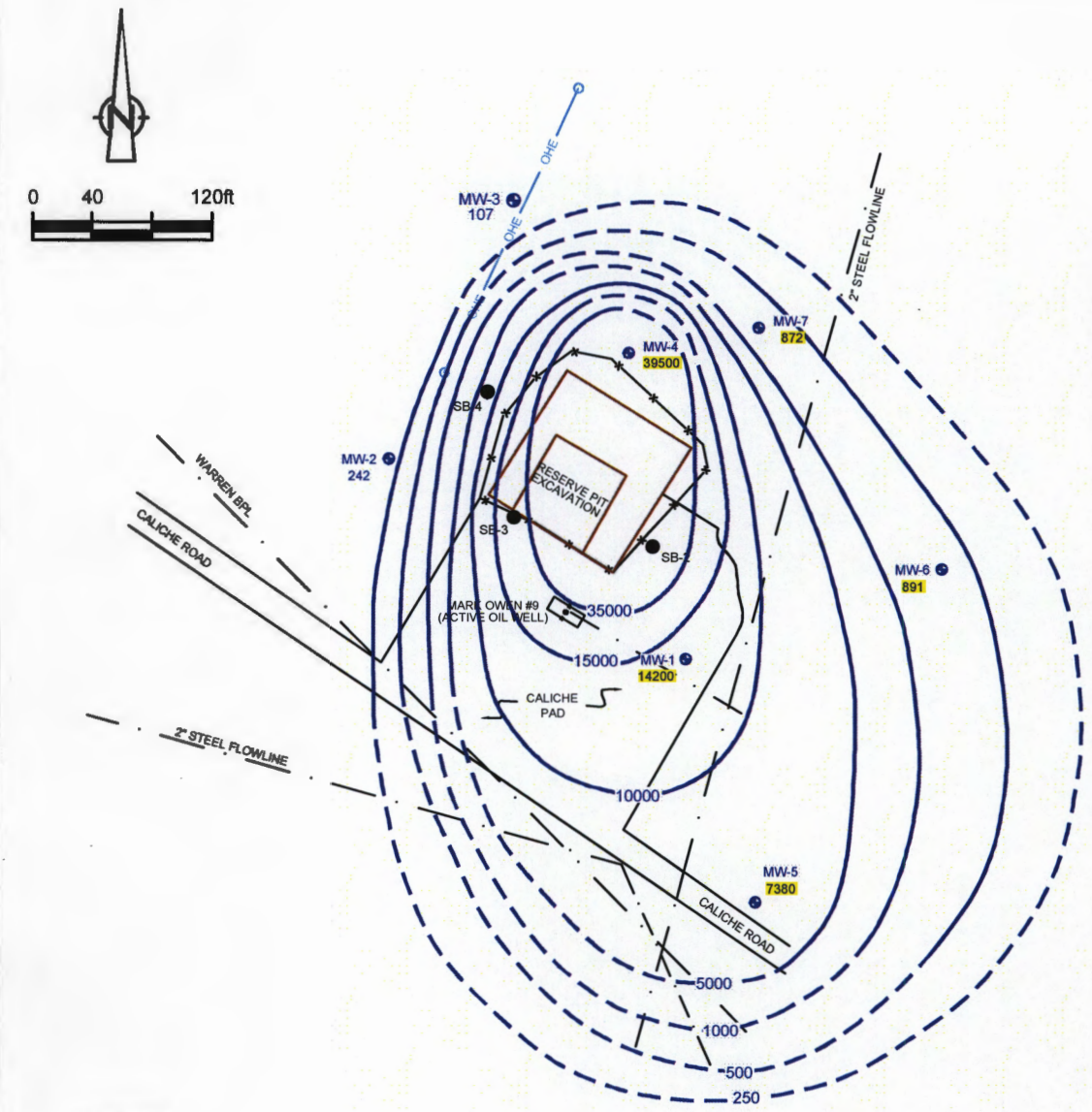

LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION
- CHLORIDE CONTOUR

NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE SAMPLED AUGUST 23, 2011

figure 9

AUGUST 2011 CHLORIDE CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

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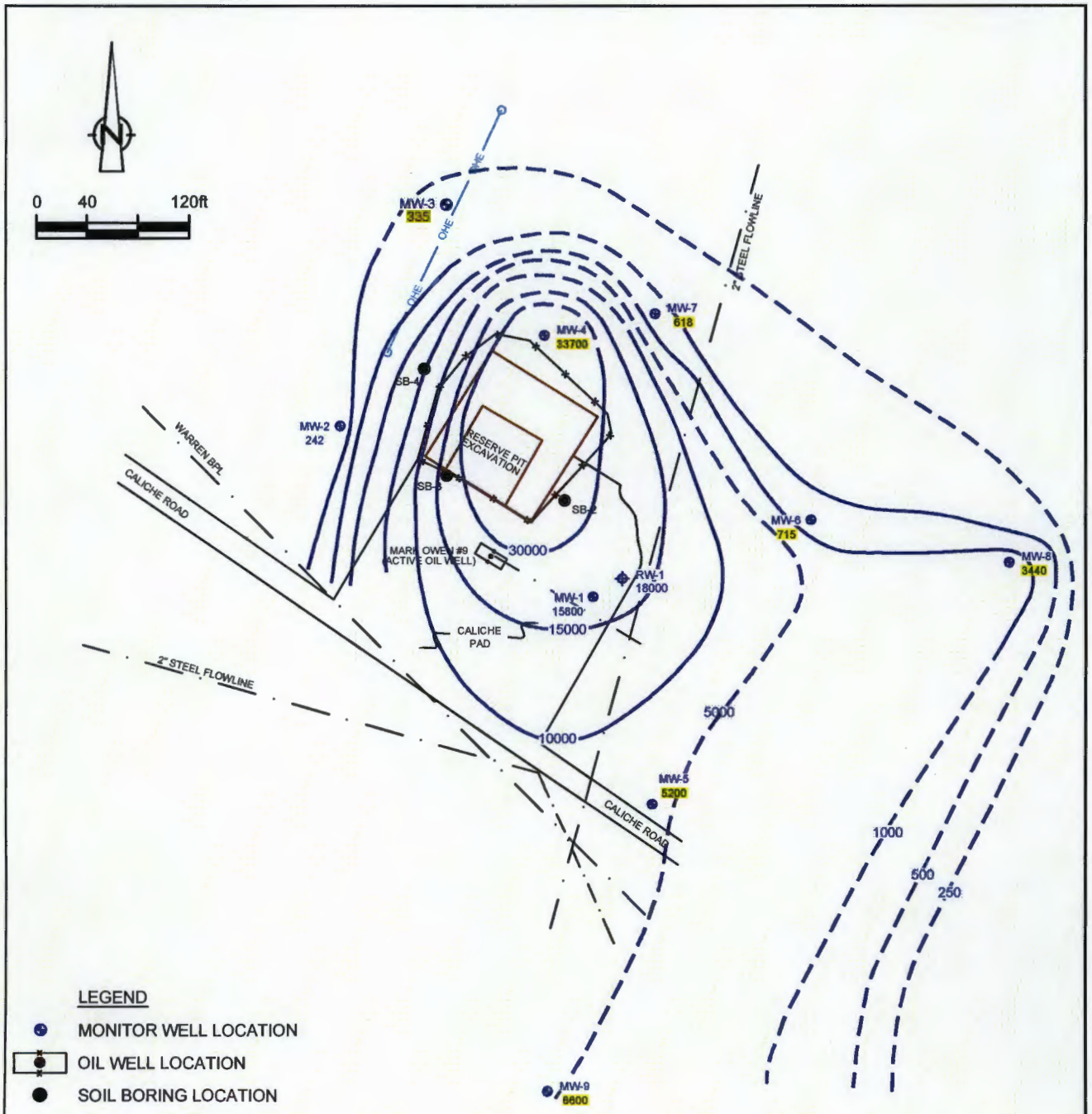


NOTES:

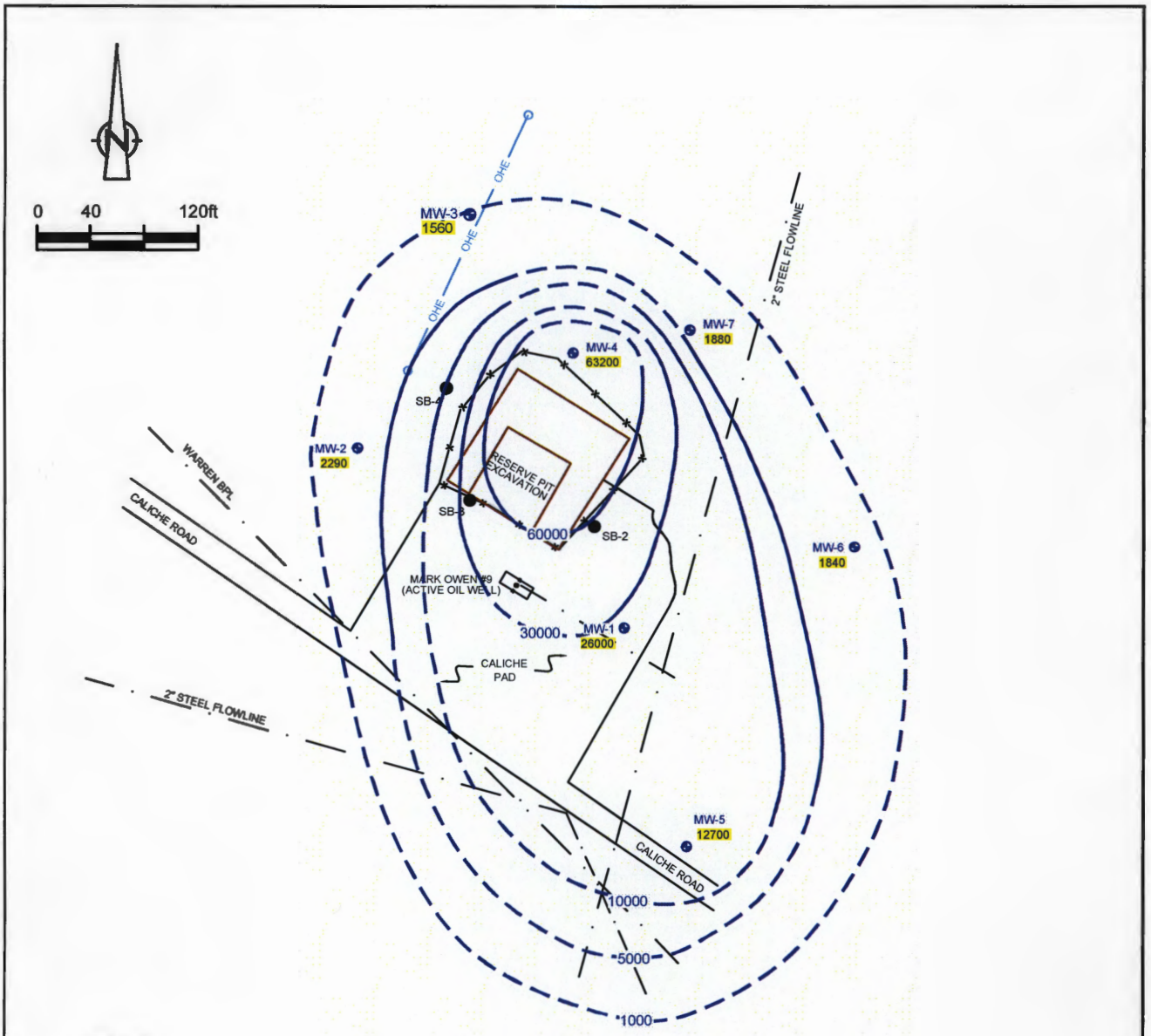
1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE SAMPLED DECEMBER 16, 2011

figure 10

DECEMBER 2011 CHLORIDE CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

Chevron Environmental Management Company

046121-10(008)GN-BR009 APR 10/2012



LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION
- CHLORIDE CONTOUR

NOTES:

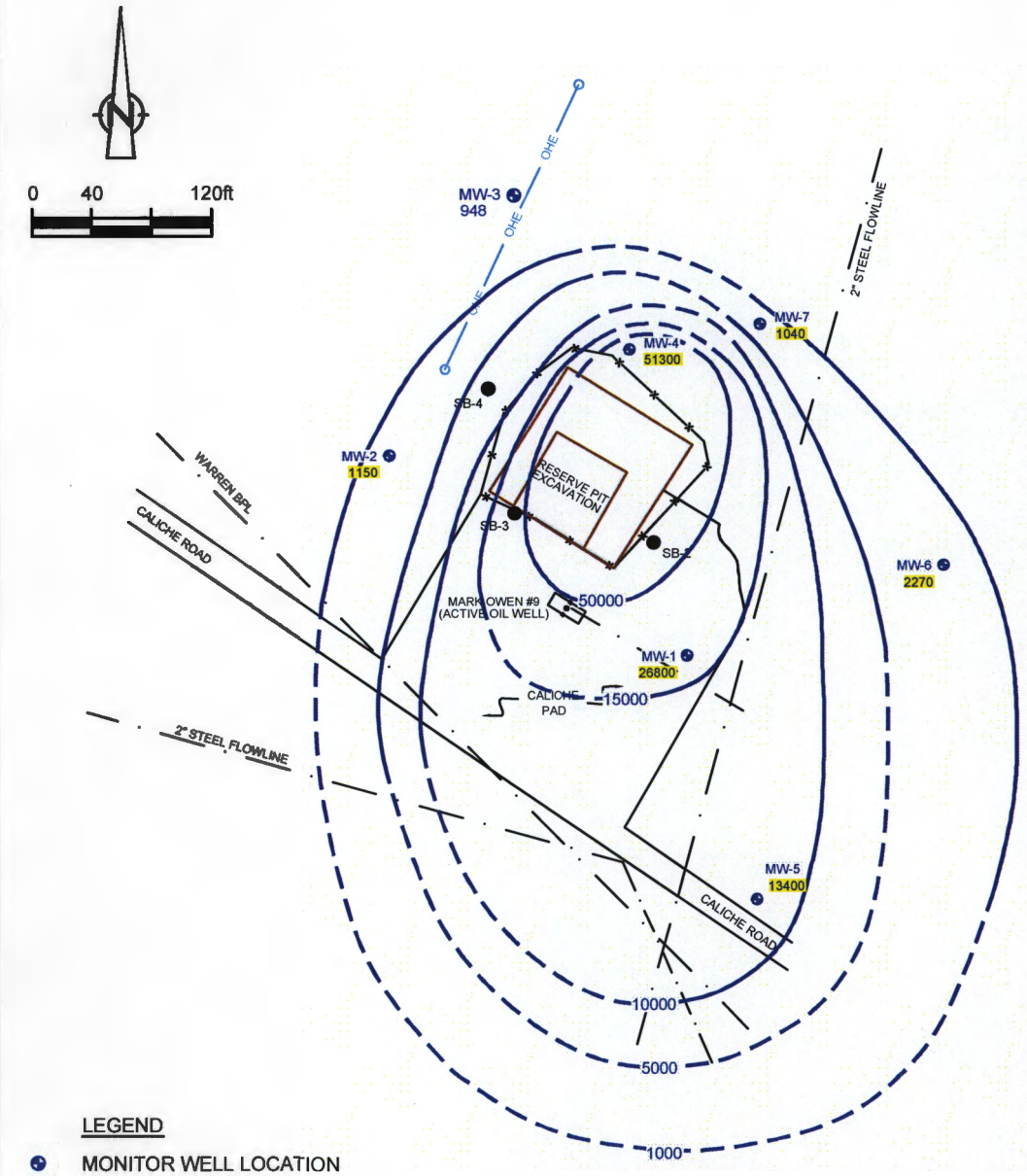
1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE SAMPLED MARCH 10, 2011

figure 11

MARCH 2011 TOTAL DISSOLVED SOLIDS CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

Chevron Environmental Management Company

046121-10(008)GN-BR010 APR 10/2012



LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION
- CHLORIDE CONTOUR

NOTES:

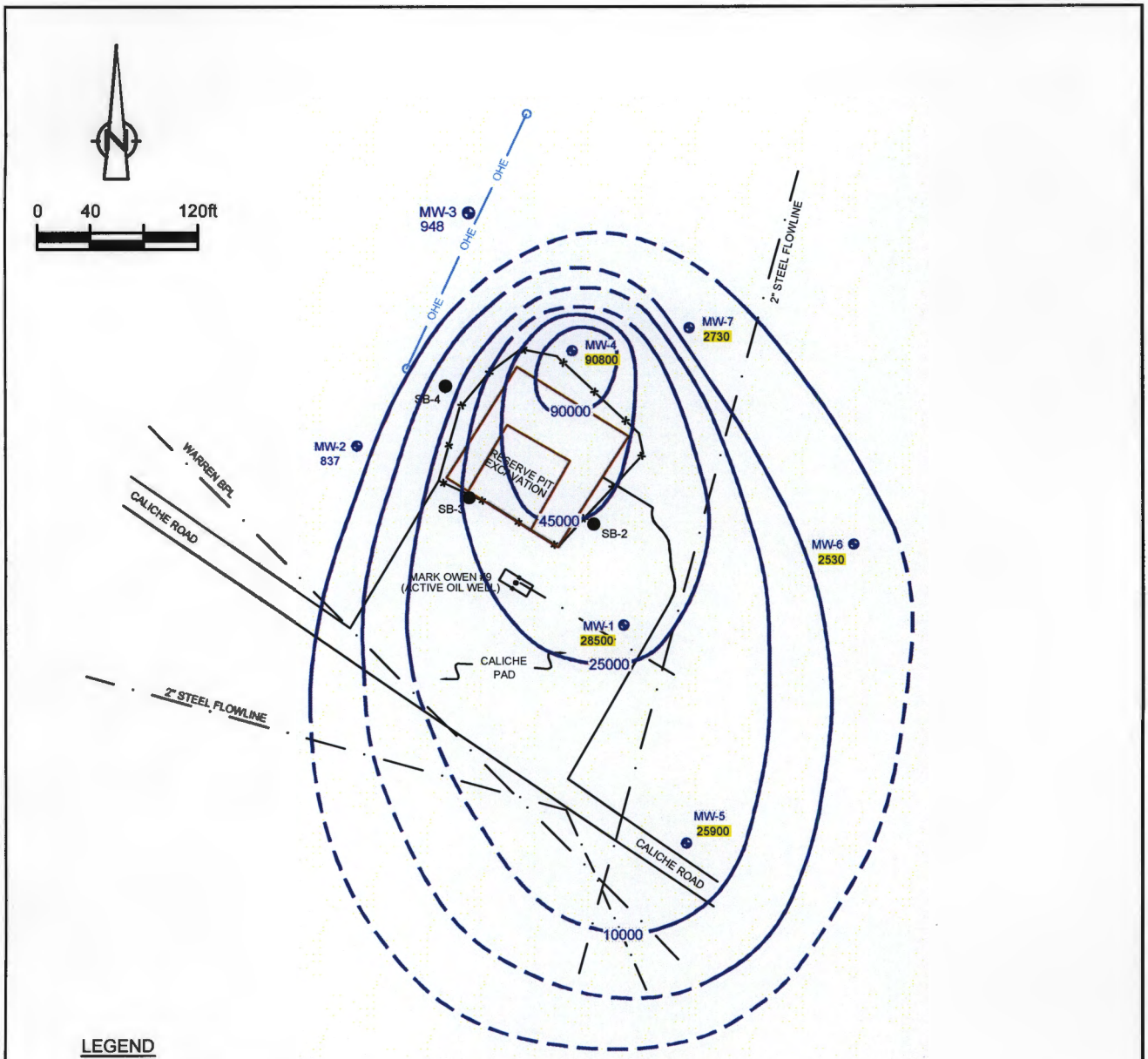
1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE SAMPLED JUNE 3, 2011

figure 12

JUNE 2011 TOTAL DISSOLVED SOLIDS CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM

Chevron Environmental Management Company

046121-10(008)GN-BR011 APR 10/2012



LEGEND

- MONITOR WELL LOCATION
- OIL WELL LOCATION
- SOIL BORING LOCATION
- CHLORIDE CONTOUR

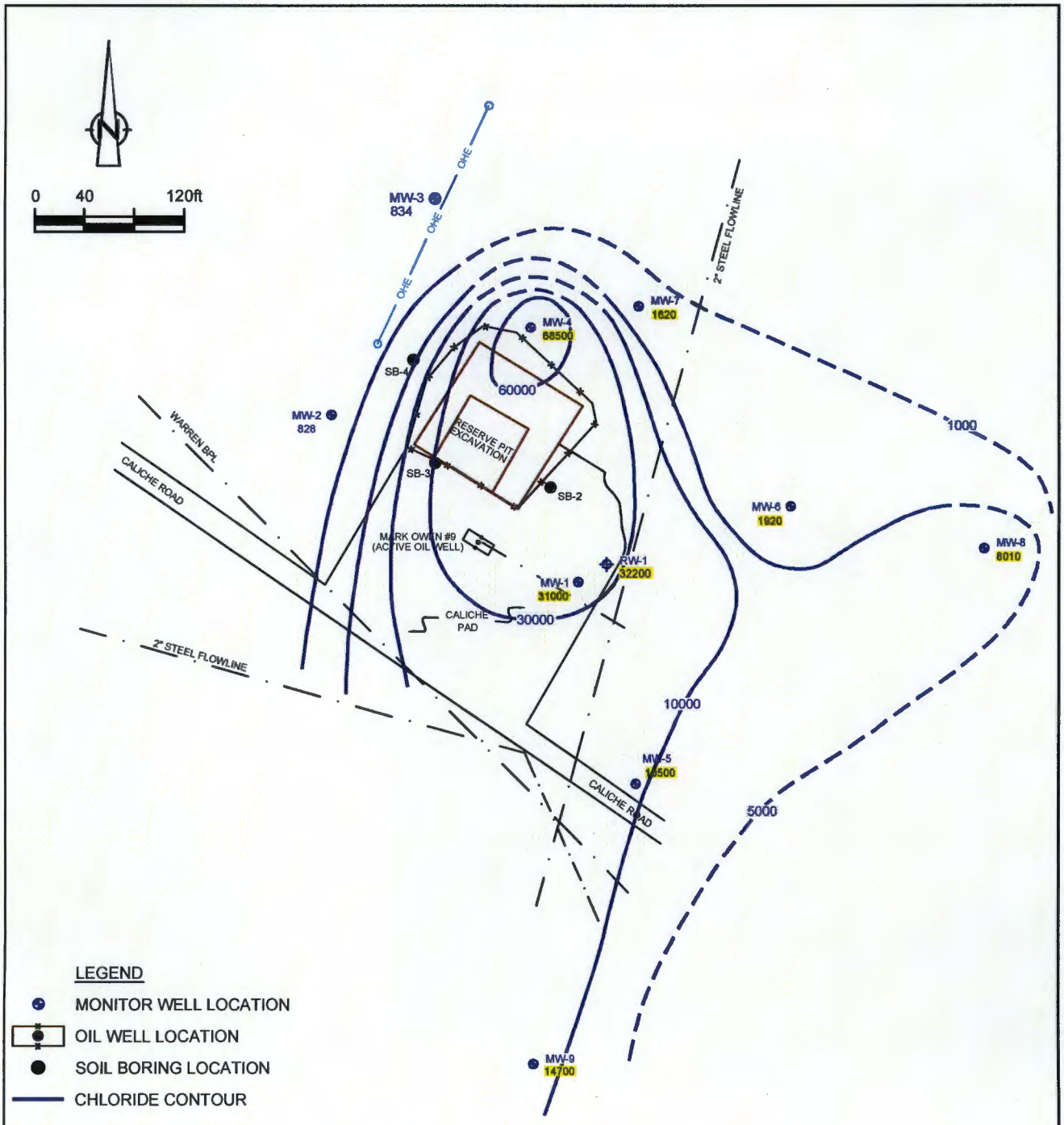
NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE SAMPLED AUGUST 23, 2011

figure 13

AUGUST 2011 TOTAL DISSOLVED SOLIDS CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

046121-10(008)GN-BR012 APR 10/2012



NOTES:

1. SOIL BORING, FENCE AND MONITOR WELL LOCATIONS SURVEYED BY WEST AND COMPANY DECEMBER 3, 2007 AND OCTOBER 8, 2010
2. MW-5, MW-6, AND MW-7 WERE INSTALLED IN SEPTEMBER 2010
3. WELLS WERE SAMPLED DECEMBER 16, 2011

figure 14

DECEMBER 2011 TOTAL DISSOLVED SOLIDS CONCENTRATION MAP
MARK OWEN #9 RESERVE PIT
NW/4 OF SE/4 SECTION 34; T-21-S, R-37-E LEA CO., NM
Chevron Environmental Management Company

046121-10(008)GN-BR013 APR 10/2012

TABLE I

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

WELL *TOC elev*[1]	DATE	Well Diameter (inches)	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Depth to LNAPL (ft below TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft above MSL[2])	Screen interval (bgs[3])
MW-01	11/1/2007	4	54.00	32.55	---	---	3371.13	
3,403.68	4/25/2008		54.03	32.60	---	---	3371.08	
	9/16/2008			32.81	---	---	3370.87	
	4/20/2009		55.00	32.72	---	---	3370.96	
	10/26/2009		54.10	32.75	---	---	3370.93	
	2/25/2010		53.90	32.68	---	---	3371.00	
	6/3/2010		54.02	32.80	---	---	3370.88	16'-51'
	8/31/2010		53.85	32.51	---	---	3371.17	
	11/22/2010		53.90	32.40	---	---	3371.28	
	3/10/2011		53.86	32.44	---	---	3371.24	
	6/3/2011		53.88	32.80	---	---	3370.88	
	8/23/2011		53.88	32.78	---	---	3370.90	
	12/16/2011			32.69	---	---	3370.99	
MW-02	11/1/2007	4	60.00	36.24	---	---	3371.99	
3,408.23	4/25/2008		60.29	36.40	---	---	3371.83	
	9/16/2008			36.48	---	---	3371.75	
	4/20/2009		60.22	36.45	---	---	3371.78	
	10/26/2009		60.30	36.46	---	---	3371.77	
	2/25/2010		61.25	36.42	---	---	3371.81	
	6/3/2010		60.26	36.41	---	---	3371.82	22'-57'
	8/31/2010		60.28	36.05	---	---	3372.18	
	11/22/2010		60.19	35.93	---	---	3372.30	
	3/10/2011		60.19	36.18	---	---	3372.05	
	6/3/2011		60.18	36.36	---	---	3371.87	
	8/23/2011		60.18	36.31	---	---	3371.92	
	12/16/2011		60.18	36.34	---	---	3371.89	
MW-03	11/1/2007	4	56.50	34.69	---	---	3372.35	
3,407.04	4/25/2008		57.55	34.89	---	---	3372.15	
	9/16/2008			35.00	---	---	3372.04	
	4/20/2009		57.51	35.02	---	---	3372.02	
	10/26/2009		57.44	35.05	---	---	3371.99	
	2/25/2010		58.60	34.88	---	---	3372.16	
	6/3/2010		57.52	35.03	---	---	3372.01	19'-54'
	8/31/2010		57.55	34.62	---	---	3372.42	
	11/22/2010		57.55	34.53	---	---	3372.51	
	3/10/2011		57.43	34.81	---	---	3372.23	
	6/3/2011		57.47	34.91	---	---	3372.13	
	8/23/2011		57.45	34.96	---	---	3372.08	
	12/16/2011			35.02	---	---	3372.02	
MW-04	11/1/2007	4	54.00	32.69	---	---	3372.05	
3,404.74	4/25/2008		54.22	32.83	---	---	3371.91	
	9/16/2008			33.02	---	---	3371.72	16'-51'
	4/20/2009		54.23	33.02	---	---	3371.72	
	10/26/2009		54.25	33.05	---	---	3371.69	
	2/25/2010		54.92	33.00	---	---	3371.74	

TABLE I

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

WELL *TOC elev*[1]	DATE	Well Diameter (inches)	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Depth to LNAPL (ft below TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft above MSL[2])	Screen interval (bgs[3])
	6/3/2010		54.07	33.05	---	---	3371.69	
	8/31/2010		54.15	32.85	---	---	3371.89	
	11/22/2010		54.15	32.55	---	---	3372.19	
	3/10/2011		54.14	32.79	---	---	3371.95	16'-51'
	6/3/2011		54.15	33.04	---	---	3371.70	
	8/23/2011		54.15	33.00	---	---	3371.74	
	12/16/2011			33.02	---	---	3371.72	
MW-05	11/22/2010	4	52.74	31.62	---	---	3370.48	
3402.1	3/10/2011		52.64	31.59	---	---	3370.51	
	6/3/2011		52.65	31.88	---	---	3370.22	15'-50'
	8/23/2011		52.63	31.82	---	---	3370.28	
	12/15/2011			31.80	---	---	3370.30	
MW-06	11/22/2010	4	48.68	29.26	---	---	3370.98	
3400.24	3/10/2011		48.37	29.37	---	---	3370.87	
	6/3/2011		48.36	29.69	---	---	3370.55	10'-45'
	8/23/2011		48.36	29.65	---	---	3370.59	
	12/15/2011			29.71	---	---	3370.53	
MW-07	11/22/2010	4	51.01	30.07	---	---	3372.06	
3402.13	3/10/2011		51.00	30.24	---	---	3371.89	
	6/3/2011		51.15	30.52	---	---	3371.61	13'48'
	8/23/2011		51.10	30.50	---	---	3371.63	
	12/15/2011			30.55	---	---	3371.58	
MW-08	12/16/2011	4		27.88	---	---	3369.36	20'-50'
3397.24								
MW-09	12/16/2011	4		34.72	---	---	3370.04	20'-50'
3404.76								
RW-1	12/16/2011	6		32.04	---	---	3370.99	20'-50'
3403.03								

Notes:

[1]TOC - Top of Casing

[2]MSL - Mean Sea Level

[3]BGS - Below ground surface

Professional Survey conducted by West Company of Midland, Inc. on December 10, 2007.

TABLE II

GROUNDWATER ANALYTICAL SUMMARY - BTEX AND TPH
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	TPH		
						GRO	DRO	Total
New Mexico Water Quality Control Commission Standard								
		0.01	0.75	0.75	0.62	---	---	---
MW-1	11/1/07	<0.00006	<0.0001	<0.00012	<0.00021	<0.02014	<0.36	<0.38014
	4/25/08	<0.00037	<0.00039	<0.00042	0.00035	<0.050	<0.000024	<0.050024
	9/16/08	<0.001	<0.001	<0.001	<0.003	<0.100	**0.25**	**0.25**
	4/21/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
DUP	4/21/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	10/27/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	2/25/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
DUP	2/25/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	8/31/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	11/22/10	<0.0002	<.0002	<.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/26/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
MW-2	11/1/07	<0.00006	0.00035J	<0.00012	<0.00021	<0.02014	**1.8**	**1.82014**
	4/25/08	<0.00037	<0.00039	<0.00042	0.00035	<0.050	<0.000024	<0.050024
	9/16/08	<0.001	<0.001	<0.001	<0.003	<0.100	**0.07**	**0.070**
	4/21/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	10/27/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	2/25/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	8/31/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
DUP	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
MW-3	11/1/07	<0.00006	0.0005J	<0.00012	<0.00021	<0.02014	<0.36	<0.38014
	4/25/08	<0.00037	<0.00039	<0.00042	0.00035	<0.050	<0.000024	<0.050024
	9/16/08	<0.001	<0.001	<0.001	<0.003	<0.100	**0.073**	**0.073**

TABLE II

GROUNDWATER ANALYTICAL SUMMARY - BTEX AND TPH
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	TPH		
						GRO	DRO	Total
New Mexico Water Quality Control Commission Standard								
		0.01	0.75	0.75	0.62	—	—	—
	4/21/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	10/27/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	2/25/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	8/31/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
MW-4	11/1/07	<0.00006	0.00052J	<0.00012	<0.00021	<0.02014	<0.36	<0.38014
DUP	11/1/07	<0.00006	0.00054J	<0.00012	<0.00021	<0.02014	<0.36	<0.38014
	4/25/08	<0.00037	<0.00039	<0.00042	0.00035	<0.050	<0.000024	<0.050024
DUP	4/25/08	<0.00037	<0.00039	<0.00042	0.00035	<0.050	<0.000024	<0.050024
	9/16/08	<0.001	<0.001	<0.001	<0.003	<0.100	**0.052**	**0.052**
DUP	9/16/08	<0.001	<0.001	<0.001	<0.003	<0.100	**0.052**	**0.052**
	4/21/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	10/27/09	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	2/25/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	8/31/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
MW-4	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
(continued)								
MW-5	9/23/10	<0.0002	<0.0002	<0.0002	<0.0006	<0.0020	0.002	0.002
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA

TABLE II

GROUNDWATER ANALYTICAL SUMMARY - BTEX AND TPH
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	TPH		
						GRO	DRO	Total
New Mexico Water Quality Control Commission Standard								
		0.01	0.75	0.75	0.62	---	---	---
MW-6	9/23/10	<0.0002	<0.0002	<0.0002	<0.0006	<0.0020	0.280	0.280
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
DUP	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
DUP	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
MW-7	9/23/10	<0.0002	<0.0002	<0.0002	<0.0006	<0.0020	0.340	0.340
	11/22/10	<0.0002	<0.0002	<0.0002	<0.0006	NA	NA	NA
	3/10/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	6/3/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	8/24/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
MW-8	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA
MW-9	12/16/11	0.0241	<0.0020	<0.0020	<0.0010	NA	NA	NA
RW-1	12/16/11	<0.0010	<0.0020	<0.0020	<0.0010	NA	NA	NA

Notes:

1) **Bold** concentrations above lab reporting limits.
2) BTEX analysis by EPA Method 8021B
3) TPH (GRO/DRO) analysis by EPA Method 8015 Modified.
4) Results shown in mg/L.
5) J = estimated value between RL & MDL
6) DUP = Duplicate sample

TABLE III

GROUNDWATER ANALYTICAL SUMMARY - RCRA METALS AND GROUNDWATER QUALITY PARAMETERS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
OWEN #9 RESERVE PIT RELEASE
NW/4, SE/4, SECTION 34, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

Sample I.D. No.	Date	RCRA Metals: Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Groundwater Quality: Total Alkalinity ($CaCO_3$) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
NMWQCC Human Health Standards for Groundwater[1]		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		NMWQCC Other Standards for Domestic Water Supply[2] 250 mg/L	600 mg/L	1000 mg/L
MW-1	11/01/07	0.0144B	0.0839	<0.00073	<0.00155	<0.0021	<0.000053	0.00752B	<0.00125	201	321	84.4	1,010
	04/25/08	0.0118B	0.127	<0.00073	0.0036B	<0.0021	<0.000066	0.00536B	<0.00125	167	623	124	NA
	09/16/08	0.014	0.40	<0.002	0.0024B	<0.003	<0.0002	0.0072	<0.005	146	1,590	154	3,620
	04/21/09	NA	NA	NA	NA	NA	NA	NA	NA	212	1,320	207	2,860
DUP	04/21/09	NA	NA	NA	NA	NA	NA	NA	NA	200	1,740	181	3,720
	10/27/09	NA	NA	NA	NA	NA	NA	NA	NA	126	9,770	297	19,000
	02/25/10	NA	NA	NA	NA	NA	NA	NA	NA	163	5,210	207	11,900
DUP	02/25/10	NA	NA	NA	NA	NA	NA	NA	NA	163	5,320	204	11,300
	06/03/10	NA	NA	NA	NA	NA	NA	NA	NA	140	7,390	243	15,200
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	166	8,220	196	12,500
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	158	8,070	264	17,600
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	160	15,500	1350	26,000
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	172	14,000	258	28,800
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	140	14,200	886	28,500
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	148	15,800	665	31,000
MW-2	11/01/07	0.0123B	0.0979	<0.00073	<0.00155	<0.0021	<0.000053	0.00403B	<0.00125	187	200	72.4	698
	04/25/08	0.0133B	0.0992	<0.00073	0.00186B	<0.0021	<0.000066	0.00315B	<0.00125	174	190	72.9	NA
	09/16/08	0.012	0.12B	<0.002	0.0056	<0.003	<0.0002	0.006	<0.005	181	182	91.9	729
	04/21/09	NA	NA	NA	NA	NA	NA	NA	NA	203	167	172	744
	10/27/09	NA	NA	NA	NA	NA	NA	NA	NA	205	175	163	830
	02/25/10	NA	NA	NA	NA	NA	NA	NA	NA	224	167	193	832
	06/03/10	NA	NA	NA	NA	NA	NA	NA	NA	221	181	141	818
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	226	208	138	814
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	233	162	125	823

Sample I. D. No.	Date	RCRA Metals								Groundwater Quality			
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Total Alkalinity ($CaCO_3$) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
NMWQCC Human Health Standards for Groundwater[1]										NMWQCC Other Standards for Domestic Water Supply[2]			
		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		250 mg/L	600 mg/L	1000 mg/L
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	240	194	120	2290
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	260	229	144	1150
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	220	242	197	837
DUP	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	180	249	201	1160
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	297	223	167	828
MW-3	11/01/07	0.0185B	0.102	<0.00073	<0.00155	<0.0021	<0.000053	0.00282B	<0.00125	212	77	40.6	476
	04/25/08	0.0218	0.0882	<0.00073	0.00178B	<0.0021	<0.000066	<0.00203	<0.00125	206	99.3	49.9	NA
	09/16/08	0.026	0.096B	<0.002	<0.005	<0.003	<0.0002	<0.005	<0.005	222	63.7	31.8	457
	04/21/09	NA	NA	NA	NA	NA	NA	NA	NA	229	53.6	32.2	447
MW-3	10/27/09	NA	NA	NA	NA	NA	NA	NA	NA	223	65.5	35.5	488
(continued)	02/25/10	NA	NA	NA	NA	NA	NA	NA	NA	231	62.7	34.8	467
	06/03/10	NA	NA	NA	NA	NA	NA	NA	NA	230	87.1	42.2	530
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	226	82.4	46.8	495
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	225	64	52.6	490
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	220	292	98.2	1560
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	224	307	102	948
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	160	101	53.7	290
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	209	335	137	834
DUP	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	208	309	126	1030
MW-4	11/01/07	0.0203	0.117	<0.00073	<0.00205	<0.0021	<0.000053	0.00425B	<0.00125	193	6,360	180	12,100
DUP	11/01/07	0.0176B	0.116	<0.00073	<0.00155	<0.0021	<0.000053	0.00246B	<0.00125	193	6,170	189	12,800
	04/25/08	0.0206	0.0856	<0.00073	<0.00155	<0.0021	<0.000066	0.00316B	<0.00125	195	5,680	163	NA
DUP	04/25/08	0.0203	0.0858	<0.00073	<0.00158	<0.0021	<0.000066	<0.00203	<0.00125	191	5,540	163	NA
	09/16/08	0.018	0.092B	<0.002	<0.005	<0.003	<0.0002	<0.005	<0.005	196	4,420	136	8,140
DUP	09/16/08	0.019	0.088B	<0.002	<0.005	<0.003	<0.0002	<0.005	<0.005	202	4,210	135	7,910
	04/21/09	NA	NA	NA	NA	NA	NA	NA	NA	208	128	33.2	551
	10/27/09	NA	NA	NA	NA	NA	NA	NA	NA	196	3,070	173	10,800
DUP	10/27/09	NA	NA	NA	NA	NA	NA	NA	NA	209	1,520	73.4	2,910
	02/25/10	NA	NA	NA	NA	NA	NA	NA	NA	189	10,600	339	21,800
	06/30/10	NA	NA	NA	NA	NA	NA	NA	NA	204	3,640	124	6,520
DUP	06/30/10	NA	NA	NA	NA	NA	NA	NA	NA	202	3,310	124	6,480
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	205	3,520	121	6,480
DUP	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	207	3,520	125	6,480

Sample I. D. No.	Date	RCRA Metals								Groundwater Quality			
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Total Alkalinity ($CaCO_3$) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
NMWQCC Human Health Standards for Groundwater[1]										NMWQCC Other Standards for Domestic Water Supply[2]			
		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		250 mg/L	600 mg/L	1000 mg/L
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	202	3,160	122	11,500
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	280	36,900	5,970	67,200
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	228	35,600	575	51,300
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	170	39,500	3,690	90,800
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	172	33,700	<2500	68,500
MW-5	09/23/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	571	102	NA
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	285	1,030	120	2,500
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	310	7,930	582	12,700
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	288	6,480	376	13,400
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	242	7,380	545	15,900
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	286	5,200	279	10,500
MW-6	09/23/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	554	349	NA
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	198	589	310	1,710
DUP	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	193	551	302	1,720
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	212	743	284	1,840
DUP	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	236	664	262	1,940
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	232	796	296	2,270
DUP	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	220	797	299	3,290
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	160	891	372	2,530
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	215	715	334	1,920
MW-7	09/23/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	120	70.5	NA
	11/22/10	NA	NA	NA	NA	NA	NA	NA	NA	204	372	178	1,260
	03/10/11	NA	NA	NA	NA	NA	NA	NA	NA	20	798	252	1,890
	06/03/11	NA	NA	NA	NA	NA	NA	NA	NA	220	353	116	1,010
	08/23/11	NA	NA	NA	NA	NA	NA	NA	NA	190	872	324	2,730
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	214	618	237	1,620
MW-8	09/12/11	NA	NA	NA	NA	NA	NA	NA	NA	194	3,180	765	7,680
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	196	3,440	706	8,010
MW-9	09/12/11	NA	NA	NA	NA	NA	NA	NA	NA	261	913	104	2,580
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	291	6,660	362	14,700

Sample I. D. No.	Date	RCRA Metals Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Groundwater Quality Total Alkalinity ($CaCO_3$) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
NMWQCC Human Health Standards for Groundwater[1]		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L	NMWQCC Other Standards for Domestic Water Supply[2]	250 mg/L	600 mg/L	1000 mg/L
RW-1	09/13/11	NA	NA	NA	NA	NA	NA	NA	NA	**156**	**9820D**	**306**	**18,600**
	12/16/11	NA	NA	NA	NA	NA	NA	NA	NA	**177**	**18,000**	**661**	**32,200**

Notes:

1) RCRA Metals Analysis by EPA Methods 6010B and 7470A.
2) Groundwater Quality by EPA Methods 160.1, 300.0, and 310.1.
3) **Bold** concentrations above lab reporting limits.
4) Higlighted concentrations above NMWQCC Other Standards for Domestic Water Supply.
5) [1] NMWQCC Human Health Standards Per NMAC 20.6.2.3103A
6) [2] NMWQCC Other Standards for Domestic Water Supply Per NMAC 20.6.2.3103B
7) B = estimated value between RL & MDL
8) NA= Not analyzed
9) DUP = Duplicate sample

TABLE IV

SUMMARY OF SOIL ANALYTICAL DATA - BTEX/TPH/CHLORIDES
Owen #9 Assessment
Eunice, NM

SAMPLE ID	DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	CHLORIDE (mg/kg)	TPH (8015 Modified)		
									TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH (GRO/DRO) (mg/kg)
New Mexico Oil Conservation Division Recommended Remediation Action Levels (Total Ranking Score >19)											
			10 mg/Kg	—	—	—	50.0 mg/Kg	—	—	—	100 mg/Kg
Soil Boring Samples											
SB-4 9-10'	10/23/2007	9-10	<0.00223	<0.00613	<0.00532	<0.01634	BDL	26.7	0.372J	13	13
SB-4 19-20'	10/23/2007	19-20	<0.00255	<0.00704	<0.0061	<0.01874	BDL	25.2	0.334J	<1.26	<1.26
SB-4 30-31'	10/23/2007	30-31	<0.00239	<0.00659	0.00828J	<0.01755	BDL	29.8	0.354J	<1.18	<1.18
SB-5/MW-2 9-10'	10/23/2007	9-10	<0.00229	<0.00631	<0.00547	<0.01680	BDL	12	0.368J	<1.13	<1.13
SB-5/MW-2 19-20'	10/23/2007	19-20	<0.0025	<0.00689	<0.00598	<0.01836	BDL	20.9	0.331J	<1.24	<1.24
SB-5/MW-2 33-34'	10/23/2007	33-34	<0.00216	<0.00596	<0.00517	<0.01589	BDL	35	0.330J	320	320
SB-6/MW-3 9-10'	10/24/2007	9-10	<0.00222	<0.00612	<0.00531	<0.01631	BDL	20.5	0.241J	<1.1	<1.1
SB-6/MW-3 19-20'	10/24/2007	19-20	<0.00209	<0.00574	<0.00498	<0.01531	BDL	14.1	0.315J	<1.03	<1.03
SB-6/MW-3 31-32'	10/24/2007	31-32	<0.00253	<0.00697	<0.00604	<0.01856	BDL	43.1	0.330J	250	250

TABLE IV

SUMMARY OF SOIL ANALYTICAL DATA - BTEX/TPH/CHLORIDES
Owen #9 Assessment
Eunice, NM

SAMPLE ID	DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	CHLORIDE (mg/kg)	TPH (8015 Modified)		
									TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH (GRO/DRO) (mg/kg)
New Mexico Oil Conservation Division Recommended Remediation Action Levels (Total Ranking Score >19)											
			10 mg/Kg	—	—	—	50.0 mg/Kg	—	—	—	100 mg/Kg
Soil Boring Samples											
SB-7/MW-4 9-10'	10/24/2007	9-10	<0.00258	<0.00711	<0.00617	<0.01895	BDL	24.2	0.352J	26	26
SB-7/MW-4 19-20'	10/24/2007	19-20	<0.00206	<0.00569	<0.00493	<0.01516	BDL	1080	0.358J	15	15
SB-7/MW-4 29-30'	10/24/2007	29-30	<0.00263	<0.00726	<0.00629	<0.01933	BDL	217	0.389J	410	410
MW-5 20'	9/22/2010	20	<0.0021	<0.0021	<0.0021	<0.0054	BDL	98.1	<0.200	11	11
MW-5 25'	9/22/2010	25	<0.0022	<0.0022	<0.0022	<.0.0055	BDL	132	<0.200	8.2	8.2
MW-5 35'	9/22/2010	35	<0.0023	<0.0023	<0.0023	<0.0056	BDL	172	<0.200	<4.6	BDL
MW-6 20'	9/22/2010	20'	<0.0021	<0.0021	<0.0021	<0.0052	BDL	71.6	<0.200	<4.2	BDL
MW-6 30'	9/22/2010	30	<0.0022	<0.0022	<0.0022	<0.0056	BDL	108	<0.200	11	11
MW-6 35'	9/22/2010	35	<0.0020	<0.0020	<0.0020	<0.0051	BDL	57.5	<0.200	7.8	7.8
MW-7 5'	9/22/2010	5	<0.0021	<0.0021	<0.0021	<0.0053	BDL	11.5	<0.200	<4.2	BDL
MW-7 10'	9/22/2010	10	<0.0020	<0.0020	<0.0020	<0.0051	BDL	30.9	<0.200	<4.2	BDL
MW-7 35'	9/22/2010	35	<0.0022	<0.0022	<0.0022	<0.0055	BDL	14.1	<0.200	<4.4	BDL

TABLE IV

SUMMARY OF SOIL ANALYTICAL DATA - BTEX/TPH/CHLORIDES
Owen #9 Assessment
Eunice, NM

SAMPLE ID	DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	CHLORIDE (mg/kg)	TPH (8015 Modified)		
									TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH (GRO/DRO) (mg/kg)
New Mexico Oil Conservation Division Recommended Remediation Action Levels (Total Ranking Score >19)											
			10 mg/Kg	---	---	---	50.0 mg/Kg	---	---	---	100 mg/Kg
Soil Boring Samples											
MW-8 30'-35'	9/12/2011	30-35	<0.00109	<0.00219	<0.00109	<0.00328	BDL	309	<16.4	31	60
MW-8 40'-45'	9/12/2011	40-45	<0.00117	<0.00233	<0.00117	<0.00333	BDL	275	<17.6	<17.6	BDL
MW-8 45-50	9/12/2011	45-50	<0.00111	<0.00222	<0.00111	<0.00333	BDL	105	<16.6	<16.6	BDL
MW-9 30-35	9/12/2011	30-35	<0.00107	<0.00215	<0.00107	<0.00322	BDL	20.5	<16.1	<16.1	BDL
MW-9 35-40	9/12/2011	35-40	<0.00109	<0.00218	<0.00109	<0.00327	BDL	33.7	<16.4	<16.4	BDL
MW-9 45-50	9/12/2011	45-50	<0.00124	<0.00249	<0.00124	<0.00373	BDL	522	<18.7	<18.7	BDL
RW-1 10-15	9/13/2011	10-15	<0.00104	<0.00208	<0.00104	<0.00312	BDL	10.4	<15.6	<15.6	BDL
RW-1 30-35	9/13/2011	30-35	<0.00106	<0.00212	<0.00106	<0.00318	BDL	93.5	<15.9	<15.9	BDL
RW-1 40-45	9/13/2011	40-45	<0.00134	<0.00268	<0.00134	<0.00402	BDL	3770	<20.3	<20.3	BDL

TABLE V

SUMMARY OF FIELD DUPLICATE SAMPLE RESULTS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN # 9
LEA COUNTY, TX

Date	Original Sample ID	Sample Result (mg/L)	Duplicate Sample ID	Sample Result (mg/L)	RPD
11/1/2007	MW-4	193	DUP	193	0.00
		6360		6170	3.03
		180		189	4.88
		12100		12800	5.62
4/25/2008	MW-4	195	DUP	191	2.07
		5680		5540	2.50
		163		163	0.00
9/16/2008	MW-4	196	DUP	202	3.02
		4420		4210	4.87
		136		135	0.74
		8140		7940	2.49
4/21/2009	MW-1	212	DUP	200	5.83
		1320		1740	27.45
		207		181	13.40
		2860		3720	26.14
10/27/09	MW-4	196	DUP	209	6.42
		5070		1520	107.74
		173		73.4	80.84
		10800		2810	117.41
2/25/10	MW-1	163	DUP	163	0.00
		5210		5320	2.09
		207		204	1.46
		11900		11300	5.17
6/30/10	MW-4	204	DUP	202	0.99
		3640		3310	9.50
		124		124	0.00
		6530		6480	0.77
8/31/10	MW-4	205	DUP	207	0.97
		3520		3520	0.00
		121		125	3.25
		6480		6480	0.00

11/22/10	MW-6	**198**	DUP	**193**	**2.56**
		589		**551**	**6.67**
		310		**302**	**2.61**
		1710		**1720**	**0.58**
3/10/11	MW-6	**212**	DUP	**236**	**10.71**
		745		**664**	**11.50**
		284		**262**	**8.06**
		1840		**1940**	**5.29**
6/3/11	MW-6	**232**	DUP	**220**	**5.31**
		796		**797**	**0.13**
		296		**299**	**1.01**
		2270		**3290**	**36.69**
8/23/11	MW-2	**220**	DUP	**180**	**20.00**
		242		**249**	**2.85**
		197		**201**	**2.01**
		837		**1160**	**32.35**
12/16/11	MW-3	**209**	DUP	**208**	**0.48**
		335		**309**	**8.07**
		137		**126**	**8.37**
		834		**1030**	**21.03**

Analytical Report 409551

for

Conestoga Rovers & Associates

Project Manager: Desiree Crenshaw

Mark Owen #9

046121

17-MAR-11

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALII), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

17-MAR-11

Project Manager: **Desiree Crenshaw**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No: **409551**
Mark Owen #9
Project Address: Eunice, NM

Desiree Crenshaw:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 409551. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 409551 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 409551

Conestoga Rovers & Associates, Midland, TX

Mark Owen #9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-7-31011	W	Mar-10-11 13:10		409551-001
MW-6-31011	W	Mar-10-11 13:50		409551-002
MW-5-31011	W	Mar-10-11 14:10		409551-003
MW-1-31011	W	Mar-10-11 14:30		409551-004
MW-2-31011	W	Mar-10-11 14:50		409551-005
MW-4-31011	W	Mar-10-11 15:20		409551-006
MW-3-31011	W	Mar-10-11 15:05		409551-007
Trip Blank	W	Mar-10-11 00:00		409551-008
DUP-1-031011	W	Mar-10-11 00:00		409551-009

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates
Project Name: Mark Owen #9

Project ID:	*046121*	*Report Date:*	*17-MAR-11*
Work Order Number:	*409551*	*Date Received:*	*03/11/2011*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 409551

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Fri Mar-11-11 10:28 am
Report Date: 17-MAR-11
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	409551-001		409551-002		409551-003		409551-004		409551-005		409551-006	
	Field Id:	MW-7-31011		MW-6-31011		MW-5-31011		MW-1-31011		MW-2-31011		MW-4-31011	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Mar-10-11 13:10		Mar-10-11 13:50		Mar-10-11 14:10		Mar-10-11 14:30		Mar-10-11 14:50		Mar-10-11 15:20	
Alkalinity by SM2320B	*Extracted:*												
	Analyzed:	Mar-14-11 11:55		Mar-14-11 11:55		Mar-14-11 11:55		Mar-14-11 11:55		Mar-14-11 11:55		Mar-14-11 11:55	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		200	4.00	212	4.00	310	4.00	160	4.00	240	4.00	280	4.00
Anions by E300	*Extracted:*												
	Analyzed:	Mar-11-11 17:19		Mar-11-11 17:19		Mar-11-11 17:19		Mar-11-11 17:19		Mar-11-11 17:19		Mar-11-11 17:19	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		798	12.5	745	12.5	7530	100	15500	500	194	5.00	36900	2500
Sulfate		252	12.5	284	12.5	582	100	1350	500	120	5.00	5970	2500
BTEX by EPA 8021B	*Extracted:*	Mar-15-11 14:20		Mar-15-11 14:20		Mar-15-11 14:20		Mar-15-11 14:20		Mar-15-11 14:20		Mar-15-11 14:20	
	Analyzed:	Mar-16-11 21:09		Mar-16-11 21:32		Mar-16-11 21:54		Mar-16-11 22:17		Mar-16-11 22:39		Mar-16-11 23:02	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m_p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total Xylenes		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
TDS by SM2540C	*Extracted:*												
	Analyzed:	Mar-14-11 14:15		Mar-14-11 14:15		Mar-14-11 14:15		Mar-14-11 14:15		Mar-14-11 14:15		Mar-14-11 14:15	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		1880	5.00	1840	5.00	12700	5.00	26000	5.00	2290	5.00	63200	5.00

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 409551

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Fri Mar-11-11 10:28 am
Report Date: 17-MAR-11
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	409551-007		409551-008		409551-009					
	Field Id:	MW-3-31011		Trip Blank		DUP-1-031011					
	Depth:										
	Matrix:	WATER		WATER		WATER					
	Sampled:	Mar-10-11 15:05		Mar-10-11 00:00		Mar-10-11 00:00					
Alkalinity by SM2320B	*Extracted:*										
	Analyzed:	Mar-14-11 11:55				Mar-14-11 11:55					
	Units/RL:	mg/L	RL			mg/L	RL				
Alkalinity, Total (as CaCO3)		220	4.00			236	4.00				
Anions by E300	*Extracted:*										
	Analyzed:	Mar-11-11 17:19				Mar-11-11 17:19					
	Units/RL:	mg/L	RL			mg/L	RL				
Chloride		292	5.00			664	12.5				
Sulfate		98.2	5.00			262	12.5				
BTEX by EPA 8021B	*Extracted:*	Mar-15-11 14:20		Mar-15-11 14:20		Mar-15-11 14:20					
	Analyzed:	Mar-16-11 23:24		Mar-16-11 20:47		Mar-16-11 23:47					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Benzene		ND	0.0010	ND	0.0010	ND	0.0010				
Toluene		ND	0.0020	ND	0.0020	ND	0.0020				
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010				
m_p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020				
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010				
Total Xylenes		ND	0.0010	ND	0.0010	ND	0.0010				
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010				
TDS by SM2540C	*Extracted:*										
	Analyzed:	Mar-14-11 14:15				Mar-14-11 14:15					
	Units/RL:	mg/L	RL			mg/L	RL				
Total dissolved solids		1560	5.00			1940	5.00				

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 409551,

Project ID: 046121

Lab Batch #: 848136 **Sample:** 598239-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 18:30

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 848136 **Sample:** 598239-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 18:53

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 848136 **Sample:** 598239-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 20:01

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 848136 **Sample:** 409551-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 20:47

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 848136 **Sample:** 409551-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 21:09

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 409551,

Project ID: 046121

Lab Batch #: 848136 **Sample:** 409551-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 21:32

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 848136 **Sample:** 409551-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 21:54

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 848136 **Sample:** 409551-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 22:17

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 848136 **Sample:** 409551-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 22:39

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 848136 **Sample:** 409551-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 23:02

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 409551,

Project ID: 046121

Lab Batch #: 848136 **Sample:** 409551-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 23:24

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 848136 **Sample:** 409551-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/16/11 23:47

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 848136 **Sample:** 409551-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/17/11 00:10

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 848136 **Sample:** 409551-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/17/11 00:33

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Blank Spike Recovery

Project Name: Mark Owen #9

Work Order #: 409551 **Project ID:** 046121

Lab Batch #: 847586 **Sample:** 847586-1-BKS **Matrix:** Water

Date Analyzed: 03/14/2011 **Date Prepared:** 03/14/2011 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

Alkalinity by SM2320B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
Alkalinity, Total (as CaCO3)	<4.00	200	170	85	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Final 1.000

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 409551 **Project ID:** 046121

Analyst: ASA **Date Prepared:** 03/15/2011 **Date Analyzed:** 03/16/2011

Lab Batch ID: 848136 **Sample:** 598239-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.104	104	0.100	0.101	101	3	70-125	25	
Toluene	<0.00200	0.100	0.105	105	0.100	0.102	102	3	70-125	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.103	103	2	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.211	106	0.200	0.207	104	2	70-131	25	
o-Xylene	<0.00100	0.100	0.108	108	0.100	0.106	106	2	71-133	25	

Analyst: LATCOR **Date Prepared:** 03/11/2011 **Date Analyzed:** 03/11/2011

Lab Batch ID: 847510 **Sample:** 847510-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.500	10.0	10.2	102	10.0	10.5	105	3	80-120	20	
Sulfate	<0.500	10.0	10.5	105	10.0	10.7	107	2	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Final 1.000

XENCO Laboratories

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 409551 **Project ID:** 046121

Analyst: WRU **Date Prepared:** 03/14/2011 **Date Analyzed:** 03/14/2011

Lab Batch ID: 847751 **Sample:** 847751-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

TDS by SM2540C	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total dissolved solids	<5.00	1000	904	90	1000	948	95	5	80-120	30	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Mark Owen #9

Work Order #: 409551
Lab Batch #: 847510
Project ID: 046121
Date Analyzed: 03/11/2011
Date Prepared: 03/11/2011
Analyst: LATCOR
QC- Sample ID: 409551-001 S
Batch #: 1
Matrix: Water
Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	798	250	1010	85	80-120	
Sulfate	252	250	529	111	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Final 1.000

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen #9

Work Order # : 409551 **Project ID:** 046121

Lab Batch ID: 848136 **QC- Sample ID:** 409551-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 03/17/2011 **Date Prepared:** 03/15/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0986	99	0.100	0.0984	98	0	70-125	25	
Toluene	<0.00200	0.100	0.100	100	0.100	0.100	100	0	70-125	25	
Ethylbenzene	<0.00100	0.100	0.100	100	0.100	0.101	101	1	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.199	100	0.200	0.199	100	0	70-131	25	
o-Xylene	<0.00100	0.100	0.103	103	0.100	0.102	102	1	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Mark Owen #9

Work Order #: 409551

Lab Batch #: 847586 **Project ID:** 046121

Date Analyzed: 03/14/2011 11:55 **Date Prepared:** 03/14/2011 **Analyst:** WRU

QC- Sample ID: 409551-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	200	204	2	20	

Lab Batch #: 847510

Date Analyzed: 03/11/2011 17:19 **Date Prepared:** 03/11/2011 **Analyst:** LATCOR

QC- Sample ID: 409551-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Anions by E300 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	798	770	4	20	
Sulfate	252	251	0	20	

Lab Batch #: 847751

Date Analyzed: 03/14/2011 14:15 **Date Prepared:** 03/14/2011 **Analyst:** WRU

QC- Sample ID: 409551-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	1880	1950	4	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Desiree Crenshaw
Company Name: CRA
Company Address: 2135 S Loop 250 W
City/State/Zip: Midland, TX, 79701
Telephone No: 432-686-0086 Fax No: 432-686-0186
Sampler Signature:

Project Name: Mark Ower #9
Project #: 041121
Project Loc: Eunice, NM
PO #:
Report Format: ☐ Standard ☐ TRRP ☐ NPDES
e-mail: Dcrenshaw@craworld.com

(lab use only)
ORDER #: 409551

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 418.1 8015M	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	TDS SM 2510C	Temp	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	MW-7-31011			3-10-11	1310		3			x2				1		GW			X						X			X			
	MW-6-31011			3-10-11	1350		3			2				1		GW			X						X			X			
	MW-5-31011			3-10-11	1410		3			2				1		GW			X						X			X			
	MW-1-31011			3-10-11	1430		3			2				1		GW			X						X			X			
	MW-2-31011			3-10-11	1450		3			2				1		GW			X						X			X			
	MW-4-31011			3-10-11	1520		3			2				1		GW			X						X			X			
	MW-3-31011			3-10-11	1505		3			2				1		GW			X						X			X			
	Trip blank						3																		X						
	Temp Blank			—	—																							X			
	Dup-1-03101			3-10-11			3			2				1		GW			X						X			X			

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	3-11-11	1000			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
	11Mar-11	1028	Lisa Murdock	3-11-11	1028

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: 1.6 °C

Final 1.000

XENCO Laboratories	XENCO Laboratories Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa	Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: CRA

Date/Time: 3-11-11 10:28

Lab ID #: 409551

Initials: RM

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	1.6 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 418731

for

Conestoga Rovers & Associates

Project Manager: Desiree Crenshaw

Mark Owen #9

046121

10-JUN-11

Collected By: Client

XENCO Laboratories

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

XENCO Laboratories

10-JUN-11

Project Manager: **Desiree Crenshaw**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No: **418731**
Mark Owen #9
Project Address: Eunice, NM

Desiree Crenshaw:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 418731. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 418731 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 418731

Conestoga Rovers & Associates, Midland, TX

Mark Owen #9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1 060311	W	Jun-03-11 11:33		418731-001
MW-2 060311	W	Jun-03-11 11:42		418731-002
MW-3 060311	W	Jun-03-11 11:53		418731-003
MW-4 060311	W	Jun-03-11 12:08		418731-004
MW-5 060311	W	Jun-03-11 12:55		418731-005
MW-6 060311	W	Jun-03-11 12:32		418731-006
MW-7 060311	W	Jun-03-11 12:20		418731-007
DUP-1	W	Jun-03-11 00:00		418731-008

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates
Project Name: Mark Owen #9

Project ID:	*046121*	*Report Date:*	*10-JUN-11*
Work Order Number:	*418731*	*Date Received:*	*06/03/2011*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-858946 Anions by E300
E300MI

Batch 858946, Chloride recovered above QC limits in the Matrix Spike.
Samples affected are: 418731-005, -007, -001, -002, -003, -008, -004, -006.
The Laboratory Control Sample for Chloride is within laboratory Control Limits

Certificate of Analysis Summary 418731

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Fri Jun-03-11 02:59 pm
Report Date: 10-JUN-11
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	418731-001		418731-002		418731-003		418731-004		418731-005		418731-006	
	Field Id:	MW-1 060311		MW-2 060311		MW-3 060311		MW-4 060311		MW-5 060311		MW-6 060311	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Jun-03-11 11:33		Jun-03-11 11:42		Jun-03-11 11:53		Jun-03-11 12:08		Jun-03-11 12:55		Jun-03-11 12:32	
Alkalinity by SM2320B	*Extracted:*												
	Analyzed:	Jun-06-11 14:25		Jun-06-11 14:25		Jun-06-11 14:25		Jun-06-11 14:25		Jun-06-11 14:25		Jun-06-11 14:25	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		172	4.00	260	4.00	224	4.00	228	4.00	288	4.00	232	4.00
Anions by E300	*Extracted:*												
	Analyzed:	Jun-06-11 10:47		Jun-06-11 10:47		Jun-06-11 10:47		Jun-06-11 10:47		Jun-06-11 10:47		Jun-06-11 10:47	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		14000	250	229	5.00	307	5.00	35600	500	6480	100	796	12.5
Sulfate		258	250	144	5.00	102	5.00	575	500	376	100	296	12.5
BTEX by EPA 8021B	*Extracted:*	Jun-08-11 14:30		Jun-08-11 14:30		Jun-08-11 14:30		Jun-08-11 14:30		Jun-08-11 14:30		Jun-08-11 14:30	
	Analyzed:	Jun-09-11 04:12		Jun-09-11 04:34		Jun-09-11 04:57		Jun-09-11 06:50		Jun-09-11 07:12		Jun-09-11 07:35	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m_p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total Xylenes		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
TDS by SM2540C	*Extracted:*												
	Analyzed:	Jun-06-11 16:00		Jun-06-11 16:00		Jun-06-11 16:00		Jun-06-11 16:00		Jun-06-11 16:00		Jun-06-11 16:00	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		26800	5.00	1150	5.00	948	5.00	51300	5.00	13400	5.00	2270	5.00

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 418731

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Fri Jun-03-11 02:59 pm
Report Date: 10-JUN-11
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	418731-007				418731-008							
	Field Id:	MW-7 060311				DUP-1							
	Depth:												
	Matrix:	WATER				WATER							
	Sampled:	Jun-03-11 12:20				Jun-03-11 00:00							
Alkalinity by SM2320B	*Extracted:*												
	Analyzed:	Jun-09-11 10:00				Jun-09-11 10:00							
	Units/RL:	mg/L	RL			mg/L	RL						
Alkalinity, Total (as CaCO3)		220	4.00			220	4.00						
Anions by E300	*Extracted:*												
	Analyzed:	Jun-06-11 10:47				Jun-06-11 10:47							
	Units/RL:	mg/L	RL			mg/L	RL						
Chloride		353	5.00			797	12.5						
Sulfate		116	5.00			299	12.5						
BTEX by EPA 8021B	*Extracted:*	Jun-08-11 14:30				Jun-08-11 14:30							
	Analyzed:	Jun-09-11 07:58				Jun-09-11 08:20							
	Units/RL:	mg/L	RL			mg/L	RL						
Benzene		ND	0.0010			ND	0.0010						
Toluene		ND	0.0020			ND	0.0020						
Ethylbenzene		ND	0.0010			ND	0.0010						
m_p-Xylenes		ND	0.0020			ND	0.0020						
o-Xylene		ND	0.0010			ND	0.0010						
Total Xylenes		ND	0.0010			ND	0.0010						
Total BTEX		ND	0.0010			ND	0.0010						
TDS by SM2540C	*Extracted:*												
	Analyzed:	Jun-06-11 16:00				Jun-07-11 16:30							
	Units/RL:	mg/L	RL			mg/L	RL						
Total dissolved solids		1040	5.00			3290	5.00						

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

LOD Limit of Detection

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 418731,

Project ID: 046121

Lab Batch #: 859279 **Sample:** 604704-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/08/11 23:41

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 859279 **Sample:** 604704-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 00:03

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120	

Lab Batch #: 859279 **Sample:** 604704-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 01:11

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 859279 **Sample:** 418731-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 04:12

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 859279 **Sample:** 418731-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 04:34

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 418731,

Project ID: 046121

Lab Batch #: 859279 **Sample:** 418731-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 04:57

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 859279 **Sample:** 418804-002 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 05:19

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

Lab Batch #: 859279 **Sample:** 418804-002 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 05:41

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 859279 **Sample:** 418731-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 06:50

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 859279 **Sample:** 418731-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 07:12

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 418731,

Project ID: 046121

Lab Batch #: 859279 **Sample:** 418731-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 07:35

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 859279 **Sample:** 418731-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 07:58

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 859279 **Sample:** 418731-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/11 08:20

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Blank Spike Recovery

Project Name: Mark Owen #9

Work Order #: 418731 **Project ID:** 046121

Lab Batch #: 858803 **Sample:** 858803-1-BKS **Matrix:** Water

Date Analyzed: 06/06/2011 **Date Prepared:** 06/06/2011 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

Alkalinity by SM2320B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
Alkalinity, Total (as CaCO3)	<4.00	200	170	85	80-120	

Lab Batch #: 859385 **Sample:** 859385-1-BKS **Matrix:** Water

Date Analyzed: 06/09/2011 **Date Prepared:** 06/09/2011 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

Alkalinity by SM2320B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
Alkalinity, Total (as CaCO3)	<4.00	200	162	81	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

XENCO Laboratories

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 418731 **Project ID:** 046121

Analyst: ASA **Date Prepared:** 06/08/2011 **Date Analyzed:** 06/08/2011

Lab Batch ID: 859279 **Sample:** 604704-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.102	102	0.100	0.101	101	1	70-125	25	
Toluene	<0.00200	0.100	0.0951	95	0.100	0.0943	94	1	70-125	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.105	105	0	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.203	102	0.200	0.202	101	0	70-131	25	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.0985	99	3	71-133	25	

Analyst: LATCOR **Date Prepared:** 06/06/2011 **Date Analyzed:** 06/06/2011

Lab Batch ID: 858946 **Sample:** 858946-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.500	10.0	10.5	105	10.0	10.4	104	1	80-120	20	
Sulfate	<0.500	10.0	11.0	110	10.0	10.5	105	5	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 418731 **Project ID:** 046121

Analyst: WRU **Date Prepared:** 06/06/2011 **Date Analyzed:** 06/06/2011

Lab Batch ID: 858969 **Sample:** 858969-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

TDS by SM2540C	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	**Blank Sample Result [A]**	**Spike Added [B]**	**Blank Spike Result [C]**	**Blank Spike %R [D]**	**Spike Added [E]**	**Blank Spike Duplicate Result [F]**	**Blk. Spk Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
Total dissolved solids	<5.00	1000	960	96	1000	996	100	4	80-120	30	

Analyst: WRU **Date Prepared:** 06/07/2011 **Date Analyzed:** 06/07/2011

Lab Batch ID: 859266 **Sample:** 859266-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

TDS by SM2540C	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	**Blank Sample Result [A]**	**Spike Added [B]**	**Blank Spike Result [C]**	**Blank Spike %R [D]**	**Spike Added [E]**	**Blank Spike Duplicate Result [F]**	**Blk. Spk Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
Total dissolved solids	<5.00	1000	984	98	1000	994	99	1	80-120	30	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Mark Owen #9

Work Order #: 418731
Lab Batch #: 858946
Project ID: 046121
Date Analyzed: 06/06/2011
Date Prepared: 06/06/2011
Analyst: LATCOR
QC- Sample ID: 418731-001 S
Batch #: 1
Matrix: Water
Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	14000	5000	20200	124	80-120	X
Sulfate	258	5000	5300	101	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen #9

Work Order # : 418731 **Project ID:** 046121

Lab Batch ID: 859279 **QC- Sample ID:** 418804-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/09/2011 **Date Prepared:** 06/08/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0118	0.100	0.102	90	0.100	0.0993	88	3	70-125	25	
Toluene	<0.00200	0.100	0.0847	85	0.100	0.0829	83	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0934	93	0.100	0.0929	93	1	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.179	90	0.200	0.180	90	1	70-131	25	
o-Xylene	<0.00100	0.100	0.0916	92	0.100	0.0891	89	3	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Mark Owen #9

Work Order #: 418731

Lab Batch #: 858803 **Project ID:** 046121

Date Analyzed: 06/06/2011 14:25 **Date Prepared:** 06/06/2011 **Analyst:** WRU

QC- Sample ID: 417989-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	268	276	3	20	

Lab Batch #: 859385

Date Analyzed: 06/09/2011 10:00 **Date Prepared:** 06/09/2011 **Analyst:** WRU

QC- Sample ID: 418731-007 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	220	228	4	20	

Lab Batch #: 858946

Date Analyzed: 06/06/2011 10:47 **Date Prepared:** 06/06/2011 **Analyst:** LATCOR

QC- Sample ID: 418731-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	14000	14000	0	20	
Sulfate	258	262	2	20	
Bromide	<250	<250	0	20	
Nitrate as N	58.0	57.5	1	20	
Ortho-Phosphate	<125	<125	0	20	

Lab Batch #: 858969

Date Analyzed: 06/06/2011 16:00 **Date Prepared:** 06/06/2011 **Analyst:** WRU

QC- Sample ID: 418630-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

TDS by SM2540C	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	314	286	9	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Sample Duplicate Recovery

Project Name: Mark Owen #9

Work Order #: 418731

Lab Batch #: 859266 **Project ID:** 046121

Date Analyzed: 06/07/2011 16:30 **Date Prepared:** 06/07/2011 **Analyst:** WRU

QC- Sample ID: 418731-008 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	3290	3170	4	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: DESIREE GRESHAM
Company Name: CRA
Company Address: 2135 S Loop 250 West
City/State/Zip: MIDLAND, TX 79703
Telephone No: 432-686-0086 Fax No:
Sampler Signature:
e-mail:

Project Name: MARIS OWEN #9
Project #: 046121
Project Loc: EUNICE, NM
PO #:
Report Format: [x] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 418731

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TOTAL: TPH: 418.1 8015M	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO_4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	TDS	N.O.R.M.	Cl 300.0	SO_4	Alkalinity	RUSH TAT (Pre-Schedule) 24-48-72 hrs	Standard TAT
001	MW-1			6-3-11	1133		3		X						GW									X			X	X	X		X
002	MW-2			6-3-11	1145		3																								
003	MW-3			6-3-11	1153		3																								
004	MW-4			6-3-11	1208		3																								
005	MW-5			6-3-11	1755		3																								
006	MW-6			6-3-11	1232		3																								
007	MW-7			6-3-11	1220		3																								
008	DUP-1			6-3-11	—		3																								

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	6-3-11	1459			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Andrea Olam	Date 6-3-11	Time 14:59

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

500 ml poly (40 ml vials)

Temperature Upon Receipt: 0.1 °C

XENCO Laboratories	XENCO Laboratories Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa	Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: CRA

Date/Time: 6.3.11 14:59

Lab ID # : 418731

Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	~~Water~~	No	
2. Shipping container in good condition?	Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	Yes	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Yes	No		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	N/A	
17. VOC sample have zero head space?	Yes	No	N/A	

18. Cooler 1 No.			Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	c	°C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 426522

for

Conestoga Rovers & Associates

Project Manager: Desiree Crenshaw

Mark Owen #9

046121

01-SEP-11

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

XENCO Laboratories

01-SEP-11

Project Manager: **Desiree Crenshaw**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No: **426522**
Mark Owen #9
Project Address: Eunice, NM

Desiree Crenshaw:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 426522. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 426522 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron II

Odessa Laboratory Manager

Sample Cross Reference 426522

Conestoga Rovers & Associates, Midland, TX

Mark Owen #9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW5082411	W	08-24-11 11:40		426522-001
MW6082411	W	08-24-11 11:47		426522-002
MW7082411	W	08-24-11 11:53		426522-003
MW4082411	W	08-24-11 12:00		426522-004
MW3082411	W	08-24-11 12:05		426522-005
MW2082411	W	08-24-11 12:10		426522-006
MW1082411	W	08-24-11 12:15		426522-007
Dup 1	W	08-24-11 00:00		426522-008

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates
Project Name: Mark Owen #9

Project ID:	*046121*	*Report Date:*	*01-SEP-11*
Work Order Number:	*426522*	*Date Received:*	*08/25/2011*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 426522

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Thu Aug-25-11 04:36 pm
Report Date: 01-SEP-11
Project Manager: Brent Barron II

Analysis Requested													
	Lab Id:	426522-001		426522-002		426522-003		426522-004		426522-005		426522-006	
	Field Id:	MW5082411		MW6082411		MW7082411		MW4082411		MW3082411		MW2082411	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Aug-24-11 11:40		Aug-24-11 11:47		Aug-24-11 11:53		Aug-24-11 12:00		Aug-24-11 12:05		Aug-24-11 12:10	
BTEX by EPA 8021B	***Extracted:***	Aug-30-11 14:00		Aug-30-11 14:00		Aug-30-11 14:00		Aug-30-11 14:00		Aug-30-11 14:00		Aug-30-11 14:00	
	Analyzed:	Aug-30-11 17:18		Aug-30-11 17:41		Aug-30-11 18:04		Aug-30-11 18:27		Aug-30-11 18:50		Aug-30-11 19:13	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m_p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100

Brent Barron II
Odessa Laboratory Manager

Certificate of Analysis Summary 426522

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Thu Aug-25-11 04:36 pm
Report Date: 01-SEP-11
Project Manager: Brent Barron II

Analysis Requested	*Lab Id:*	426522-007		426522-008					
	Field Id:	MW1082411		Dup 1					
	Depth:								
	Matrix:	WATER		WATER					
	Sampled:	Aug-24-11 12:15		Aug-24-11 00:00					
BTEX by EPA 8021B	*Extracted:*	Aug-30-11 14:00		Aug-30-11 14:00					
	Analyzed:	Aug-30-11 19:35		Aug-30-11 19:59					
	Units/RL:	mg/L	RL	mg/L	RL				
Benzene		ND	0.00100	ND	0.00100				
Toluene		ND	0.00200	ND	0.00200				
Ethylbenzene		ND	0.00100	ND	0.00100				
m_p-Xylenes		ND	0.00200	ND	0.00200				
o-Xylene		ND	0.00100	ND	0.00100				
Total Xylenes		ND	0.00100	ND	0.00100				
Total BTEX		ND	0.00100	ND	0.00100				

Brent Barron II
Odessa Laboratory Manager

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 426522,

Project ID: 046121

Lab Batch #: 868866 **Sample:** 426522-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 17:18

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 868866 **Sample:** 426522-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 17:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 868866 **Sample:** 426522-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 18:04

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 868866 **Sample:** 426522-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 18:27

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 868866 **Sample:** 426522-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 18:50

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 426522,

Project ID: 046121

Lab Batch #: 868866 **Sample:** 426522-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 19:13

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 868866 **Sample:** 426522-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 19:35

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 868866 **Sample:** 426522-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 19:59

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 868866 **Sample:** 610758-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 16:55

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0256	0.0300	85	80-120	

Lab Batch #: 868866 **Sample:** 610758-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 14:56

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen #9

Work Orders : 426522,

Project ID: 046121

Lab Batch #: 868866 **Sample:** 610758-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 15:46

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 868866 **Sample:** 426490-002 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 21:07

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 868866 **Sample:** 426490-002 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/30/11 21:29

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 426522
Analyst: ASA
Lab Batch ID: 868866
Sample: 610758-1-BKS
Units: mg/L

Date Prepared: 08/30/2011
Batch #: 1

Project ID: 046121
Date Analyzed: 08/30/2011
Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.119	119	0.100	0.114	114	4	70-125	25	
Toluene	<0.00200	0.100	0.105	105	0.100	0.104	104	1	70-125	25	
Ethylbenzene	<0.00100	0.100	0.114	114	0.100	0.112	112	2	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.235	118	0.200	0.232	116	1	70-131	25	
o-Xylene	<0.00100	0.100	0.105	105	0.100	0.105	105	0	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen #9

Work Order # : 426522 **Project ID:** 046121

Lab Batch ID: 868866 **QC- Sample ID:** 426490-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/30/2011 **Date Prepared:** 08/30/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.109	109	0.100	0.117	117	7	70-125	25	
Toluene	<0.00200	0.100	0.0971	97	0.100	0.104	104	7	70-125	25	
Ethylbenzene	<0.00100	0.100	0.106	106	0.100	0.113	113	6	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.210	105	0.200	0.221	111	5	70-131	25	
o-Xylene	<0.00100	0.100	0.0974	97	0.100	0.105	105	8	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Final 1.000

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Desiree Crenshaw
Company Name: CRA
Company Address: 2135 S Loop 250 West
City/State/Zip: Midland Tx 79701
Telephone No: 432-686-0086 Fax No: 432-686-0186
Sampler Signature:

Project Name: Markowen #9
Project #: 046121
Project Loc: Eunice NM
PO #:
Report Format: ☐ Standard ☐ TRRP ☐ NPDES
e-mail: Dcrenshaw@craworld.com

(lab use only)
ORDER #: 426522

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 8015B 8015M 418.1	TOTAL: TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
001	MW5 082411			8-24-11	1140		2			X						GW									X				
002	MW6 082411			8-24-11	1147		2			X						GW									X				
003	MW7 082411			8-24-11	1153		2			X						GW									X				
004	MW4 082411			8-24-11	1200		2			X						GW									X				
005	MW3 082411			8-24-11	1205		2			X						GW									X				
006	MW2 082411			8-24-11	1210		2			X						GW									X				
007	MW1 082411			8-24-11	1215		2			X						GW									X				
008	Dup1			8-24-11	—		2			X						GW									X				
																GW													

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Brian Hughes	8-25-11	1636			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Lisa Hunduck	Date 8-25-11	Time 16:36

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	
by Courier? UPS DHL FedEx Lone Star		
Voas		
Temperature Upon Receipt: 4.6 °C		

XENCO Laboratories

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Conestoga Rovers
Date/Time: 8-25-11 16:36
Lab ID # : 426522
Initials: KM

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	4.6 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 433637

for

Conestoga Rovers & Associates

Project Manager: Desiree Crenshaw

Owen #9

046121

28-DEC-11

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

28-DEC-11

Project Manager: **Desiree Crenshaw**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No: **433637**
Owen #9
Project Address: Lea County, NM

Desiree Crenshaw:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 433637. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 433637 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron II
Odessa Laboratory Manager

Sample Cross Reference 433637

Conestoga Rovers & Associates, Midland, TX

Owen #9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW1 121611	W	12-16-11 14:40		433637-001
RW1 121611	W	12-16-11 15:10		433637-002
Dup 121611	W	12-16-11 00:00		433637-003
MW4 121611	W	12-16-11 13:50		433637-004
MW6 121611	W	12-16-11 13:15		433637-005
MW8 121611	W	12-16-11 15:40		433637-006
MW9 121611	W	12-16-11 15:25		433637-007
MW3 121611	W	12-16-11 14:10		433637-008
MW7 121611	W	12-16-11 13:30		433637-009
MW2 121611	W	12-16-11 14:20		433637-010
MW5 121611	W	12-16-11 13:05		433637-011

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates
Project Name: Owen #9

Project ID:	*046121*	*Report Date:*	*28-DEC-11*
Work Order Number:	*433637*	*Date Received:*	*12/19/2011*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-877990 BTEX by EPA 8021B
SW8021BM

Batch 877990, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 615950-1-BLK.

Certificate of Analysis Summary 433637

Conestoga Rovers & Associates, Midland, TX

Project Name: Owen #9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Lea County, NM

Date Received in Lab: Mon Dec-19-11 01:00 pm
Report Date: 28-DEC-11
Project Manager: Brent Barron II

Analysis Requested													
	Lab Id:	433637-001		433637-002		433637-003		433637-004		433637-005		433637-006	
	Field Id:	MW1 121611		RW1 121611		Dup 121611		MW4 121611		MW6 121611		MW8 121611	
	Depth:												
	Matrix:	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	
	Sampled:	Dec-16-11 14:40		Dec-16-11 15:10		Dec-16-11 00:00		Dec-16-11 13:50		Dec-16-11 13:15		Dec-16-11 15:40	
Alkalinity by SM2320B SUB: E871002	*Extracted:*												
	Analyzed:	Dec-20-11 20:23		Dec-20-11 20:29		Dec-20-11 20:35		Dec-20-11 20:54		Dec-20-11 21:00		Dec-20-11 21:06	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		148	4.00	177	4.00	208	4.00	172	4.00	215	4.00	196	4.00
Anions by E300	*Extracted:*												
	Analyzed:	Dec-20-11 18:44		Dec-20-11 18:44		Dec-20-11 18:44		Dec-20-11 18:44		Dec-20-11 18:44		Dec-20-11 18:44	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		15800	500	18000	500	309	10.0	33700	2500	715	12.5	3440	50.0
Sulfate		665	500	661	500	126	10.0	ND	2500	334	12.5	706	50.0
BTEX by EPA 8021B	*Extracted:*	Dec-22-11 13:30		Dec-22-11 13:30		Dec-22-11 13:30		Dec-22-11 13:30		Dec-22-11 13:30		Dec-22-11 13:30	
	Analyzed:	Dec-23-11 07:54		Dec-23-11 08:16		Dec-23-11 08:39		Dec-23-11 09:01		Dec-23-11 09:23		Dec-23-11 09:46	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m_p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
TDS by SM2540C SUB: E871002	*Extracted:*												
	Analyzed:	Dec-20-11 13:00		Dec-20-11 13:00		Dec-20-11 13:00		Dec-20-11 13:00		Dec-20-11 13:00		Dec-20-11 13:00	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		31000	5.00	32200	5.00	1030	5.00	68500	5.00	1920	5.00	8010	5.00

Brent Barron II
Odessa Laboratory Manager

Certificate of Analysis Summary 433637

Conestoga Rovers & Associates, Midland, TX

Project Name: Owen #9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Lea County, NM

Date Received in Lab: Mon Dec-19-11 01:00 pm
Report Date: 28-DEC-11
Project Manager: Brent Barron II

Analysis Requested											
	Lab Id:	433637-007		433637-008		433637-009		433637-010		433637-011	
	Field Id:	MW9 121611		MW3 121611		MW7 121611		MW2 121611		MW5 121611	
	Depth:										
	Matrix:	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	
	Sampled:	Dec-16-11 15:25		Dec-16-11 14:10		Dec-16-11 13:30		Dec-16-11 14:20		Dec-16-11 13:05	
Alkalinity by SM2320B SUB: E871002	*Extracted:*										
	Analyzed:	Dec-20-11 21:12		Dec-20-11 21:18		Dec-21-11 16:05		Dec-21-11 16:17		Dec-21-11 16:23	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		291	4.00	209	4.00	214	4.00	297	4.00	286	4.00
Anions by E300	*Extracted:*										
	Analyzed:	Dec-20-11 18:44		Dec-20-11 18:44		Dec-20-11 18:44		Dec-20-11 18:44		Dec-20-11 18:44	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		6660	100	335	10.0	618	12.5	223	5.00	5200	100
Sulfate		362	100	137	10.0	237	12.5	167	5.00	279	100
BTEX by EPA 8021B	*Extracted:*	Dec-22-11 13:30		Dec-22-11 13:30		Dec-22-11 13:30		Dec-22-11 13:30		Dec-22-11 13:30	
	Analyzed:	Dec-23-11 11:39		Dec-23-11 12:01		Dec-23-11 12:24		Dec-23-11 12:47		Dec-23-11 13:09	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.0241	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m_p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		0.0241	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
TDS by SM2540C SUB: E871002	*Extracted:*										
	Analyzed:	Dec-20-11 13:00		Dec-20-11 13:00		Dec-20-11 13:00		Dec-20-11 13:00		Dec-20-11 13:00	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		14700	5.00	834	5.00	1620	5.00	828	5.00	10500	5.00

Brent Barron II
Odessa Laboratory Manager

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation. ^ NELAC or State program does not offer Accreditation at this time.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Owen #9

Work Orders : 433637,

Project ID: 046121

Lab Batch #: 877990 **Sample:** 433637-001 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 07:54

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 877990 **Sample:** 433637-002 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 08:16

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	

Lab Batch #: 877990 **Sample:** 433637-003 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 08:39

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 877990 **Sample:** 433637-004 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 09:01

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 877990 **Sample:** 433637-005 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 09:23

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Owen #9

Work Orders : 433637,

Project ID: 046121

Lab Batch #: 877990 **Sample:** 433637-006 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 09:46

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 877990 **Sample:** 433637-007 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 11:39

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0250	0.0300	83	80-120	

Lab Batch #: 877990 **Sample:** 433637-008 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 12:01

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 877990 **Sample:** 433637-009 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 12:24

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 877990 **Sample:** 433637-010 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 12:47

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Owen #9

Work Orders : 433637,

Project ID: 046121

Lab Batch #: 877990 **Sample:** 433637-011 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/23/11 13:09

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	

Lab Batch #: 877990 **Sample:** 615950-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 12/22/11 15:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0228	0.0300	76	80-120	*

Lab Batch #: 877990 **Sample:** 615950-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 12/22/11 14:09

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 877990 **Sample:** 615950-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 12/22/11 14:32

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 877990 **Sample:** 433616-013 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 12/23/11 10:08

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Owen #9

Work Orders : 433637,

Project ID: 046121

Lab Batch #: 877990 **Sample:** 433616-013 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 12/23/11 10:31

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0244	0.0300	81	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

BS / BSD Recoveries

Project Name: Owen #9

Work Order #: 433637 **Project ID:** 046121

Analyst: MAB **Date Prepared:** 12/20/2011 **Date Analyzed:** 12/20/2011

Lab Batch ID: 877505 **Sample:** 877505-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Alkalinity by SM2320B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	<4.00	250	254	102	250	255	102	0	80-120	20	

Analyst: MAB **Date Prepared:** 12/21/2011 **Date Analyzed:** 12/21/2011

Lab Batch ID: 877613 **Sample:** 877613-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Alkalinity by SM2320B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	<4.00	250	253	101	250	253	101	0	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Owen #9

Work Order #: 433637 **Project ID:** 046121

Analyst: ASA **Date Prepared:** 12/22/2011 **Date Analyzed:** 12/22/2011

Lab Batch ID: 877990 **Sample:** 615950-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0976	98	0.100	0.105	105	7	70-125	25	
Toluene	<0.00200	0.100	0.0989	99	0.100	0.107	107	8	70-125	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.113	113	7	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.211	106	0.200	0.226	113	7	70-131	25	
o-Xylene	<0.00100	0.100	0.104	104	0.100	0.111	111	7	71-133	25	

Analyst: BRB **Date Prepared:** 12/20/2011 **Date Analyzed:** 12/20/2011

Lab Batch ID: 877494 **Sample:** 877494-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.500	10.0	10.6	106	10.0	10.5	105	1	80-120	20	
Sulfate	<0.500	12.3	12.2	99	12.3	12.1	98	1	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Owen #9

Work Order #: 433637 **Project ID:** 046121

Analyst: MAB **Date Prepared:** 12/20/2011 **Date Analyzed:** 12/20/2011

Lab Batch ID: 877547 **Sample:** 877547-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TDS by SM2540C **Analytes**	**Blank Sample Result [A]**	**Spike Added [B]**	**Blank Spike Result [C]**	**Blank Spike %R [D]**	**Spike Added [E]**	**Blank Spike Duplicate Result [F]**	**Blk. Spk Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
Total dissolved solids	<5.00	1000	1020	102	1000	1030	103	1	80-120	30	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Owen #9

Work Order #: 433637

Lab Batch #: 877494 **Project ID:** 046121

Date Analyzed: 12/20/2011 **Date Prepared:** 12/20/2011 **Analyst:** BRB

QC- Sample ID: 433637-010 S **Batch #:** 1 **Matrix:** Ground Water

Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	223	100	323	100	80-120	
Sulfate	167	100	264	97	80-120	

Lab Batch #: 877494

Date Analyzed: 12/20/2011 **Date Prepared:** 12/20/2011 **Analyst:** BRB

QC- Sample ID: 433722-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	71.5	100	168	97	80-120	
Sulfate	159	100	262	103	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Owen #9

Work Order # : 433637 **Project ID:** 046121

Lab Batch ID: 877990 **QC- Sample ID:** 433616-013 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 12/23/2011 **Date Prepared:** 12/22/2011 **Analyst:** ASA

Reporting Units: mg/L

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B Analytes	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**Spiked Sample %R [D]**	**Spike Added [E]**	**Duplicate Spiked Sample Result [F]**	**Spiked Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
Benzene	<0.00100	0.100	0.105	105	0.100	0.0911	91	14	70-125	25	
Toluene	<0.00200	0.100	0.103	103	0.100	0.0906	91	13	70-125	25	
Ethylbenzene	0.00120	0.100	0.106	105	0.100	0.0927	92	13	71-129	25	
m_p-Xylenes	0.00248	0.200	0.196	97	0.200	0.171	84	14	70-131	25	
o-Xylene	<0.00100	0.100	0.103	103	0.100	0.0882	88	15	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Owen #9

Work Order #: 433637

Lab Batch #: 877505 **Project ID:** 046121

Date Analyzed: 12/20/2011 18:43 **Date Prepared:** 12/20/2011 **Analyst:** MAB

QC- Sample ID: 433402-004 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	314	313	0	20	

Lab Batch #: 877505

Date Analyzed: 12/20/2011 20:11 **Date Prepared:** 12/20/2011 **Analyst:** MAB

QC- Sample ID: 433413-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	219	218	0	20	

Lab Batch #: 877613

Date Analyzed: 12/21/2011 16:11 **Date Prepared:** 12/21/2011 **Analyst:** MAB

QC- Sample ID: 433637-009 D **Batch #:** 1 **Matrix:** Ground Water

Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	214	216	1	20	

Lab Batch #: 877613

Date Analyzed: 12/21/2011 17:35 **Date Prepared:** 12/21/2011 **Analyst:** MAB

QC- Sample ID: 433791-005 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	293	293	0	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Sample Duplicate Recovery

Project Name: Owen #9

Work Order #: 433637

Lab Batch #: 877613 **Project ID:** 046121

Date Analyzed: 12/21/2011 15:53 **Date Prepared:** 12/21/2011 **Analyst:** MAB

QC- Sample ID: 433793-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	106	106	0	20	

Lab Batch #: 877494

Date Analyzed: 12/20/2011 18:44 **Date Prepared:** 12/20/2011 **Analyst:** BRB

QC- Sample ID: 433722-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Anions by E300 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	71.5	72.5	1	20	
Sulfate	159	160	1	20	

Lab Batch #: 877547

Date Analyzed: 12/20/2011 13:00 **Date Prepared:** 12/20/2011 **Analyst:** MAB

QC- Sample ID: 433447-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	1510	1440	5	30	

Lab Batch #: 877547

Date Analyzed: 12/20/2011 13:00 **Date Prepared:** 12/20/2011 **Analyst:** MAB

QC- Sample ID: 433447-002 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	160	154	4	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Desiree Crenshaw
Company Name: CRA
Company Address: 2135 S Loop 250 W
City/State/Zip: Midland TX 79703
Telephone No: 432-686-0086 Fax No: 686 0186
Sampler Signature:
e-mail:

Project Name: Owen #9
Project #: 046121
Project Loc: Lea County, NM
PO #:
Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 433637

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	TDS			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	MW1 121611			12/16/11	1440		3			X				X		GW				X					X			X				
02	RW1 121611			12/16/11	1510		3			X				X		GW				X					X			X				
03	Dup 121611			12/16/11	—		3			X				X		GW				X					X			X				
04	MW4 121611			12/16/11	1350		3			X				X		GW				X					X			X				
05	MW6 121611			12/16/11	1315		3			X				X		GW				X					X			X				
06	MW8 121611			12/16/11	1540		3			X				X		GW				X					X			X				
07	MW9 121611			12/16/11	1525		3			X				X		GW				X					X			X				
08	MW3 121611			12/16/11	1410		3			X				X		GW				X					X			X				
09	MW7 121611			12/16/11	1330		3			X				X		GW				X					X			X				
10	MW2 121611			12/16/11	1420		3			X				X		GW				X					X			X				

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	12-14-11	1300			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				12-14-11	1300

Laboratory Comments:

Sample Containers Intact?	N
VOCs Free of Headspace?	N
Labels on container(s)	N
Custody seals on container(s)	N
Custody seals on cooler(s)	N
Sample Hand Delivered	N
by Sampler/Client Rep. ?	
by Courier? UPS DHL FedEx Lone Star	
Temperature Upon Receipt:	5 °C

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Desiree Crenshaw
Project Name: Owen # 9
Company Name: CRA
Project #: 046121
Company Address: 2135 S. Loop 250 W
Project Loc: Lea County, NM
City/State/Zip: Midland, TX 79703
PO #:
Telephone No: 432-686-0086
Fax No: 686-0186
Report Format: ☐ Standard ☐ TRRP ☐ NPDES
Sampler Signature:
e-mail:

(lab use only)
ORDER #: 433637

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge; GW=Groundwater S=Soil/Solid; NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	TOTAL: BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	TDS		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
11	MW5 12/6/11			12/16/11	1305		3			X				X		GW				X					X			X			

Special Instructions:

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 5 °C

Relinquished by:	Date	Time	Received by:	Date	Time
	12-19-11	1300			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				12-19-11	1300

Prelogin / Nonconformance Report - Sample Log-In

Client: CRA

Date/Time: 12.19.11 13:00

Lab ID #: 433637

Initials: BB

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	(Yes)	No	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	5 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 426307

for

Conestoga Rovers & Associates

Project Manager: Desiree Crenshaw

Mark Owen #9

046121

31-AUG-11

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

XENCO Laboratories

31-AUG-11

Project Manager: **Desiree Crenshaw**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No: **426307**
Mark Owen #9
Project Address: Eunice, NM

Desiree Crenshaw:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 426307. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 426307 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron II
Odessa Laboratory Manager

Sample Cross Reference 426307

Conestoga Rovers & Associates, Midland, TX

Mark Owen #9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW 1 082311	W	08-23-11 12:56		426307-001
MW 2 082311	W	08-23-11 12:35		426307-002
MW 3 082311	W	08-23-11 12:19		426307-003
MW 4 082311	W	08-23-11 12:05		426307-004
MW 7 082311	W	08-23-11 11:47		426307-005
MW 6 082311	W	08-23-11 11:27		426307-006
MW 5 082311	W	08-23-11 11:10		426307-007
Dup 1	W	08-23-11 00:00		426307-008

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates
Project Name: Mark Owen #9

Project ID:	*046121*	*Report Date:*	*31-AUG-11*
Work Order Number:	*426307*	*Date Received:*	*08/23/2011*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 426307

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Tue Aug-23-11 04:25 pm
Report Date: 31-AUG-11
Project Manager: Brent Barron II

Analysis Requested													
	Lab Id:	426307-001		426307-002		426307-003		426307-004		426307-005		426307-006	
	Field Id:	MW 1 082311		MW 2 082311		MW 3 082311		MW 4 082311		MW 7 082311		MW 6 082311	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Aug-23-11 12:56		Aug-23-11 12:35		Aug-23-11 12:19		Aug-23-11 12:05		Aug-23-11 11:47		Aug-23-11 11:27	
Alkalinity by SM2320B	*Extracted:*												
	Analyzed:	Aug-26-11 12:50		Aug-26-11 13:18		Aug-26-11 13:38		Aug-26-11 13:50		Aug-26-11 14:00		Aug-26-11 14:06	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		140	4.00	220	4.00	160	4.00	170	4.00	190	4.00	160	4.00
Anions by E300	*Extracted:*												
	Analyzed:	Aug-24-11 13:59		Aug-24-11 13:59		Aug-24-11 13:59		Aug-24-11 13:59		Aug-24-11 13:59		Aug-24-11 13:59	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		14200	500	242	12.5	101	10.0	39400	2500	872	25.0	891	25.0
Sulfate		886	500	197	12.5	53.7	10.0	3690	2500	324	25.0	372	25.0
TDS by SM2540C	*Extracted:*												
	Analyzed:	Aug-30-11 09:00		Aug-30-11 09:00		Aug-30-11 09:00		Aug-30-11 09:00		Aug-30-11 09:00		Aug-30-11 09:00	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids		28500	5.00	837	5.00	290	5.00	90800	5.00	2730	5.00	2530	5.00

Brent Barron II
Odessa Laboratory Manager

Certificate of Analysis Summary 426307

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen #9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Tue Aug-23-11 04:25 pm
Report Date: 31-AUG-11
Project Manager: Brent Barron II

Analysis Requested									
	Lab Id:	426307-007		426307-008					
	Field Id:	MW 5 082311		Dup 1					
	Depth:								
	Matrix:	WATER		WATER					
	Sampled:	Aug-23-11 11:10		Aug-23-11 00:00					
Alkalinity by SM2320B	*Extracted:*								
	Analyzed:	Aug-26-11 14:30		Aug-26-11 14:45					
	Units/RL:	mg/L	RL	mg/L	RL				
Alkalinity, Total (as CaCO3)		242	4.00	180	4.00				
Anions by E300	*Extracted:*								
	Analyzed:	Aug-24-11 13:59		Aug-24-11 13:59					
	Units/RL:	mg/L	RL	mg/L	RL				
Chloride		7380	250	249	12.5				
Sulfate		545	250	201	12.5				
TDS by SM2540C	*Extracted:*								
	Analyzed:	Aug-30-11 09:00		Aug-30-11 09:00					
	Units/RL:	mg/L	RL	mg/L	RL				
Total dissolved solids		15900	5.00	1160	5.00				

Brent Barron II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

BS / BSD Recoveries

Project Name: Mark Owen #9

Work Order #: 426307 **Project ID:** 046121

Analyst: MAB **Date Prepared:** 08/26/2011 **Date Analyzed:** 08/26/2011

Lab Batch ID: 868474 **Sample:** 868474-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Alkalinity by SM2320B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	<4.00	250	260	104	250	260	104	0	80-120	20	

Analyst: BRB **Date Prepared:** 08/24/2011 **Date Analyzed:** 08/24/2011

Lab Batch ID: 868298 **Sample:** 868298-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.500	10.0	10.6	106	10.0	10.7	107	1	80-120	20	
Sulfate	<0.500	12.3	12.1	98	12.3	12.2	99	1	80-120	20	

Analyst: MAB **Date Prepared:** 08/30/2011 **Date Analyzed:** 08/30/2011

Lab Batch ID: 868717 **Sample:** 868717-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TDS by SM2540C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total dissolved solids	<5.00	1000	974	97	1000	968	97	1	80-120	30	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Final 1.000

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Mark Owen #9

Work Order #: 426307
Lab Batch #: 868298
Project ID: 046121
Date Analyzed: 08/24/2011
Date Prepared: 08/24/2011
Analyst: BRB
QC- Sample ID: 426294-001 S
Batch #: 1
Matrix: Water
Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	314	250	568	102	80-120	
Sulfate	545	250	795	100	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Mark Owen #9

Work Order # 426307

Lab Batch #: 868474 **Project ID:** 046121

Date Analyzed: 08/26/2011 13:30 **Date Prepared:** 08/26/2011 **Analyst:** MAB

QC- Sample ID: 426307-002 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	220	220	0	20	

Lab Batch #: 868474

Date Analyzed: 08/26/2011 14:52 **Date Prepared:** 08/26/2011 **Analyst:** MAB

QC- Sample ID: 426307-008 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	180	174	3	20	

Lab Batch #: 868298

Date Analyzed: 08/24/2011 13:59 **Date Prepared:** 08/24/2011 **Analyst:** BRB

QC- Sample ID: 426294-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	314	314	0	20	
Sulfate	545	546	0	20	

Lab Batch #: 868717

Date Analyzed: 08/30/2011 09:00 **Date Prepared:** 08/30/2011 **Analyst:** MAB

QC- Sample ID: 426307-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

TDS by SM2540C	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	28500	29100	2	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Mark Owen #9

Work Order # 426307

Lab Batch #: 868717 **Project ID:** 046121

Date Analyzed: 08/30/2011 09:00 **Date Prepared:** 08/30/2011 **Analyst:** MAB

QC- Sample ID: 426517-005 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

	SAMPLE / SAMPLE DUPLICATE RECOVERY				
TDS by SM2540C **Analyte**	**Parent Sample Result [A]**	**Sample Duplicate Result [B]**	**RPD**	**Control Limits %RPD**	**Flag**
Total dissolved solids	15700	15700	0	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Desiree Crenshaw
Company Name: CRA
Company Address: 2135 S. Loop 250 West
City/State/Zip: Midland TX 79701
Telephone No: 432-686-0086 Fax No: 4326860186
Sampler Signature:

Project Name: Mark Owen #9
Project #: 046121
Project Loc: Eunice NM
PO #:
Report Format: ☐ Standard ☐ TRRP ☐ NPDES
e-mail: Dcrenshaw@craworld.com

(lab use only)
ORDER #: 426307

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Total Alkalinity	TDS SM 2540C	Chlorides Sulfates	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	MW1 082311			8-23-11	1256									X		GW												X	X	X		X
02	MW2 082311			8-23-11	1235									X		GW												X	X	X		X
03	MW3 082311			8-23-11	1219									X		GW												X	X	X		X
04	MW4 082311			8-23-11	1205									X		GW												X	X	X		X
05	MW7 082311			8-23-11	1147									X		GW												X	X	X		X
06	MW6 082311			8-23-11	1127									X		GW												X	X	X		X
07	MW5 082311			8-23-11	1110									X		GW												X	X	X		X
08	Dup 1			8-23-11	—									X		GW												X	X	X		X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Tice Hughes	8-23-11	1625			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Andrea Cline	8-23-11	1625

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star		

500ml poly

Temperature Upon Receipt: 2.1 °C

XENCO Laboratories

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: CRA
Date/Time: 8.23.11 16:25
Lab ID # : 426307
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	No	(N/A)	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	2.1 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 427602

for

Conestoga Rovers & Associates

Project Manager: Desiree Crenshaw

Mark Owen # 9

046121

23-SEP-11

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

XENCO Laboratories

23-SEP-11

Project Manager: **Desiree Crenshaw**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No: **427602**
Mark Owen # 9
Project Address: Eunice, NM

Desiree Crenshaw:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 427602. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 427602 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron II
Odessa Laboratory Manager

Sample Cross Reference 427602

Conestoga Rovers & Associates, Midland, TX

Mark Owen # 9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-8 30-35'	S	09-12-11 13:54	30 - 35 ft	427602-001
MW-8 40-45'	S	09-12-11 14:09	40 - 45 ft	427602-002
MW-8 45-50'	S	09-12-11 14:11	45 - 50 ft	427602-003
MW-9 30-35'	S	09-12-11 10:43	30 - 35 ft	427602-004
MW-9 35-40'	S	09-12-11 10:46	35 - 40 ft	427602-005
MW-9 45-50'	S	09-12-11 10:51	45 - 50 ft	427602-006
RW-1 10-15'	S	09-13-11 09:19	10 - 15 ft	427602-007
RW-1 30-35'	S	09-13-11 09:34	30 - 35 ft	427602-008
RW-1 40-45'	S	09-13-11 09:14	40 - 45 ft	427602-009
MW-8	W	09-12-11 14:30		427602-010
MW-9	W	09-12-11 11:30		427602-011
RW-1	W	09-13-11 11:00		427602-012

CASE NARRATIVE

XENCO Laboratories

Client Name: Conestoga Rovers & Associates
Project Name: Mark Owen # 9

Project ID:	*046121*	*Report Date:*	*23-SEP-11*
Work Order Number:	*427602*	*Date Received:*	*09/14/2011*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-870225 Inorganic Anions by EPA 300/300.1
E300

Batch 870225, Sulfate recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Chloride recovered below QC limits in the Matrix Spike.
Samples affected are: 427602-010, -012, -011.
The Laboratory Control Sample for Chloride , Sulfate is within laboratory Control Limits

Batch: LBA-870246 BTEX by EPA 8021B
SW8021BM

Batch 870246, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 611514-1-BSD.

SW8021BM

Batch 870246, Toluene, o-Xylene recovered below QC limits in the Matrix Spike.
Samples affected are: 427602-004, -001, -007, -009, -003, -006, -008, -002, -005.
The Laboratory Control Sample for Toluene, o-Xylene is within laboratory Control Limits

Batch: LBA-870355 TPH by Texas1005
SW8015MOD_NM

Batch 870355, o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 611557-1-BLK.

Batch: LBA-870367 TPH by Texas1005
SW8015MOD_NM

Batch 870367, o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 611571-1-BKS,611571-1-BLK,611571-1-BSD,427602-001,427602-002.

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates
Project Name: Mark Owen # 9

Project ID:	*046121*	*Report Date:*	*23-SEP-11*
Work Order Number:	*427602*	*Date Received:*	*09/14/2011*

Batch: LBA-870495 TPH by Texas1005
SW8015MOD_NM

Batch 870495, o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 611643-1-BKS,611643-1-BLK,427697-007 SD,427602-005,427602-004,427602-006,427602-003.

Batch: LBA-870512 TPH by SW8015 Mod
SW8015MOD_NM

Batch 870512, o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 611650-1-BKS,611650-1-BLK,427602-008,427602-009,427602-007.

Certificate of Analysis Summary 427602

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen # 9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Wed Sep-14-11 12:05 pm
Report Date: 23-SEP-11
Project Manager: Brent Barron II

Analysis Requested													
	Lab Id:	427602-001		427602-002		427602-003		427602-004		427602-005		427602-006	
	Field Id:	MW-8 30-35'		MW-8 40-45'		MW-8 45-50'		MW-9 30-35'		MW-9 35-40'		MW-9 45-50'	
	Depth:	30-35 ft		40-45 ft		45-50 ft		30-35 ft		35-40 ft		45-50 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-12-11 13:54		Sep-12-11 14:09		Sep-12-11 14:11		Sep-12-11 10:43		Sep-12-11 10:46		Sep-12-11 10:51	
Anions by E300	*Extracted:*												
	Analyzed:	Sep-15-11 18:54		Sep-15-11 18:54		Sep-22-11 11:58		Sep-22-11 11:58		Sep-22-11 11:58		Sep-22-11 11:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		309	8.40	275	9.86	105	4.68	20.5	4.52	33.7	4.61	522	10.4
BTEX by EPA 8021B	*Extracted:*	Sep-16-11 15:13		Sep-16-11 15:13		Sep-16-11 15:13		Sep-16-11 15:13		Sep-16-11 15:13		Sep-16-11 15:13	
	Analyzed:	Sep-16-11 19:26		Sep-16-11 19:49		Sep-16-11 20:12		Sep-16-11 20:35		Sep-16-11 20:58		Sep-16-11 21:21	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00109	ND	0.00117	ND	0.00111	ND	0.00107	ND	0.00109	ND	0.00124
Toluene		ND	0.00219	ND	0.00233	ND	0.00222	ND	0.00215	ND	0.00218	ND	0.00249
Ethylbenzene		ND	0.00109	ND	0.00117	ND	0.00111	ND	0.00107	ND	0.00109	ND	0.00124
m_p-Xylenes		ND	0.00219	ND	0.00233	ND	0.00222	ND	0.00215	ND	0.00218	ND	0.00249
o-Xylene		ND	0.00109	ND	0.00117	ND	0.00111	ND	0.00107	ND	0.00109	ND	0.00124
Total Xylenes		ND	0.00109	ND	0.00117	ND	0.00111	ND	0.00107	ND	0.00109	ND	0.00124
Total BTEX		ND	0.00109	ND	0.00117	ND	0.00111	ND	0.00107	ND	0.00109	ND	0.00124
Percent Moisture	*Extracted:*												
	Analyzed:	Sep-15-11 10:40		Sep-15-11 10:40		Sep-15-11 10:40		Sep-15-11 10:40		Sep-15-11 10:40		Sep-15-11 10:40	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		8.83	1.00	14.8	1.00	10.2	1.00	6.99	1.00	8.83	1.00	19.6	1.00
TPH By SW8015 Mod	*Extracted:*	Sep-15-11 10:50		Sep-15-11 10:50		Sep-15-11 17:07		Sep-15-11 17:10		Sep-15-11 17:13		Sep-15-11 17:16	
	Analyzed:	Sep-21-11 05:25		Sep-21-11 05:48		Sep-20-11 22:47		Sep-20-11 23:11		Sep-20-11 23:34		Sep-20-11 23:57	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	16.4	ND	17.6	ND	16.6	ND	16.1	ND	16.4	ND	18.7
C12-C28 Diesel Range Hydrocarbons		31.0	16.4	ND	17.6	ND	16.6	ND	16.1	ND	16.4	ND	18.7
C28-C35 Oil Range Hydrocarbons		29.0	16.4	ND	17.6	ND	16.6	ND	16.1	ND	16.4	ND	18.7
Total TPH		60.0	16.4	ND	17.6	ND	16.6	ND	16.1	ND	16.4	ND	18.7

Brent Barron II
Odessa Laboratory Manager

Certificate of Analysis Summary 427602

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen # 9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Wed Sep-14-11 12:05 pm
Report Date: 23-SEP-11
Project Manager: Brent Barron II

Analysis Requested													
	Lab Id:	427602-007		427602-008		427602-009		427602-010		427602-011		427602-012	
	Field Id:	RW-1 10-15'		RW-1 30-35'		RW-1 40-45'		MW-8		MW-9		RW-1	
	Depth:	10-15 ft		30-35 ft		40-45 ft							
	Matrix:	SOIL		SOIL		SOIL		WATER		WATER		WATER	
	Sampled:	Sep-13-11 09:19		Sep-13-11 09:34		Sep-13-11 09:14		Sep-12-11 14:30		Sep-12-11 11:30		Sep-13-11 11:00	
Alkalinity by SM2320B SUB: E871002	*Extracted:*												
	Analyzed:							Sep-20-11 13:38		Sep-20-11 13:44		Sep-20-11 13:50	
	Units/RL:							mg/L	RL	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)								194	4.00	261	4.00	156	4.00
Anions by E300	*Extracted:*												
	Analyzed:	Sep-22-11 11:58		Sep-22-11 11:58		Sep-22-11 11:58							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		10.4	8.79	93.5	4.46	3770	56.8						
BTEX by EPA 8021B	*Extracted:*	Sep-16-11 15:13		Sep-16-11 15:13		Sep-16-11 15:13		Sep-16-11 08:33		Sep-16-11 08:33		Sep-16-11 08:33	
	Analyzed:	Sep-16-11 21:44		Sep-16-11 22:07		Sep-16-11 22:30		Sep-16-11 13:33		Sep-16-11 13:56		Sep-16-11 14:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00104	ND	0.00106	ND	0.00134	ND	0.00100	0.00457	0.00100	ND	0.00100
Toluene		ND	0.00208	ND	0.00212	ND	0.00268	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00104	ND	0.00106	ND	0.00134	ND	0.00100	ND	0.00100	ND	0.00100
m_p-Xylenes		ND	0.00208	ND	0.00212	ND	0.00268	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00104	ND	0.00106	ND	0.00134	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00104	ND	0.00106	ND	0.00134	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00104	ND	0.00106	ND	0.00134	ND	0.00100	0.00457	0.00100	ND	0.00100
Inorganic Anions by EPA 300/300.1 SUB: E871002	*Extracted:*							Sep-16-11 06:38		Sep-16-11 06:50		Sep-16-11 07:03	
	Analyzed:							Sep-16-11 06:38		Sep-16-11 06:50		Sep-16-11 07:03	
	Units/RL:							mg/L	RL	mg/L	RL	mg/L	RL
Chloride								3180	2.00	913	2.00	9820 D	4.00
Sulfate								765	2.00	104	2.00	306	2.00

Brent Barron II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 427602

Conestoga Rovers & Associates, Midland, TX

Project Name: Mark Owen # 9

Project Id: 046121
Contact: Desiree Crenshaw
Project Location: Eunice, NM

Date Received in Lab: Wed Sep-14-11 12:05 pm
Report Date: 23-SEP-11
Project Manager: Brent Barron II

Analysis Requested													
	Lab Id:	427602-007		427602-008		427602-009		427602-010		427602-011		427602-012	
	Field Id:	RW-1 10-15'		RW-1 30-35'		RW-1 40-45'		MW-8		MW-9		RW-1	
	Depth:	10-15 ft		30-35 ft		40-45 ft							
	Matrix:	SOIL		SOIL		SOIL		WATER		WATER		WATER	
	Sampled:	Sep-13-11 09:19		Sep-13-11 09:34		Sep-13-11 09:14		Sep-12-11 14:30		Sep-12-11 11:30		Sep-13-11 11:00	
Percent Moisture	*Extracted:*												
	Analyzed:	Sep-15-11 10:40		Sep-15-11 10:40		Sep-15-11 10:40							
	Units/RL:	%	RL	%	RL	%	RL						
Percent Moisture		4.47	1.00	5.74	1.00	26.1	1.00						
TDS by SM2540C SUB: E871002	*Extracted:*												
	Analyzed:							Sep-16-11 17:06		Sep-16-11 17:10		Sep-16-11 17:24	
	Units/RL:							mg/L	RL	mg/L	RL	mg/L	RL
Total dissolved solids								7680	5.00	2580	5.00	18600	5.00
TPH By SW8015 Mod	*Extracted:*	Sep-16-11 10:36		Sep-16-11 11:03		Sep-16-11 10:39		Sep-14-11 14:45		Sep-14-11 14:48		Sep-14-11 14:51	
	Analyzed:	Sep-21-11 08:31		Sep-21-11 08:54		Sep-21-11 09:17		Sep-20-11 02:19		Sep-20-11 03:01		Sep-20-11 03:22	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.6	ND	15.9	ND	20.3	ND	1.50	ND	1.50	ND	1.50
C12-C28 Diesel Range Hydrocarbons		ND	15.6	ND	15.9	ND	20.3	ND	1.50	ND	1.50	ND	1.50
C28-C35 Oil Range Hydrocarbons		ND	15.6	ND	15.9	ND	20.3	ND	1.50	ND	1.50	ND	1.50
Total TPH		ND	15.6	ND	15.9	ND	20.3	ND	1.50	ND	1.50	ND	1.50

Brent Barron II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen # 9

Work Orders : 427602,

Project ID: 046121

Lab Batch #: 870235 **Sample:** 427602-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/16/11 13:33

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 870235 **Sample:** 427602-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/16/11 13:56

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 870235 **Sample:** 427602-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/16/11 14:19

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 870246 **Sample:** 427602-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 19:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 870246 **Sample:** 427602-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 19:49

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen # 9

Work Orders : 427602,

Project ID: 046121

Lab Batch #: 870246 **Sample:** 427602-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 20:12

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 870246 **Sample:** 427602-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 20:35

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 870246 **Sample:** 427602-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 20:58

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 870246 **Sample:** 427602-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 21:21

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 870246 **Sample:** 427602-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 21:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen # 9

Work Orders : 427602,

Project ID: 046121

Lab Batch #: 870246 **Sample:** 427602-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 22:07

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 870246 **Sample:** 427602-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 22:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 870355 **Sample:** 427602-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/20/11 02:19

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.8	10.0		70-135	
o-Terphenyl	7.15	5.00		70-135	

Lab Batch #: 870355 **Sample:** 427602-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/20/11 03:01

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.6	10.0		70-135	
o-Terphenyl	7.02	5.00		70-135	

Lab Batch #: 870355 **Sample:** 427602-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/20/11 03:22

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	11.5	10.0		70-135	
o-Terphenyl	7.67	5.00		70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen # 9

Work Orders : 427602,

Project ID: 046121

Lab Batch #: 870495 **Sample:** 427602-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/20/11 22:47

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.5	118	70-135	
o-Terphenyl	76.5	49.8	154	70-135	**

Lab Batch #: 870495 **Sample:** 427602-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/20/11 23:11

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.6	115	70-135	
o-Terphenyl	73.5	49.8	148	70-135	**

Lab Batch #: 870495 **Sample:** 427602-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/20/11 23:34

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.9	116	70-135	
o-Terphenyl	74.7	50.0	149	70-135	**

Lab Batch #: 870495 **Sample:** 427602-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/20/11 23:57

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	80.2	50.0	160	70-135	**

Lab Batch #: 870367 **Sample:** 427602-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/21/11 05:25

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.7	113	70-135	
o-Terphenyl	78.0	49.9	156	70-135	**

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen # 9

Work Orders : 427602, **Project ID:** 046121

Lab Batch #: 870367 **Sample:** 427602-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/21/11 05:48

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	76.3	49.9	153	70-135	**

Lab Batch #: 870512 **Sample:** 427602-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/21/11 08:31

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.5	108	70-135	
o-Terphenyl	71.6	49.8	144	70-135	**

Lab Batch #: 870512 **Sample:** 427602-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/21/11 08:54

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.7	103	70-135	
o-Terphenyl	70.1	49.9	140	70-135	**

Lab Batch #: 870512 **Sample:** 427602-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/21/11 09:17

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	75.0	49.9	150	70-135	**

Lab Batch #: 870235 **Sample:** 611505-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/16/11 11:01

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen # 9

Work Orders : 427602, **Project ID:** 046121

Lab Batch #: 870246 **Sample:** 611514-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/16/11 19:03

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 870355 **Sample:** 611557-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/19/11 22:08

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	11.4	10.0	114	70-135	
o-Terphenyl	7.54	5.00	151	70-135	**

Lab Batch #: 870367 **Sample:** 611571-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/20/11 12:49

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	80.0	50.0	160	70-135	**

Lab Batch #: 870495 **Sample:** 611643-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/20/11 12:49

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	101	121	70-135	
o-Terphenyl	80.4	50.3	160	70-135	**

Lab Batch #: 870512 **Sample:** 611650-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/21/11 07:21

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	68.7	50.1	137	70-135	**

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen # 9

Work Orders : 427602, **Project ID:** 046121

Lab Batch #: 870235 **Sample:** 611505-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/16/11 09:28

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 870246 **Sample:** 611514-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/16/11 17:31

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 870355 **Sample:** 611557-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/19/11 22:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	15.7	20.0	79	70-135	
o-Terphenyl	10.4	10.0	104	70-135	

Lab Batch #: 870367 **Sample:** 611571-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/20/11 13:10

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	69.1	50.0	138	70-135	**

Lab Batch #: 870495 **Sample:** 611643-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/20/11 13:10

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.9	117	70-135	
o-Terphenyl	69.1	50.0	138	70-135	**

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen # 9

Work Orders : 427602, **Project ID:** 046121

Lab Batch #: 870512 **Sample:** 611650-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/21/11 07:44

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	80.0	49.9	160	70-135	**

Lab Batch #: 870235 **Sample:** 611505-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/16/11 09:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 870246 **Sample:** 611514-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/16/11 17:54

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0231	0.0300	77	80-120	*

Lab Batch #: 870355 **Sample:** 611557-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/19/11 22:50

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	17.5	20.0	88	70-135	
o-Terphenyl	9.04	10.0	90	70-135	

Lab Batch #: 870367 **Sample:** 611571-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/20/11 13:31

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	70.1	50.0	140	70-135	**

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen # 9

Work Orders : 427602,

Project ID: 046121

Lab Batch #: 870235 **Sample:** 427597-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/16/11 16:22

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 870246 **Sample:** 427602-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 23:15

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 870495 **Sample:** 427697-007 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/20/11 21:38

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.9	121	70-135	
o-Terphenyl	65.1	50.0	130	70-135	

Lab Batch #: 870512 **Sample:** 427602-007 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/21/11 13:10

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	64.6	49.9	129	70-135	

Lab Batch #: 870235 **Sample:** 427597-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 09/16/11 16:45

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Mark Owen # 9

Work Orders : 427602,

Project ID: 046121

Lab Batch #: 870246 **Sample:** 427602-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/16/11 23:38

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 870495 **Sample:** 427697-007 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/20/11 22:01

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.6	121	70-135	
o-Terphenyl	69.2	49.8	139	70-135	**

Lab Batch #: 870512 **Sample:** 427602-007 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/21/11 13:34

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.4	99.8	100	70-135	
o-Terphenyl	57.5	49.9	115	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Blank Spike Recovery

Project Name: Mark Owen # 9

Work Order #: 427602 **Project ID:** 046121

Lab Batch #: 870225 **Sample:** 611499-1-BKS **Matrix:** Water

Date Analyzed: 09/16/2011 **Date Prepared:** 09/16/2011 **Analyst:** MAB

Reporting Units: mg/L **Batch #:** 1

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
Chloride	<0.200	25.0	23.9	96	80-120	
Sulfate	<0.200	25.0	23.9	96	80-120	

Lab Batch #: 870495 **Sample:** 611643-1-BKS **Matrix:** Solid

Date Analyzed: 09/20/2011 **Date Prepared:** 09/15/2011 **Analyst:** JAH

Reporting Units: mg/kg **Batch #:** 1

TPH By SW8015 Mod Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
C6-C12 Gasoline Range Hydrocarbons	<15.0	999	880	88	70-135	
C12-C28 Diesel Range Hydrocarbons	<15.0	999	1020	102	70-135	

Lab Batch #: 870512 **Sample:** 611650-1-BKS **Matrix:** Solid

Date Analyzed: 09/21/2011 **Date Prepared:** 09/16/2011 **Analyst:** JAH

Reporting Units: mg/kg **Batch #:** 1

TPH By SW8015 Mod Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
C6-C12 Gasoline Range Hydrocarbons	<15.0	998	1000	100	70-135	
C12-C28 Diesel Range Hydrocarbons	<15.0	998	1100	110	70-135	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

XENCO Laboratories

BS / BSD Recoveries

Project Name: Mark Owen # 9

Work Order #: 427602 **Project ID:** 046121

Analyst: MAB **Date Prepared:** 09/20/2011 **Date Analyzed:** 09/20/2011

Lab Batch ID: 870454 **Sample:** 870454-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Alkalinity by SM2320B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	<4.00	250	244	98	250	245	98	0	80-120	20	

Analyst: ASA **Date Prepared:** 09/16/2011 **Date Analyzed:** 09/16/2011

Lab Batch ID: 870235 **Sample:** 611505-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.104	104	0.100	0.108	108	4	70-125	25	
Toluene	<0.00200	0.100	0.0935	94	0.100	0.0973	97	4	70-125	25	
Ethylbenzene	<0.00100	0.100	0.103	103	0.100	0.108	108	5	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.205	103	0.200	0.212	106	3	70-131	25	
o-Xylene	<0.00100	0.100	0.0956	96	0.100	0.0988	99	3	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Mark Owen # 9

Work Order #: 427602 **Project ID:** 046121

Analyst: ASA **Date Prepared:** 09/16/2011 **Date Analyzed:** 09/16/2011

Lab Batch ID: 870246 **Sample:** 611514-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.106	106	0.100	0.101	101	5	70-130	35	
Toluene	<0.00200	0.100	0.0957	96	0.100	0.0904	90	6	70-130	35	
Ethylbenzene	<0.00100	0.100	0.103	103	0.100	0.0984	98	5	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.203	102	0.200	0.194	97	5	70-135	35	
o-Xylene	<0.00100	0.100	0.0950	95	0.100	0.0904	90	5	71-133	35	

Analyst: BRB **Date Prepared:** 09/15/2011 **Date Analyzed:** 09/15/2011

Lab Batch ID: 870091 **Sample:** 870091-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.840	20.0	22.1	111	20.0	22.0	110	0	75-125	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Mark Owen # 9

Work Order #: 427602 **Project ID:** 046121

Analyst: BRB **Date Prepared:** 09/22/2011 **Date Analyzed:** 09/22/2011

Lab Batch ID: 870745 **Sample:** 870745-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.840	20.0	20.2	101	20.0	20.4	102	1	75-125	20	

Analyst: TTE **Date Prepared:** 09/16/2011 **Date Analyzed:** 09/16/2011

Lab Batch ID: 870167 **Sample:** 870167-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TDS by SM2540C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total dissolved solids	<5.00	1000	992	99	1000	937	94	6	80-120	30	

Analyst: JAH **Date Prepared:** 09/14/2011 **Date Analyzed:** 09/19/2011

Lab Batch ID: 870355 **Sample:** 611557-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<1.50	100	109	109	100	91.1	91	18	70-135	25	
C12-C28 Diesel Range Hydrocarbons	<1.50	100	112	112	100	99.1	99	12	70-135	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Mark Owen # 9

Work Order #: 427602 **Project ID:** 046121

Analyst: BRB **Date Prepared:** 09/15/2011 **Date Analyzed:** 09/20/2011

Lab Batch ID: 870367 **Sample:** 611571-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	881	88	1000	860	86	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1020	102	1000	1060	106	4	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Mark Owen # 9

Work Order #: 427602

Lab Batch #: 870091 **Project ID:** 046121

Date Analyzed: 09/15/2011 **Date Prepared:** 09/15/2011 **Analyst:** BRB

QC- Sample ID: 427563-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1780	430	2230	105	75-125	

Lab Batch #: 870091

Date Analyzed: 09/15/2011 **Date Prepared:** 09/15/2011 **Analyst:** BRB

QC- Sample ID: 427592-006 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1040	517	1570	103	75-125	

Lab Batch #: 870225

Date Analyzed: 09/16/2011 **Date Prepared:** 09/16/2011 **Analyst:** MAB

QC- Sample ID: 427437-003 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	109	100	152	43	80-120	X
Sulfate	884	100	860	0	80-120	X

Lab Batch #: 870745

Date Analyzed: 09/22/2011 **Date Prepared:** 09/22/2011 **Analyst:** BRB

QC- Sample ID: 427946-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1690	518	2280	114	75-125	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS Recoveries

Project Name: Mark Owen # 9

Work Order #: 427602
Lab Batch #: 870745
Project ID: 046121
Date Analyzed: 09/22/2011
Date Prepared: 09/22/2011
Analyst: BRB
QC- Sample ID: 427946-011 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	15.0	102	114	97	75-125	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen # 9

Work Order # : 427602 **Project ID:** 046121

Lab Batch ID: 870235 **QC- Sample ID:** 427597-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 09/16/2011 **Date Prepared:** 09/16/2011 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.107	107	0.100	0.105	105	2	70-125	25	
Toluene	<0.00200	0.100	0.0962	96	0.100	0.0936	94	3	70-125	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.105	105	0	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.207	104	0.200	0.206	103	0	70-131	25	
o-Xylene	<0.00100	0.100	0.0961	96	0.100	0.0950	95	1	71-133	25	

Lab Batch ID: 870246 **QC- Sample ID:** 427602-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/16/2011 **Date Prepared:** 09/16/2011 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00110	0.110	0.0791	72	0.109	0.0928	85	16	70-130	35	
Toluene	<0.00219	0.110	0.0711	65	0.109	0.0839	77	17	70-130	35	X
Ethylbenzene	<0.00110	0.110	0.0788	72	0.109	0.0941	86	18	71-129	35	
m_p-Xylenes	<0.00219	0.219	0.153	70	0.218	0.182	83	17	70-135	35	
o-Xylene	<0.00110	0.110	0.0698	63	0.109	0.0814	75	15	71-133	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Final 1.000

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Mark Owen # 9

Work Order # : 427602 **Project ID:** 046121

Lab Batch ID: 870225 **QC- Sample ID:** 427136-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 09/16/2011 **Date Prepared:** 09/16/2011 **Analyst:** MAB

Reporting Units: mg/L

Inorganic Anions by EPA 300/300.1 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	26.7	250	266	96	250	264	95	1	80-120	20	
Sulfate	37.1	500	283	49	500	277	48	2	80-120	20	X

Lab Batch ID: 870495 **QC- Sample ID:** 427697-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/20/2011 **Date Prepared:** 09/15/2011 **Analyst:** JAH

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.9	1060	935	88	1060	860	81	8	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.9	1060	911	86	1060	923	87	1	70-135	35	

Lab Batch ID: 870512 **QC- Sample ID:** 427602-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/21/2011 **Date Prepared:** 09/16/2011 **Analyst:** JAH

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.7	1040	943	91	1040	760	73	21	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.7	1040	1020	98	1040	929	89	9	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Mark Owen # 9

Work Order #: 427602

Lab Batch #: 870454 **Project ID:** 046121

Date Analyzed: 09/20/2011 13:20 **Date Prepared:** 09/20/2011 **Analyst:** MAB

QC- Sample ID: 427560-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	11.4	11.0	4	20	

Lab Batch #: 870454

Date Analyzed: 09/20/2011 14:26 **Date Prepared:** 09/20/2011 **Analyst:** MAB

QC- Sample ID: 427641-004 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	283	284	0	20	

Lab Batch #: 870091

Date Analyzed: 09/15/2011 18:54 **Date Prepared:** 09/15/2011 **Analyst:** BRB

QC- Sample ID: 427563-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	1780	1760	1	20	

Lab Batch #: 870745

Date Analyzed: 09/22/2011 11:58 **Date Prepared:** 09/22/2011 **Analyst:** BRB

QC- Sample ID: 427946-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	1690	1670	1	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Mark Owen # 9

Work Order #: 427602

Lab Batch #: 870110 **Project ID:** 046121

Date Analyzed: 09/15/2011 10:40 **Date Prepared:** 09/15/2011 **Analyst:** BRB

QC- Sample ID: 427602-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	8.83	9.11	3	20	

Lab Batch #: 870167

Date Analyzed: 09/16/2011 17:08 **Date Prepared:** 09/16/2011 **Analyst:** TTE

QC- Sample ID: 427602-010 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	7680	7730	1	30	

Lab Batch #: 870167

Date Analyzed: 09/16/2011 17:34 **Date Prepared:** 09/16/2011 **Analyst:** TTE

QC- Sample ID: 427679-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	2600	2670	3	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Desiree' Crenshaw
Company Name: CRA
Company Address: 2135 S Loop 250 W
City/State/Zip: Midland TX 79703
Telephone No: 432 686 0086 Fax No: 432 686 0186
Sampler Signature: D C
e-mail: dcrenshaw@craworld.com

Project Name: Mark Owen #7
Project #: 46121
Project Loc: Eunice, NM
PO #:
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 427602

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice 40z g kss	HNO3	HCl 40 ml vos	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TOTAL: TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	TDS	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	MW-8	30'-35'	30'	35'	9-12-11		1	X								S	X			X					X					X
02	MW-8	40'-45'	40'	45'	9-12-11		1	X								S	X			X					X					X
03	MW-8	45'-50'	45'	50'	9-12-11		1	X								S	X			X					X					X
04	MW-9	30'-35'	30'	35'	9-12-11		1	X								S	X			X					X					X
05	MW-9	35'-40'	35'	40'	9-12-11		1	X								S	X			X					X					X
06	MW-9	45-50'	45'	50'	9-12-11		1	X								S	X			X					X					X
07	RW-1	10'-15'	10'	15'	9-13-11		1	X								S	X			X					X					X
08	RW-1	30'-35'	30'	35'	9-13-11		1	X								S	X			X					X					X
09	RW-1	40'-45'	40'	45'	9-13-11		1	X								S	X			X					X					X
10	MW-8		-	-	9-12-11		6	X		X						W	X			X					X		X	X		X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	9-14-11	1205			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Andrea Elam	Date 9.14.11	Time 12:05

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 2.5 °C

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Desiree' Crenshaw
Company Name: CRA
Company Address: 2135 S Loop 250 W
City/State/Zip: Midland TX 79703
Telephone No: 432 686 0086 Fax No: 432 686 0186
Sampler Signature: DC e-mail: dcrenshaw@craworld.com

Project Name: Mark Owen #9
Project #: 04b121
Project Loc: Quemado, NM
PO #:
Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 427602

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice 50ml pp4	HNO3	HCl 40ml VOA	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 (8015M) 8015B	TOTAL: TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	TDS		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
11	MW-9	—	—	9-12-11	1130		6	X		X						W	X			X					X			X			X
12	RW-1	—	—	9-13-11	1100		6	X		X						W	X			X					X			X			X

Special Instructions:

Laboratory Comments:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N
Labels on container(s) Y N
Custody seals on container(s) Y N
Custody seals on cooler(s) Y N
Sample Hand Delivered by Sampler/Client Rep. ? Y N
by Courier? UPS DHL FedEx Lone Star
4oz glass jar
Temperature Upon Receipt: 2.5 °C

Relinquished by:	Date	Time	Received by:	Date	Time
DC	9-14-11	1205			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Andrea Elam	Date 9.14.11	Time 12.05

XENCO Laboratories	XENCO Laboratories Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa	Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: CRA

Date/Time: 9-14-11 12:05

Lab ID # : 427602

Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	(Yes)	No	N/A	Xenco Houston
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	2.5 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

_____

Corrective Action Taken:_____

_____

_____

_____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

andrea Elam <andrea.lam@xenco.com>

Mark Owen # 9

2 messages

andrea Elam <andrea.lam@xenco.com> **Wed, Sep 14, 2011 at 1:19 PM**
To: "Crenshaw, Desiree" <dcrenshaw@craworld.com>

Desiree,

I would like to confirm our conversation that the soil samples only need Cl, 8015M, and 8021B and the water samples get the Cl, SO4, Alkalinity, 8015M, 8021B and TDS.

--
Thank you,
Andrea Elam

Xenco Laboratories
Odessa, Texas
432-563-1800

Crenshaw, Desiree <dcrenshaw@craworld.com> **Wed, Sep 14, 2011 at 1:30 PM**
To: andrea Elam <andrea.lam@xenco.com>

That is correct, Thanks

From: andrea Elam [mailto:andrea.lam@xenco.com]
Sent: Wednesday, September 14, 2011 1:20 PM
To: Crenshaw, Desiree
Subject: Mark Owen # 9

[Quoted text hidden]

SOIL BORING LOG

Project: OWEN #9
EUNICE, NEW MEXICO

No. MW-8

Client: CHEVRON ENVIROMENTAL
MANAGEMENT COMPANY

File No.: 46121
Date: 9/12/2011
Drilling Co.: WHITE DRILLING
Supervisor: J. WHITE
Type Rig: INGERSOIL AIR ROTARY T3W
Logged by: B Ford

LABORATORY TEST DATA (Results Reported in mg/kg)						FIELD DATA				BORING DATA	
Benzene	Toluene	Ethyl-benzene	Xylenes	Total TPH (C6-C35)	Chlorides	Photo-Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 1325 Finish Time:
											Silty Sand: Tan-Red, with indurated hard calcum carbonate seams, angular pieces of caliche, loose to firm, dry
						1.2	X	5			
											Silty Sand: Tan-Red, with indurated hard calcum carbonate seams, loose to firm, dry
						1.3	X	10			
						1.1	X	15			
						1.5	X	20			Sand: Medium to dark reddish brown, fine grained, 0.5- 1 inch rounded caliche fragments, loose to firm, slightly moist.
						1.2	X	25			silty sands: 25% silty sands, light to dark brown, dry Sand stone ridge: 75% angular flat sand stone, light brown,dry
						1.5	X	30			25% light brown angular sand stone with loose to firm silty sands, dry Hit water at 32 feet.
<0.00109	<0.00219	<0.00109	<0.00109	60.0	309	(1.7)		35			Second sand stone ridge: 25% reddish silty sands with white to dark tan to reddish angular flat sand stone fragments, moist
% moisture 8.83						1.7		40			

X Sampling Interval

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

Water First Noted

(1.7) Analyzed Sample

SOIL BORING LOG

Project: OWEN #9
EUNICE, NEW MEXICO

No. MW-8

Client: CHEVRON ENVIROMENTAL
MANAGEMENT COMPANY

File No.: 46121
Date: 9/12/2011
Drilling Co.: WHITE DRILLING
Supervisor: J. WHITE
Type Rig: INGERSOL AIR ROTARY T3W
Logged by: B Ford

LABORATORY TEST DATA (Results Reported in mg/kg)						FIELD DATA				BORING DATA	
Benzene	Toluene	Ethyl-benzene	Xylenes	Chlorides	Total TPH (C6-C35)	Photo-Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 1215 Finish Time: 1500
											Soft, dark, red sands intergrated with moist, firm, red clay
<0.00117	<0.00233	<0.00117	<0.00117	275	<17.6	1.9		45			Red Clay: hard/firm, slightly less moist than above
<0.00111	<0.00222	<0.00111	<0.00111	105	<16.6	1.9		50			TD at 50 feet
								55			
								60			
								65			
								70			
								75			
								80			

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

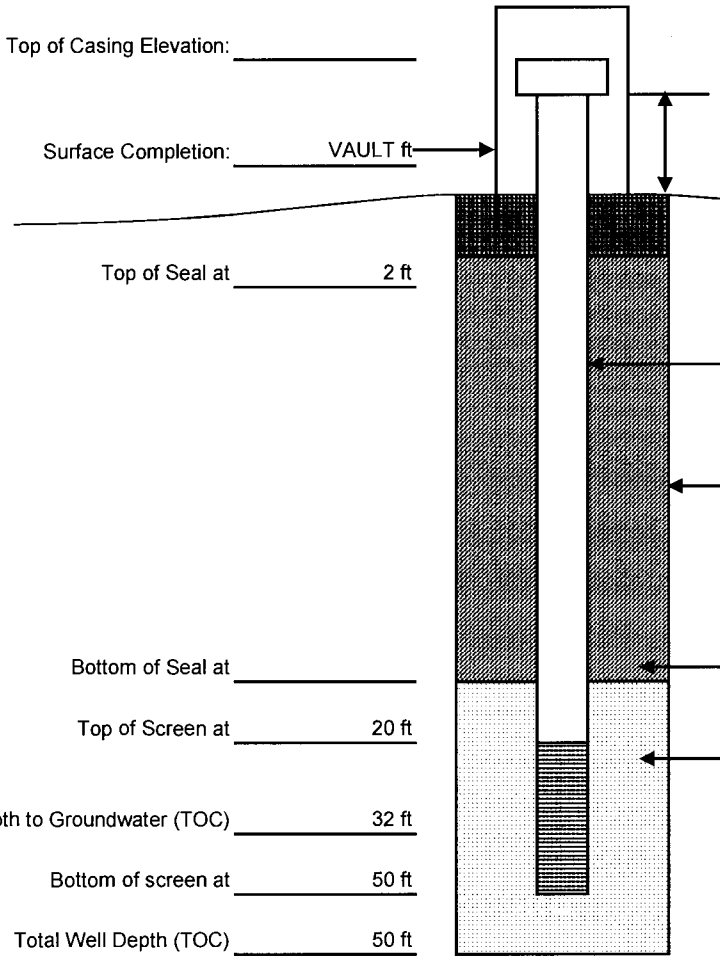
MONITORING WELL CONSTRUCTION DETAIL

Project: OWEN #9
EUNICE, NEW MEXICO

No. MW-8

Client: CHEVRON ENVIROMENTAL
MANAGEMENT COMPANY

File No.: 46121
Date: 9/12/2011
Drilling Co.: WHITE DRILLING
Supervisor: J. WHITE
Type Rig: INGERSOL AIR ROTARY T3W
Logged by: B Ford



Top of Casing Elevation: _____

Surface Completion: VAULT ft

Stick Up: _____

ground surface

Surface Seal: CEMENT

Top of Seal at 2 ft

Well Casing

Annulus Backfill Type: SAND

HOLE-PLUG,
Seal Type: BENTONITE 3/8"

Bottom of Seal at _____

Top of Screen at 20 ft

Pack Type:
Sand, size 8/16
Gravel
Natural

Depth to Groundwater (TOC) 32 ft

Bottom of screen at 50 ft

Total Well Depth (TOC) 50 ft

Note: All dimensions are below ground surface (bgs) except where noted.

Screen Type: X slotted ☐ perforated other: _____

Screen Material: ☐ stainless steel X PVC other: _____

Screen Length: 30 ft Screen Diameter: 4 inches Screen Slot Size: 0.020 inches

Well Casing Material: PVC Well Casing Diameter: 4 inches

Development - Method: Bailing Hole Diameter: _____

Duration/Volume: 1 bbl

SOIL BORING LOG

Project: OWEN #9
EUNICE, NEW MEXICO

No. MW-9

Client: CHEVRON ENVIROMENTAL
MANAGEMENT COMPANY

File No.: 46121
Date: 9/12/2011
Drilling Co.: WHITE DRILLING
Supervisor: J. WHITE
Type Rig: INGERSOIL AIR ROTARY T3W
Logged by: B Ford

LABORATORY TEST DATA (Results Reported in mg/kg)						FIELD DATA				BORING DATA	
Benzene	Toluene	Ethyl-benzene	Xylenes	Total TPH (C6-C35)	Chlorides	Photo-Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 1025 Finish Time: 1120
											Caliche 1 foot down
											50% caliche fragments, angular, 50% silty sands: fine grained, light to dark brown
						1.6	☒	5			
											40% caliche fragments, angular, 60% silty sands: fine grained, light to dark brown
						1.4	☒	10			
											25% rounded caliche fragments 0.2 to 0.5 inches; 75% fine grained sands, dry, brown to slight red tint
						0.7	☒	15			
						1.4	☒	20			Silty Sand: Medium to dark reddish brown, fine grained, loose to firm, moist.
						1.1	☒	25			
						1.5	☒	30	▽		Hit water at 31 feet.
<0.00107	<0.00215	<0.00107	<0.00107	<16.1	20.5	(1.6)		35			
% moisture 6.99											
<0.00109	<0.00218	<0.00109	<0.00109	<16.4	33.7	(1.6)		40			
% moisture 8.83											

☒ Sampling Interval

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

▽ Water First Noted

(1.6) Analyzed Sample

SOIL BORING LOG

Project: OWEN #9
EUNICE, NEW MEXICO

No. MW-9

Client: CHEVRON ENVIROMENTAL
MANAGEMENT COMPANY

File No.: 46121
Date: 9/12/2011
Drilling Co.: WHITE DRILLING
Supervisor: J. WHITE
Type Rig: INGERSOL AIR ROTARY T3W
Logged by: B Ford

LABORATORY TEST DATA (Results Reported in mg/kg)						FIELD DATA				BORING DATA	
Benzene	Toluene	Ethyl-benzene	Xylenes	Chlorides	Total TPH (C6-C35)	Photo-Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 1215 Finish Time: 1500
											Silty Sands: Fine grained sands, dark brown to red. saturated
						1.6		45			Silty Sands/red clay: Fine grained sands, dark brown to red, integrated with firm red clay, saturate
<0.00124	<0.00249	<0.00124	<0.00124	522	<18.7	1.5		50			TD at 50 feet
% moisture 19.6								55			
								60			
								65			
								70			
								75			
								80			

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

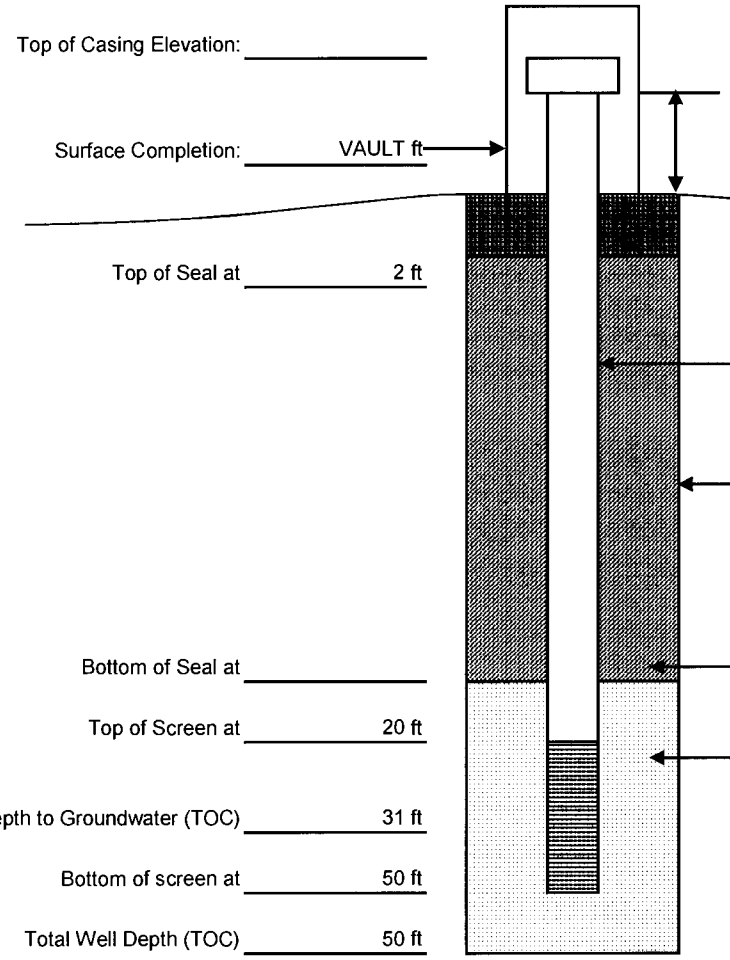
MONITORING WELL CONSTRUCTION DETAIL

Project: OWEN #9
EUNICE, NEW MEXICO

No. MW-9

Client: CHEVRON ENVIROMENTAL
MANAGEMENT COMPANY

File No.: 46121
Date: 9/12/2011
Drilling Co.: WHITE DRILLING
Supervisor: J. WHITE
Type Rig: INGERSOL AIR ROTARY T3W
Logged by: B Ford



Top of Casing Elevation: _____

Surface Completion: VAULT ft

Stick Up: _____

ground surface

Surface Seal: CEMENT

Top of Seal at 2 ft

Well Casing

Annulus Backfill Type: SAND

Bottom of Seal at _____

Seal Type: HOLE-PLUG, BENTONITE 3/8"

Top of Screen at 20 ft

Pack Type:
Sand, size 8/16
Gravel
Natural

Depth to Groundwater (TOC) 31 ft

Bottom of screen at 50 ft

Total Well Depth (TOC) 50 ft

Note: All dimensions are below ground surface (bgs) except where noted.

Screen Type: [X] slotted [ ] perforated other: _____

Screen Material: [ ] stainless steel [X] PVC other: _____

Screen Length: 30 ft Screen Diameter: 4 inches Screen Slot Size: 0.020 inches

Well Casing Material: PVC Well Casing Diameter: 4 inches

Development - Method: Bailing Hole Diameter: _____

Duration/Volume: 1 bbl

SOIL BORING LOG

Project: OWEN #9
EUNICE, NEW MEXICO

No. RW-1

Client: CHEVRON ENVIROMENTAL
MANAGEMENT COMPANY

File No.: 46121
Date: 9/13/2011
Drilling Co.: WHITE DRILLING
Supervisor: J. WHITE
Type Rig: INGERSOIL AIR ROTARY T3W
Logged by: B Ford

LABORATORY TEST DATA (Results Reported in mg/kg)						FIELD DATA				BORING DATA	
Benzene	Toluene	Ethyl-benzene	Xylenes	Total TPH (C6-C35)	Chlorides	Photo-Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 917 Finish Time:
											Caliche 1 foot down Silty Sands; dry, tan
						1.4	☒				
								5			Silty Sands: loose to firm. Light brown, dry, 25% integrated with with small rounded caliche fragments
						1.8	☒	10			
											Silty Sands: Medium brown, slightly moist, loose to firm, integrated with rounded 0.1 to 0.5 mm caliche fragments
<0.00104	<0.00208	<0.00104	<0.00104	<15.6	10.4	(2.2)	☒	15			
% Moisture 4.47											
						2.1	☒	20			
						2.1	☒	25			Silty Sands/Clay: large grain, moist, firm, dark brown integrated integrated with 5% 1-2 mm sand stone fragments reddish in color color
						1.9	☒	30			50% sand stone fragments 1-2 mm, white to dark brown 50% silty sands, brown with reddish tint, dry, loose to firm
									▽		Hit water at 33 feet.
<0.00106	<0.00212	<0.00106	<0.00106	<15.9	93.5	(2.1)		35			
% moisture 5.74											Silty Sands/Clay Mixture: Large grain, moist, reddish tint, firm
						2		40			

☒ Sampling Interval

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

▽ Water First Noted

(oval) Analyzed Sample

SOIL BORING LOG

Project: OWEN #9
EUNICE, NEW MEXICO

No. RW-1

Client: CHEVRON ENVIROMENTAL
MANAGEMENT COMPANY

File No.: 46121
Date: 9/13/2011
Drilling Co.: WHITE DRILLING
Supervisor: J. WHITE
Type Rig: INGERSOL AIR ROTARY T3W
Logged by: B Ford

LABORATORY TEST DATA (Results Reported in mg/kg)						FIELD DATA				BORING DATA	
Benzene	Toluene	Ethyl-benzene	Xylenes	Chlorides	Total TPH (C6-C35)	Photo-Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 1215 Finish Time: 1500
											Clay: Saturated red clay imbedded with limestone pieces (0.5 to 2 inches) with calcium carbonate lines
<0.00134	<0.00268	<0.00134	<0.00134	3770	<20.3	2		45			
% moisture 26.1											
											TD at 50 feet.
								50			
								55			
								60			
								65			
								70			
								75			
								80			

Stratification is Inferred And May Not be Exact.
Soil Classification Based on Visual-Manual Procedure

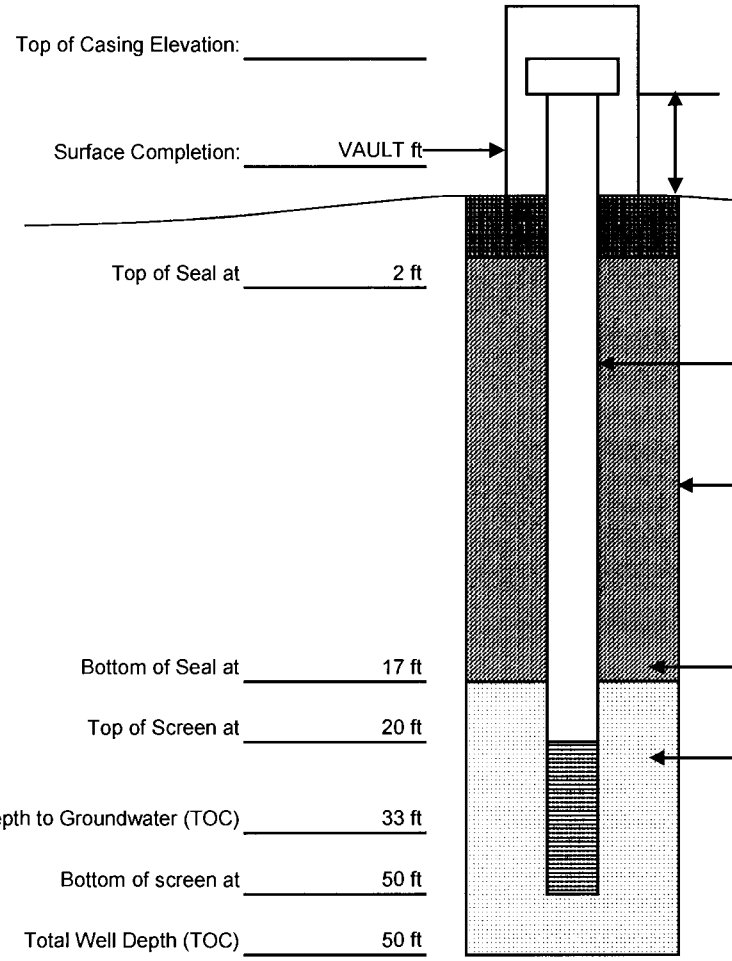
MONITORING WELL CONSTRUCTION DETAIL

Project: OWEN #9
EUNICE, NEW MEXICO

No. RW-1

Client: CHEVRON ENVIROMENTAL
MANAGEMENT COMPANY

File No.: 46121
Date: 9/13/2011
Drilling Co.: WHITE DRILLING
Supervisor: J. WHITE
Type Rig: INGERSOL AIR ROTARY T3W
Logged by: B Ford



Top of Casing Elevation: _____

Surface Completion: VAULT ft

Stick Up: _____

ground surface

Surface Seal: CEMENT

Top of Seal at 2 ft

Well Casing

Annulus Backfill Type: SAND

Bottom of Seal at 17 ft

Seal Type: HOLE-PLUG, BENTONITE 3/8"

Top of Screen at 20 ft

Pack Type:
Sand, size 8/16
Gravel
Natural

Depth to Groundwater (TOC) 33 ft

Bottom of screen at 50 ft

Total Well Depth (TOC) 50 ft

Note: All dimensions are below ground surface (bgs) except where noted.

Screen Type: ☒ slotted ☐ perforated other: _____

Screen Material: ☐ stainless steel ☒ PVC other: _____

Screen Length: 30 ft Screen Diameter: 6 inches Screen Slot Size: 0.020 inches

Well Casing Material: PVC Well Casing Diameter: 6 inches

Development - Method: Bailing Hole Diameter: _____

Duration/Volume: 2 bbl

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
MW-9	
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
Chevron Environmental Management Co.	
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
1400 Smith St., HDU 140/1900-1A	Houston / TX / 77002

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	25	52.80	N
	LONGITUDE	103	8	47.50	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS

Owen #9

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP		RANGE	
¼	¼	¼	¼	17	17	☐ NORTH ☑ SOUTH	32	☑ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1456	John W. White	White Drilling Company, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
9/12/11	9/12/11	50.0		31.0

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 31.0

DRILLING FLUID: ☑ AIR ☐ MUD ☐ ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
0.0	20.0	7 7/8	Sch. 40 PVC	Threads	4.0	1/4"	
20.0	50.0	7 7/8	Sch. 40 PVC	Threads	4.0	1/4"	.020

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)
31.0	50.0	19.0	Tan sand.	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA	TOTAL ESTIMATED WELL YIELD (GPM)

FOR OSE INTERNAL USE

WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

5. SEAL AND PUMP

TYPE OF PUMP: ☐ SUBMERSIBLE ☐ JET ☐ NO PUMP – WELL NOT EQUIPPED
☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	50.0	18.0	7 7/8	8/16 Sand.	19 sacks	Hand Mix
	18.0	10.0	7 7/8	Bentonite Pellets	4 sacks	Hand Mix
	10.0	0.0	7 7/8	Cement	1.997	Hand Mix

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0.0	12.0	12.0	Caliche.	☐ YES ☑ NO
12.0	24.0	12.0	Tan sand w/caliche.	☐ YES ☑ NO
24.0	50.0	26.0	Tan sand.	☑ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST — METHOD: ☐ BAILER ☐ PUMP ☐ AIR LIFT ☐ OTHER – SPECIFY:

TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

ADDITIONAL STATEMENTS OR EXPLANATIONS:

8. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

SIGNATURE OF DRILLER — DATE: 10/11/2011

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
MW-8	
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
Chevron Environmental Management Co.	
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
1400 Smith St., HDU 140/1900-1A	Houston / TX / 77002

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	25	56.90	N
	LONGITUDE	103	8	42.90	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS: Owen #9

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP	RANGE
¼	¼	¼	¼	17	17 ☐ NORTH ☑ SOUTH	32 ☑ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1456	John W. White	White Drilling Company, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
9/12/11	9/12/11	50.0		32.0

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 32.0

DRILLING FLUID: ☑ AIR ☐ MUD ☐ ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
0.0	20.0	7 7/8	Sch. 40 PVC	Threads	4.0	1/4"	
20.0	50.0	7 7/8	Sch. 40 PVC	Threads	4.0	1/4"	.020

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)
32.0	33.0	1.0	Tan sand.	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA	TOTAL ESTIMATED WELL YIELD (GPM)

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

5. SEAL AND PUMP

TYPE OF PUMP: ☐ SUBMERSIBLE ☐ JET ☐ NO PUMP – WELL NOT EQUIPPED ☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	50.0	18.0	7 7/8	8/16 Sand.	14 sacks	Hand Mix
	18.0	10.0	7 7/8	Bentonite Pellets	4 sacks	Hand Mix
	10.0	0.0	7 7/8	Cement	1.997	Hand Mix

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0.0	1.0	1.0	Brown sand.	☐ YES ☑ NO
1.0	9.0	8.0	Caliche.	☐ YES ☑ NO
9.0	14.0	5.0	Light red sand.	☐ YES ☑ NO
14.0	19.0	5.0	Caliche.	☐ YES ☑ NO
19.0	26.0	7.0	Tan sand w/sandstone layers.	☐ YES ☑ NO
26.0	32.0	6.0	Conglomerate.	☐ YES ☑ NO
32.0	33.0	1.0	Tan sand.	☑ YES ☐ NO
33.0	39.0	6.0	Sandstone.	☐ YES ☑ NO
39.0	44.0	5.0	Red clayey sand.	☐ YES ☑ NO
44.0	50.0	6.0	Red shale.	☐ YES ☑ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST: METHOD: ☐ BAILER ☐ PUMP ☐ AIR LIFT ☐ OTHER – SPECIFY:

TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

ADDITIONAL STATEMENTS OR EXPLANATIONS:

8. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

SIGNATURE OF DRILLER — DATE: 10/11/2011

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
RW-1	
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
Chevron Environmental Management Co.	
WELL OWNER MAILING ADDRESS	**CITY** / **STATE** / **ZIP**
1400 Smith St., HDU 140/1900-1A	Houston / TX / 77002

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	25	56.70	N
	LONGITUDE	103	8	46.80	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS: Owen #9

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP		RANGE	
¼	¼	¼	¼	17	17	☐ NORTH ☑ SOUTH	32	☑ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1456	John W. White	White Drilling Company, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
9/13/11	9/13/11	50.0		33.0

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT): 33.0

DRILLING FLUID: ☑ AIR ☐ MUD ☐ ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
0.0	20.0	7 7/8	Sch. 40 PVC	Threads	4.0	1/4"	
20.0	50.0	7 7/8	Sch. 40 PVC	Threads	4.0	1/4"	.020

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)
33.0	48.0	15.0	Tan sand.	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA	TOTAL ESTIMATED WELL YIELD (GPM)

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

5. SEAL AND PUMP

TYPE OF PUMP: ☐ SUBMERSIBLE ☐ JET ☐ NO PUMP – WELL NOT EQUIPPED ☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	50.0	17.0	7 7/8	8/16 Sand.	24 sacks	Hand Mix
	17.0	10.0	7 7/8	Bentonite Pellets	5 sacks	Hand Mix
	10.0	0.0	7 7/8	Cement	1.997	Hand Mix

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0.0	1.0	1.0	Brown sand.	☐ YES ☑ NO
1.0	14.0	13.0	Caliche.	☐ YES ☑ NO
14.0	31.0	17.0	Tan sand.	☐ YES ☑ NO
31.0	33.0	2.0	Sandstone.	☐ YES ☑ NO
33.0	48.0	15.0	Tan sand.	☑ YES ☐ NO
48.0	50.0	2.0	Red shale.	☐ YES ☑ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST — METHOD: ☐ BAILER ☐ PUMP ☐ AIR LIFT ☐ OTHER – SPECIFY:

TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

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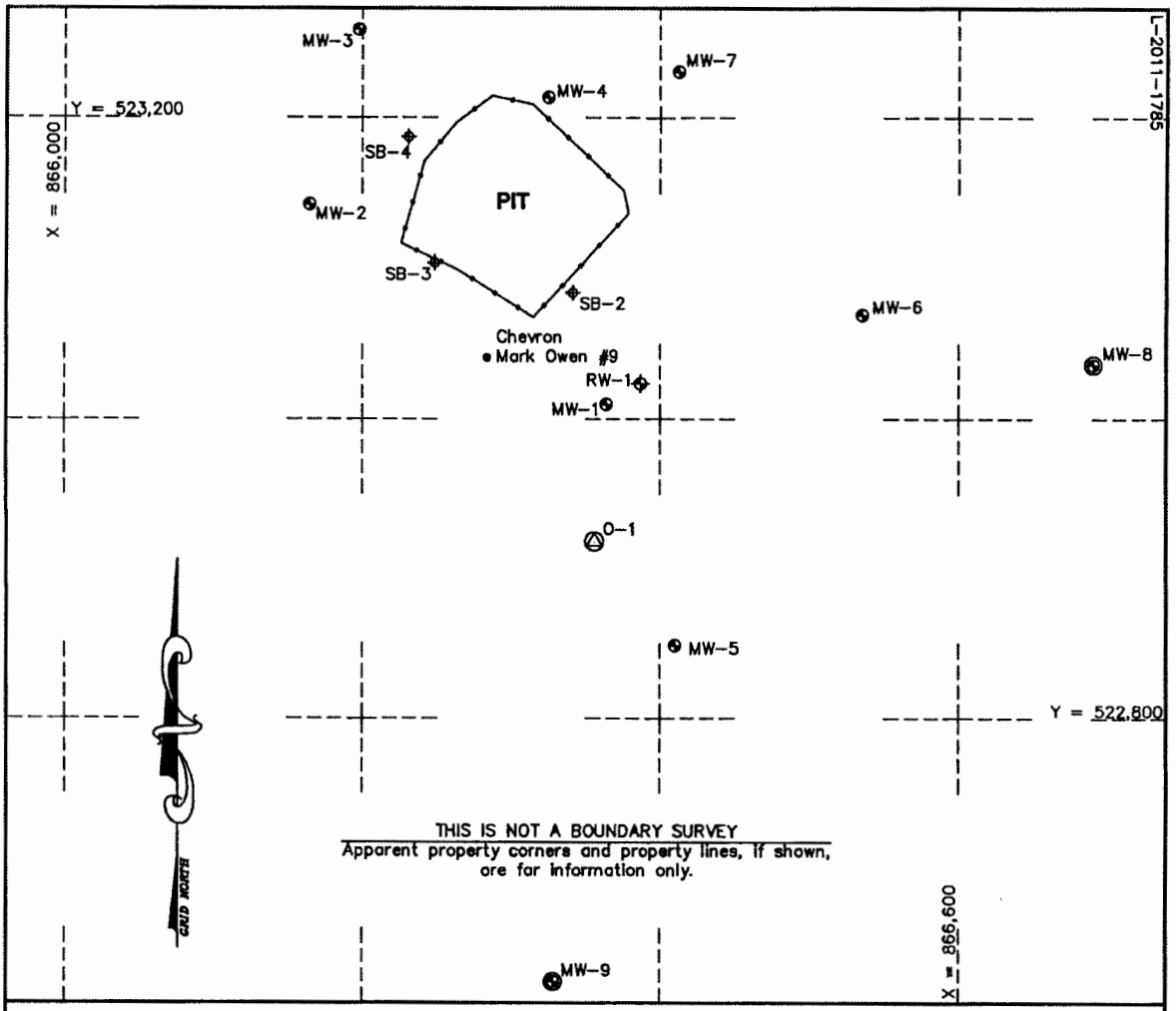
SIGNATURE OF DRILLER — DATE: 10/11/2011

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2



DESCRIPTION	NORTHING (Y)	EASTING (X)	LATITUDE	LONGITUDE	ELEVATION TOP OF CASING	ELEVATION CONCRETE PAD	ELEVATION NATURAL GROUND
MW-1	523,010.0	866,363.8	32°25'56.17" N	103°08'45.33" W	3,403.68	3,401.18	3,400.9
MW-2	523,142.9	866,164.8	32°25'57.51" N	103°08'47.64" W	3,408.23	3,405.66	3,405.5
MW-3	523,257.6	866,197.8	32°25'58.64" N	103°08'47.24" W	3,407.04	3,404.51	3,404.0
MW-4	523,213.0	866,325.2	32°25'58.19" N	103°08'45.76" W	3,404.74	3,401.94	3,401.5
MW-5	522,848.7	866,410.5	32°25'54.57" N	103°08'44.81" W	3,402.10	3,399.51	3,399.1
MW-6	523,069.5	866,535.4	32°25'56.74" N	103°08'43.32" W	3,400.24	3,397.28	3,396.8
MW-7	523,229.9	866,412.7	32°25'58.34" N	103°08'44.73" W	3,402.13	3,399.46	3,399.2
MW-8	523,036.4	866,692.0	32°25'56.40" N	103°08'41.50" W	3,397.24	3,394.73	3,394.4
MW-9	522,624.5	866,328.1	32°25'52.36" N	103°08'45.80" W	3,404.76	3,402.12	3,401.7
RW-1	523,023.8	866,386.9	32°25'56.31" N	103°08'45.06" W	3,403.03	3,400.40	3,399.9
SB-2	523,084.4	866,341.3	32°25'56.91" N	103°08'45.59" W			3,400.6
SB-3	523,104.3	866,248.6	32°25'57.12" N	103°08'46.67" W			3,401.5
SB-4	523,187.0	866,231.1	32°25'57.94" N	103°08'46.86" W			3,403.2
O-1	522,918.4	866,355.8	32°25'55.27" N	103°08'45.44" W			3,400.0

Date Surveyed: December 3, 2007,
October 8, 2010 and October 11, 2011

NOTE:

1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927.

2) Elevations shown hereon reference the National Geodetic Vertical Datum of 1929.

3) Geodetic Coordinates shown hereon references the North American Datum of 1927, (Clarke Spheroid of 1866). Reference Stations – "ODESSA RRP2" – CORS (DF5393), "ROSWELL" – and "ROSWELL" – CORS (DG6517) and "LUBBOCK RRP2" – CORS (DF5391).

LEGEND

- – Denotes Producing Well Location
- – Denotes Newly Installed Monitor Well
- – Denotes Monitor Well
- – Denotes Recovery Well
- – Denotes Soil Bore Location
- – Denotes Static GPS Control Station
- – Denotes Fence Line

100 0 100 200

Graphic Scale In Feet

I HEREBY CERTIFY THAT THIS PLAT WAS MADE FROM NOTES TAKEN IN THE FIELD IN A BONA FIDE SURVEY MADE UNDER MY SUPERVISION.

NEW MEXICO 12185 REGISTERED PROFESSIONAL SURVEYOR

MACON McDONALD NEW MEXICO P.L.S. No. 12185

WEST COMPANY
of Midland, Inc.
110 W. LOUISIANA, STE. 110
MIDLAND TEXAS, 79701
(432) 687-0865 – (432) 687-0868 FAX

CONESTOGA-ROVERS & ASSOCIATES

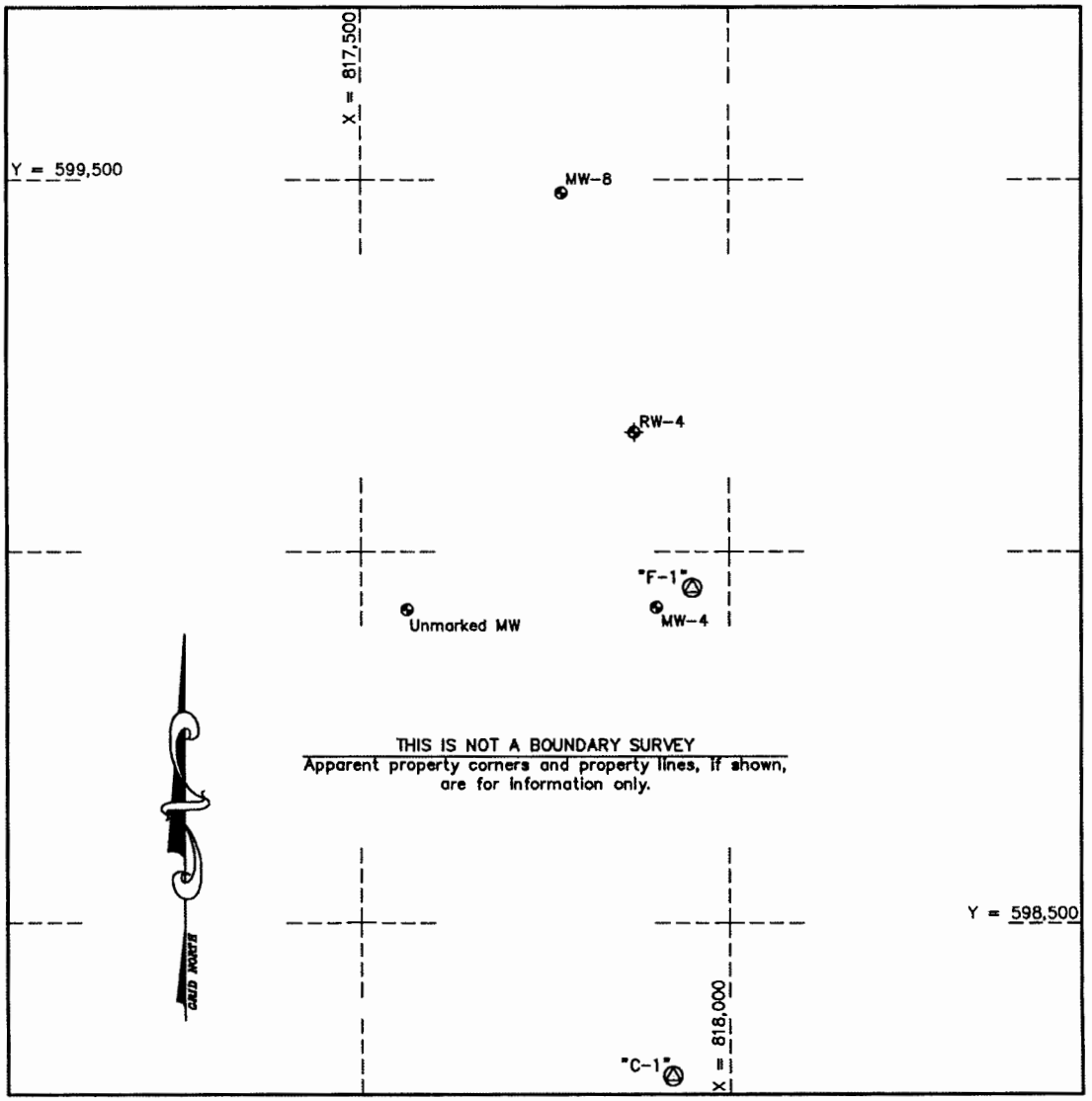
Topographic Survey of

MONITOR WELLS, RECOVERY WELLS AND SOIL BORE LOCATIONS

Located Around the
Chevron Mark Owen #9 Reserve Pit
Section 34, T-21-S, R-37-E, N.M.P.M.
Lea County, New Mexico

Drawn By: SJA	Date: October 24, 2011
Scale: 1" = 100'	Field Book: 376 / 25-28, 56-58, 489 / 70-72
Revision Date:	Quadrangles: Eunice
W.O. No: 2011-1785	Dwg. No.: L-2011-1785

L-2011-1786



DESCRIPTION	NORTHING (Y)	EASTING (X)	LATITUDE	LONGITUDE	ELEVATION TOP OF CASING	ELEVATION CONCRETE PAD	ELEVATION NATURAL GROUND
MW-4	598,924.7	817,902.0	32°38'32.27" N	103°18'02.11" W	3,700.63		
MW-8	599,481.9	817,773.4	32°38'37.80" N	103°18'03.55" W	3,696.77		
Unmarked MW	598,921.6	817,562.6	32°38'32.27" N	103°18'06.07" W	3,705.98		
RW-4	599,161.8	817,872.1	32°38'34.62" N	103°18'02.43" W	3,699.94	3,697.89	3,697.8
"C-1"	598,293.5	817,922.5	32°38'26.02" N	103°18'01.94" W			3,696.8
"F-1"	598,951.0	817,950.3	32°38'32.53" N	103°18'03.54" W			3,696.8

Date Surveyed: October 11, 2011
Weather: Warm & Breezy

NOTE:

1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927.

2) Elevations shown hereon reference the National Geodetic Vertical Datum of 1929.

3) Geodetic Coordinates shown hereon references the North American Datum of 1927, (Clarke Spheroid of 1866). Reference Stations – "ODESSA" – CORS (DL2764), "PECOS" – CORS (DM4167) and "ANDREWS" – CORS (DM4149).

LEGEND

– Denotes Recovery Well

– Denotes Stotic GPS Control Station

200 0 200 400

Graphic Scale In Feet

I HEREBY CERTIFY THAT THIS PLAT WAS MADE FROM NOTES TAKEN IN THE FIELD IN A BONA FIDE SURVEY MADE UNDER MY SUPERVISION.

MACON McDONALD NEW MEXICO P.L.S. NO. 12185

MACON McDONALD NEW MEXICO 12185 REGISTERED PROFESSIONAL SURVEYOR

WEST COMPANY
of Midland, Inc.
110 W. LOUISIANA, STE. 110
MIDLAND TEXAS, 79701
(432) 687-0865 – (432) 687-0868 FAX

CONESTOGA-ROVERS & ASSOCIATES

Topographic Survey of a

RECOVERY WELL

Located in Section 24
T-19-S, R-36-E, N.M.P.M.
Lea County, New Mexico

Drawn By: SJA	Date: October 25, 2011
Scale: 1" = 200'	Field Book: 489 / 70-72
Revision Date:	Quadrangles: Monument
W.O. No: 2011-1786	Dwg. No.: L-2011-1786