

QR - 53

**Annual GW Mon.  
REPORTS**

**DATE:**

2008

**Basin Environmental Consulting, LLC**

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P. O. Box 381  
Lovington, New Mexico 88260  
cdstanley@basin-consulting.com  
Office: (575) 396-2378 Fax: (575) 396-1429

RECEIVED  
2009 MAR 20 PM 1 31

  
Effective Solutions

2008  
ANNUAL MONITORING REPORT

BALLARD GRAYBURG 5-INCH  
SW ¼ SW ¼ SECTION 10, TOWNSHIP 18 SOUTH, RANGE 29 EAST  
LATITUDE 32°, 45', 27.1" NORTH, LONGITUDE 104°, 04', 12.0" WEST  
EDDY COUNTY, NEW MEXICO  
PLAINS SRS NUMBER: 2004-00192  
NMOCD REF: 2R-0053

PREPARED FOR:

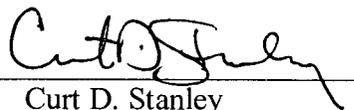


PLAINS MARKETING, L.P.  
333 CLAY STEET, SUITE 1600  
HOUSTON, TEXAS 77002

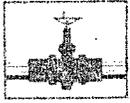
PREPARED BY:

BASIN ENVIRONMENTAL CONSULTING, LLC  
2800 Plains Highway  
P. O. Box 381  
Lovington, New Mexico 88260

March 2009



Curt D. Stanley  
Project Manager



PLAINS  
ALL AMERICAN

RECEIVED  
2009 MAR 30 PM 1 31

March 23, 2009

Mr. Edward Hansen  
New Mexico Oil Conservation Division  
Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Re: Plains All American – 2008 Annual Monitoring Reports  
2 Sites in Lea County, New Mexico  
1 Site in Eddy County, New Mexico

Dear Mr. Hansen:

Plains All American is an operator of crude oil pipelines and terminal facilities in the state of New Mexico. Plains All American actively monitors certain historical release sites exhibiting groundwater impacts, consistent with assessments and work plans developed in consultation with the New Mexico Oil Conservation Division (NMOCD). In accordance with the rules and regulations of the NMOCD, Plains All American hereby submits our Annual Monitoring reports for the following sites:

Lovington Gathering WTI	1RP-838 AP-96	Section 06, T17S, R37E, Lea County
Vacuum 10-Inch to Jal	1RP-0385	Section 20, T19S, R37E, Lea County
Ballard Grayburg 5-Inch	2R-0053	Section 10, T18S, R29E, Eddy County

Basin Environmental Consulting, LLC (Basin) prepared these documents and has vouched for their accuracy and completeness, and on behalf of Plains All American, I have personally reviewed the documents and interviewed Basin personnel in order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Reports for the above facilities.

If you have any questions or require further information, please contact me at (575) 441-1099.

Sincerely,

Jason Henry  
Remediation Coordinator  
Plains All American

CC: Larry Johnson, NMOCD, Hobbs, NM

Enclosures

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## **INTRODUCTION**

Basin Environmental Consulting, LLC (Basin), on behalf of Plains Marketing, L.P., (Plains), has prepared this annual monitoring report in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an annual monitoring report by April 1 of each year. This report is intended to be viewed as a complete document with text, figures, tables, and appendices. This report presents the results of the quarterly groundwater monitoring events conducted in the calendar year 2008 only. Additional site activities and remedial activities are summarized in several letters and reports previously submitted to the NMOCD. For reference, the Site Location Map is provided as Figure 1.

At the request of the NMOCD, groundwater monitoring was conducted during the four (4) quarters of 2008 to monitor the groundwater for concentrations of dissolved phase constituents. The groundwater monitoring events consisted of measuring static water levels in the monitor wells, checking for the presence of phase-separated hydrocarbons (PSH) on the water column, purging and sampling of each well exhibiting sufficient recharge. Monitor wells containing a thickness of PSH greater than 0.01 foot were not sampled.

## **SITE DESCRIPTION AND BACKGROUND INFORMATION**

The legal description of the site is SW $\frac{1}{4}$  SW $\frac{1}{4}$  Section 10, Township 18 South, Range 29 East. The site latitude is 32° 45' 27.1" North and the site longitude is 104° 04' 12.0" West. On September 2, 2004, Allstate Environmental Services (Allstate) responded to a pipeline release to place a temporary clamp on the pipeline and excavate the impacted soil. At the request of Plains, Basin performed subsequent remediation at the site. The Ballard Grayburg 5" pipeline was de-oiled, cold cut and capped. Approximately 80 barrels of crude oil were released from the pipeline and 0 (zero) barrels were recovered. The site is located in a pipeline right-of-way in a pasture utilized for cattle grazing. The initial surface stain covered an area approximately 22 feet in length and 23 feet in width. Excavation activities conducted during the initial response and subsequent remediation activities covered an area approximately 225 feet in length and 60 feet in width and ranged from approximately 10 to 20 feet below ground surface (bgs). Excavated soil was placed adjacent to the excavation on a six (6)-mil poly liner for future remedial activities.

A Preliminary Site Investigation Report (PSIR) and Remediation Plan, dated November 14, 2004 was submitted and approved by NMOCD, Artesia District II and the U. S. Department of the Interior, Bureau of Land Management (BLM) Carlsbad District Office. The approved plan required the excavation of the impacted area to approximately 12 to 15 feet bgs, the collection of confirmation soil samples, the installation of a 40-mil poly liner, the on-site blending of non-impacted segregated overburden and impacted soil and the backfilling the excavation with the blended soil. In March 2006, an electronic revision was submitted and subsequently approved by NMOCD (Santa Fe) and BLM. The approved revision required the excavation of the impacted area to a depth of approximately 18 to 20 feet bgs, the installation of a 40-mil poly liner on the floor of the excavation, the blending of the non-impacted segregated overburden and impacted soil, the collection of soil samples at 500 cubic yard (cy) intervals to ensure total petroleum hydrocarbon (TPH) constituent concentrations were less than 1,000 mg/Kg. Following the remediation activities, the plan required reseeding the site with BLM approved grass seed.

Based on initial delineation of the release site, two (2) groundwater monitor wells were installed to evaluate the quality of groundwater and one (1) recovery well was installed due to the presence of PSH detected in soil samples collected during drilling activities. There was no visual evidence of PSH impact in the soil samples collected during the installation of monitor wells MW-2 and MW-3.

Absorbent medium was placed in recovery well RW-1 to absorb the limited quantities of crude oil on the groundwater. The absorbent medium was inspected and replaced on a monthly schedule. During excavation of the release area recovery well RW-1 collapsed. The approved PSIR revision stipulated an additional recovery well located north-northwest of recovery well RW-1 would be attempted once backfilling of the excavation was completed. In July 2006, an attempt to install the additional recovery well was initiated; however subsurface limestone caverns were encountered during drilling activities and the installation of the recovery well was not possible.

Currently, there are two (2) groundwater monitor wells (MW-2 and MW-3) on site.

## **FIELD ACTIVITIES**

The site monitor wells were gauged and sampled on March 12, 2008, June 14, 2008, September 19, 2008 and November 21, 2008. During the quarterly sampling events, the monitoring wells were purged of approximately 3 well volumes of water or until the wells were dry using a PVC bailer or electrical Grundfos Pump. Groundwater was allowed to recharge and samples were obtained using disposable Teflon bailer. Water samples were stored in clean, glass containers provided by the laboratory and placed on ice in the field. Purge water was collected in a trailer mounted polystyrene tank and disposed at an NMOCD approved disposal in Monument, New Mexico.

Locations of the groundwater monitoring wells and the inferred groundwater elevations were constructed from the measurements collected during the quarterly monitoring events and are depicted on Figures 2A through 2D. The groundwater elevation data is provided as Table 1. Research of the New Mexico State Engineers Office reflected a general south to southwest groundwater gradient in this area of Eddy County, New Mexico. The corrected groundwater elevations ranged between 3,355.40 and 3,355.88 feet above mean sea level, in monitor well MW-2 on November 21, 2008 and in monitor well MW-3 on March 12, 2008, respectively. The groundwater elevation data presented above is inconsistent with data presented in the 2007 and prior Groundwater Monitoring Reports. The inconsistency in groundwater elevation may be related to the karstic nature of the subsurface beneath the release site as depicted in the monitor well and recovery well logs previously submitted to the NMOCD.

## **LABORATORY RESULTS**

Groundwater samples were collected from the groundwater monitor wells (MW-2 and MW-3) during the quarterly monitoring events and were delivered to Environmental Laboratory of Texas, Odessa, Texas for determination of BTEX constituent concentrations by EPA Method

SW846-8021b. Pursuant to an NMOCD request, the groundwater monitor wells were sampled annually for concentrations of Poly Aromatic Hydrocarbons (PAH) utilizing EPA Method 8270C. A summary of BTEX and PAH constituent concentrations for 2008 is presented in Table 2 and Table 3, respectively. Laboratory analytical reports are provided as Appendix A.

**Monitor well MW-2** is sampled on a quarterly schedule and analytical results indicate benzene concentrations ranged from 0.001 mg/L during the 3<sup>rd</sup> and 4<sup>th</sup> quarter to 0.013 mg/L during the 2<sup>nd</sup> quarter of 2008. Benzene concentrations were below the NMOCD regulatory standard during the 1<sup>st</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> quarters of the reporting period. Toluene concentrations ranged from less than the laboratory MDL of 0.002 mg/L during the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quarters to 0.003 mg/L during the 1<sup>st</sup> quarter of 2008. Toluene concentrations were below the NMOCD regulatory standard during the all four (4) quarters of the reporting period. Ethylbenzene concentrations ranged from less than the laboratory MDL of 0.001 mg/L during the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> to 0.001 mg/L during the 4<sup>th</sup> quarter of 2008. Ethylbenzene concentrations were below the NMOCD regulatory standard during the all four (4) quarters of the reporting period. Total xylene concentrations ranged from less than the laboratory MDL of 0.002 mg/L during the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> quarters to 0.002 mg/L during the 4<sup>th</sup> quarter of 2008. Total xylene concentrations were below the NMOCD regulatory standard during all four (4) quarters of the reporting period. Analytical results indicate PAH constituent concentrations were less than the MDL for each constituent during the 4<sup>th</sup> quarter of 2008.

**Monitor well MW-3** is sampled on a quarterly schedule and analytical results indicate benzene concentrations ranged from 0.008 mg/L during the 1<sup>st</sup> quarter to 0.179 mg/L during the 2<sup>nd</sup> quarter of 2008. Benzene concentrations were above the NMOCD regulatory standard during the 2<sup>nd</sup> and 4<sup>th</sup> quarters of the reporting period. Toluene concentrations ranged from less than the laboratory MDL of 0.002 mg/L during the 3<sup>rd</sup> quarter to 0.011 mg/L during the 2<sup>nd</sup> quarter of 2008. Toluene concentrations were below the NMOCD regulatory standard during the all four (4) quarters of the reporting period. Ethylbenzene and total xylene concentrations were less than the respective laboratory MDL of 0.001 mg/L and 0.002 mg/L during all four (4) quarters of the reporting period. Ethylbenzene and total xylene concentrations were below the NMOCD regulatory standard during all four (4) quarters of the reporting period. Analytical results indicate PAH constituent concentrations were less than the MDL for each constituent during the 4<sup>th</sup> quarter of 2008.

Groundwater concentrations are depicted on Figures 3A through 3D.

Laboratory analytical results were compared to NMOCD regulatory limits based on the New Mexico groundwater standards found in section 20.6.2.3103 of the New Mexico Administrative Code.

## SUMMARY

Based on the depth of the soil impact at this site, the NMOCD requested four (4) quarterly groundwater sampling events to be conducted at this site. This report presents the results of monitoring activities for the 2008 monitoring period. Currently, there are two (2) groundwater

monitoring wells (MW-2 and MW-3) on-site. Research of the New Mexico State Engineers Office reflected a general groundwater gradient to the south-southwest.

The groundwater elevation data is inconsistent with data presented in the 2007 and prior Groundwater Monitoring Reports. The inconsistency in groundwater elevation may be related to the karstic nature of the subsurface beneath the release site as depicted in the monitor well and recovery well logs previously submitted to the NMOCD.

Laboratory analytical results for the two (2) site groundwater samples, obtained during the four (4) sampling events, indicated benzene and total BTEX constituent concentrations for monitor well MW-2 were below applicable NMOCD limits for the 1<sup>st</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quarterly monitoring events and slightly exceeded the NMOCD benzene limit for the 2<sup>nd</sup> quarterly monitoring event. Laboratory results indicated benzene and total BTEX constituent concentrations for monitor well MW-3 were not detected above laboratory method detection limits for the 1<sup>st</sup> and 4<sup>th</sup> quarterly monitoring events and exceeded NMOCD benzene limits for the remaining two (2) monitoring events.

### **ANTICIPATED ACTIONS**

Plains requests, NMOCD approval to modify the groundwater sampling frequency at the Ballard Grayburg 5-Inch site. Plains proposes modifying the sampling frequency from a quarterly schedule to a semi-annual schedule. Plains maintains quarterly groundwater monitoring and the minor fluctuations in concentrations at this site do not contribute beneficial information as to decreasing trends in contaminants of concern with regard to long term natural attenuation.

A 2009 Annual Monitoring Report will be submitted to the NMOCD by April 1, 2010.

### **LIMITATIONS**

Basin has prepared this Annual Monitoring Report to the best of its ability. No other warranty, expressed or implied, is made or intended.

Basin has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. Basin has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and the information provided in documents or statements is true and accurate. Basin has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin also notes the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Plains. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin and/or Plains.

**DISTRIBUTION**

Copy 1: Edward J. Hansen  
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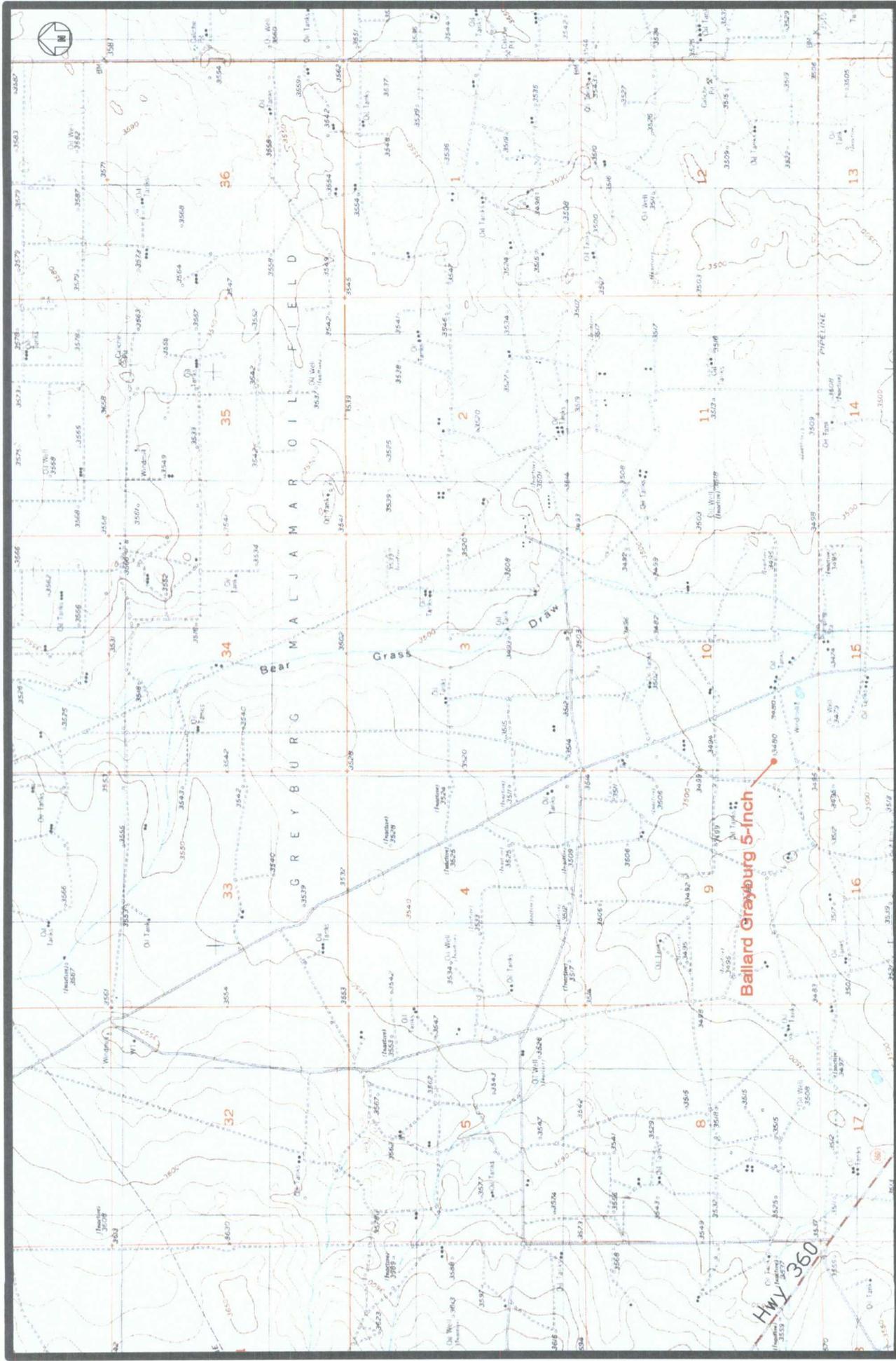
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# Figures

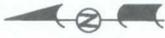


**Figure 1**  
**Site Location Map**  
**Ballard Grayburg 5-inch**  
**Plains Marking, L.P.**  
**Eddy County, New Mexico**  
**2RP-0053**



**Basin Environmental Services**

Prep By: CDS  
 March 17, 2009  
 Checked By: CDS  
 Scale 1"=3000'



SB-2

SB-3

SB-1

Plugged and Abandoned Yates  
Petroleum Well

21 Feet

Capped Plains Ballard  
Grayburg 5" Pipeline

Capped Plains Ballard  
Grayburg 5" Pipeline

Release Point

RW-1  
P&A May 11, 2006

60 Feet

Backfilled Excavated Area

100 Feet

Backfilled Excavated Area

225 Feet

MW-3  
(3355.88)

MW-2  
(3355.65)

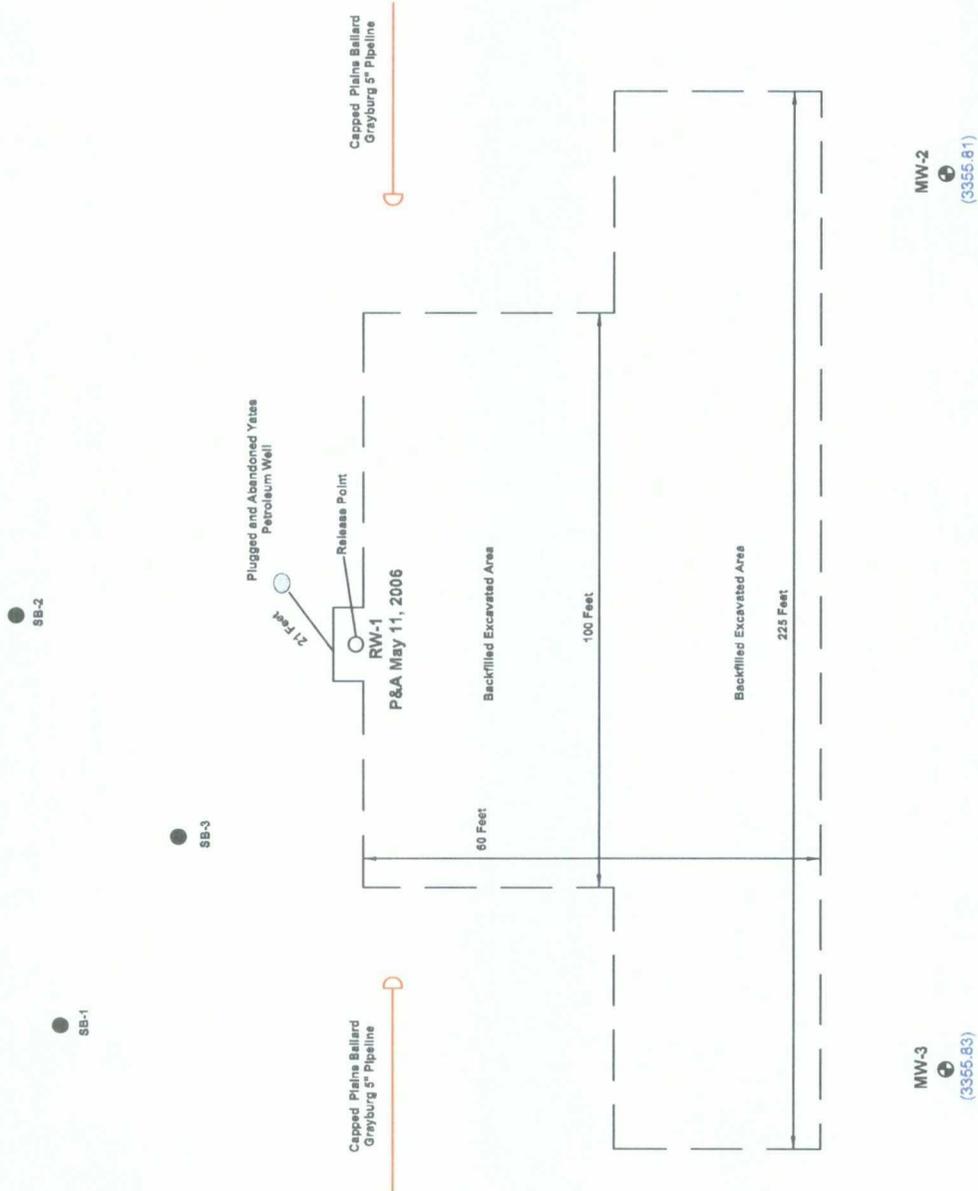
LEGEND:

- Monitor Well Location
- Excavation Extents
- Pipeline
- Groundwater Gradient Contour Line
- Groundwater Elevation (feet)
- Soil Boring Location

Figure 2A  
Inferred Groundwater  
Gradient Map  
(03/12/08)  
Plains Marketing, L.P.  
Ballard Grayburg 5-inch  
Eddy County, NM  
ZRP-0063

Basin Environmental Services

Scale: Not to Scale	Drawn By: CDS	Prepared By: CDS
February 20, 2009	SW1/4 SW1/4 Sec 10 T16S R26E	
	Lat: N32° 45' 27.1"	Long: W104° 04' 12.0"



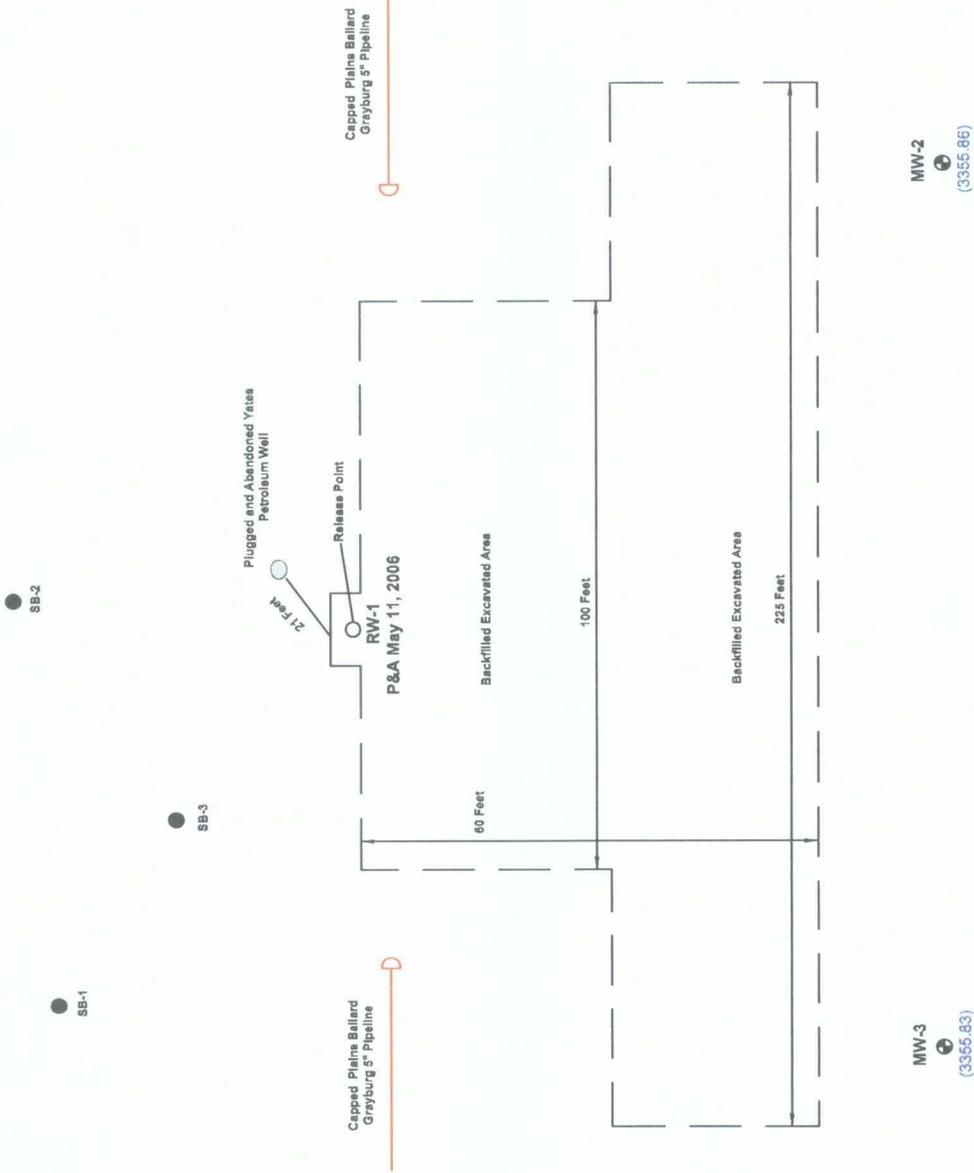
**LEGEND:**

- MW-1 Monitor Well Location
- Excavation Extents
- Pipeline
- Groundwater Gradient Contour Line
- Groundwater Elevation (feet)
- SB-1 Soil Boring Location

**Figure 2B**  
**Inferred Groundwater**  
**Gradient Map**  
 (06/14/08)  
 Plains Marketing, L.P.  
 Ballard Grayburg 5-inch  
 Eddy County, NM  
 2RP-0063

Scale: Not to Scale	Drawn By: CDS	Prepared By: CDS
February 20, 2009	SW1/4 SW1/4 Sec 10 T18S R28E	
Lat. N32° 45' 27.1"		Long. W104° 04' 12.0"

**Basin Environmental Services**



**LEGEND:**

- Monitor Well Location
- Excavation Extents
- Pipeline
- Groundwater Gradient Contour Line
- Groundwater Elevation (feet)
- Soil Boring Location

**Figure 2C**  
**Inferred Groundwater Gradient Map**  
 (09/19/08)  
 Plains Marketing, L.P.  
 Ballard Grayburg 5-inch  
 Eddy County, NM  
 ZRP-0063

Scale: Not to Scale	Drawn By: CDS	Prepared By: CDS
February 20, 2009	SW1/4 SW1/4 Sec 10 T16S R28E	
	Lat: N32° 46' 27.1" Long: W104° 04' 12.0"	



SB-2

SB-3

SB-1

Plugged and Abandoned Ysate Petroleum Well

Capped Plains Ballard Grayburg 5" Pipeline

Capped Plains Ballard Grayburg 5" Pipeline

Release Point

21 Feet

RW-1

P&A May 11, 2006

60 Feet

100 Feet

225 Feet

Backfilled Excavated Area

Backfilled Excavated Area

MW-3  
 (3355.45)

MW-2  
 (3355.40)

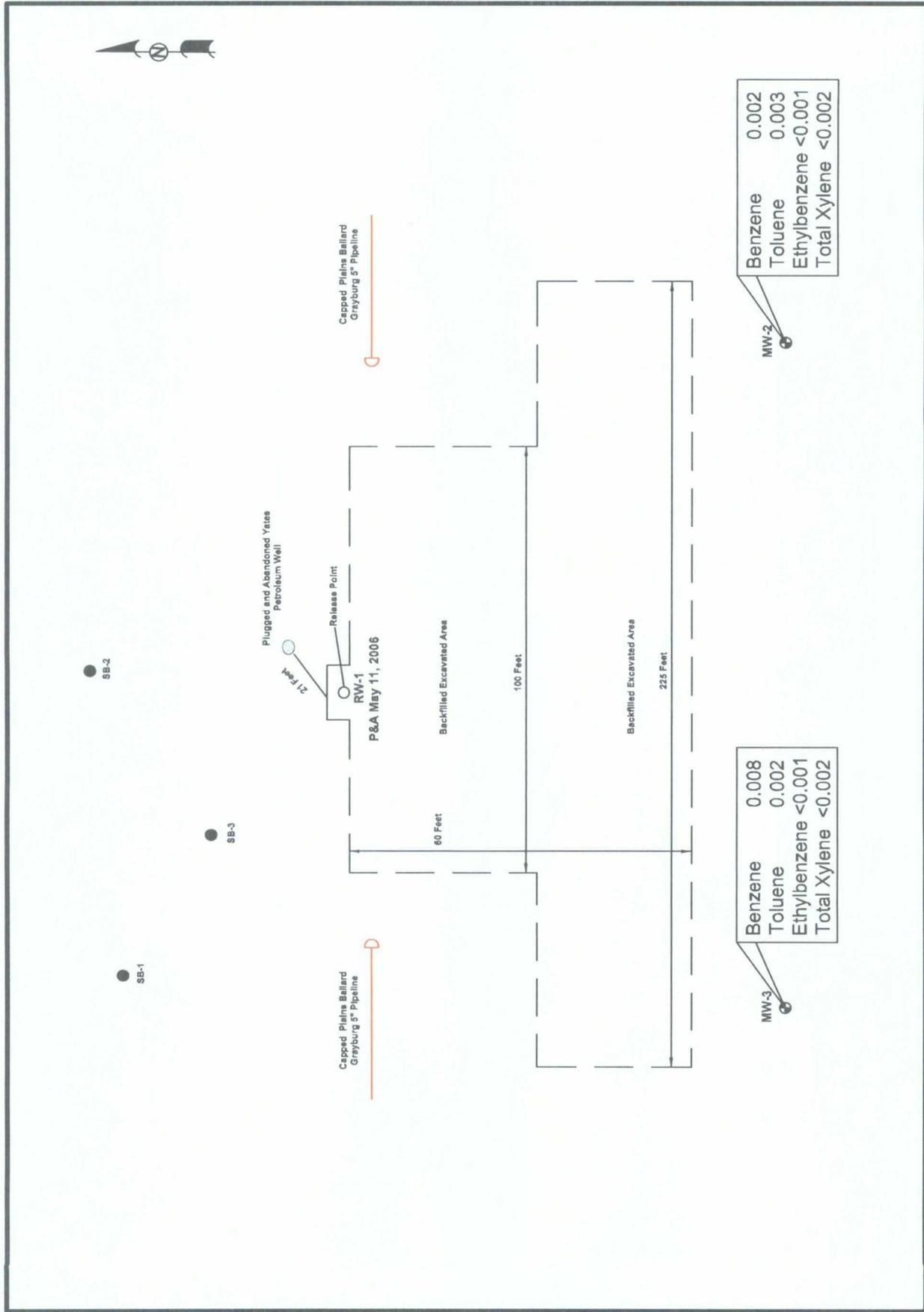
**LEGEND:**

- MW-1 Monitor Well Location
- Excavation Extents
- Pipeline
- Groundwater Gradient Contour Line
- Groundwater Elevation (feet)
- SB-1 Soil Boring Location

Figure 2D  
 Inferred Groundwater  
 Gradient Map  
 (11/21/08)  
 Plains Marketing, L.P.  
 Ballard Grayburg 5-inch  
 Eddy County, NM  
 ZRP-0063

**Basin Environmental Services**

Scale: Not to Scale	Drawn By: CDS	Prepared By: CDS
February 20, 2009	SW1/4 SW1/4 Sec 10 T.8S R20E	
	Lat: N32° 45' 27.1" Long: W104° 04' 12.0"	



Benzene	0.002
Toluene	0.003
Ethylbenzene	<0.001
Total Xylene	<0.002

MW-3

Benzene	0.008
Toluene	0.002
Ethylbenzene	<0.001
Total Xylene	<0.002

MW-3

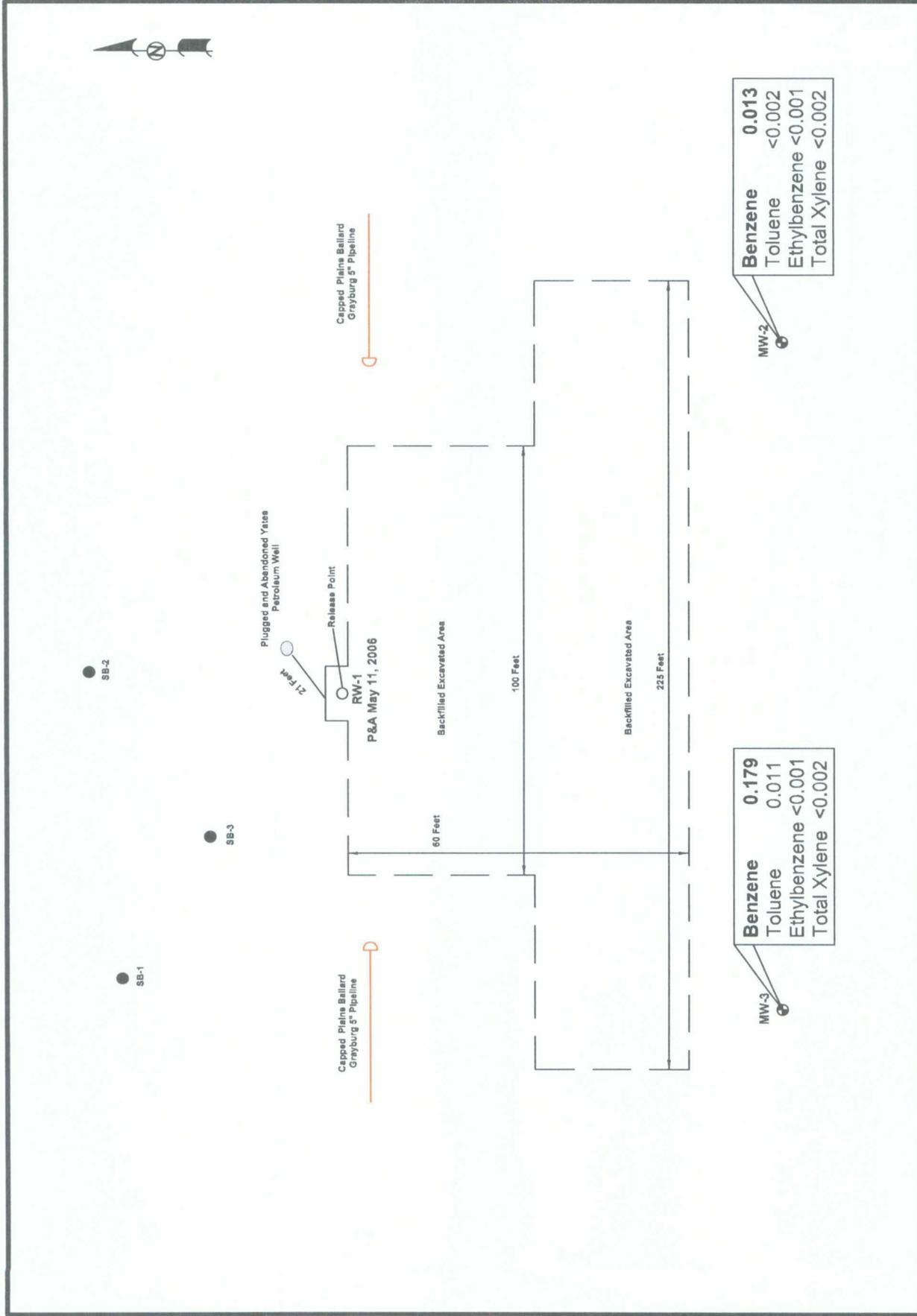
**LEGEND:**

- Monitor Well Location
- - - Excavation Extents
- Pipeline
- Soil Boring Location
- <0.001 Constituent Concentration (mg/L)

**Figure 3A**  
Groundwater Concentration Map (03/12/08)  
Plains Marketing, L.P.  
Ballard Grayburg 5-inch  
Eddy County, NM  
ZRP-0063

**Basin Environmental Services**

Scale: Not to Scale	Drawn By: CDS	Prepared By: CDS
February 20, 2009	SW1/4 SW1/4 Sec 10 T16S R28E	
	Lat. N32° 45' 27.1"	Long. W104° 04' 12.0"



**MW-2**

Benzene	0.013
Toluene	<0.002
Ethylbenzene	<0.001
Total Xylene	<0.002

**MW-3**

Benzene	0.179
Toluene	0.011
Ethylbenzene	<0.001
Total Xylene	<0.002

**Basin Environmental Services**

Figure 3B  
Groundwater  
Concentration Map  
(06/14/08)  
Plains Marketing, L.P.  
Ballard Grayburg 5-inch  
Eddy County, NM  
ZRP-0063

Scale: Not to Scale  
Drawn By: CDS  
February 20, 2009  
SW1/4 SW1/4 Sec. 10 T18S R29E  
Prepared By: CDS  
Lat: N32° 45' 27.1" Long: W104° 04' 12.0"

**LEGEND:**

- Monitor Well Location
- Excavation Extents
- Pipeline
- Soil Boring Location
- <0.001 Constituent Concentration (mg/L)



SB-2

SB-3

SB-1

Plugged and Abandoned Yusee Petroleum Well

Capped Plains Ballard Grayburg 5" Pipeline

Capped Plains Ballard Grayburg 5" Pipeline

Release Point

21 Feet

RW-1  
P&A May 11, 2006

Backfilled Excavated Area

60 Feet

100 Feet

Backfilled Excavated Area

225 Feet

Benzene 0.009  
Toluene <0.002  
Ethylbenzene <0.001  
Total Xylene <0.002

MW-3

Benzene 0.001  
Toluene <0.002  
Ethylbenzene <0.001  
Total Xylene <0.002

MW-2

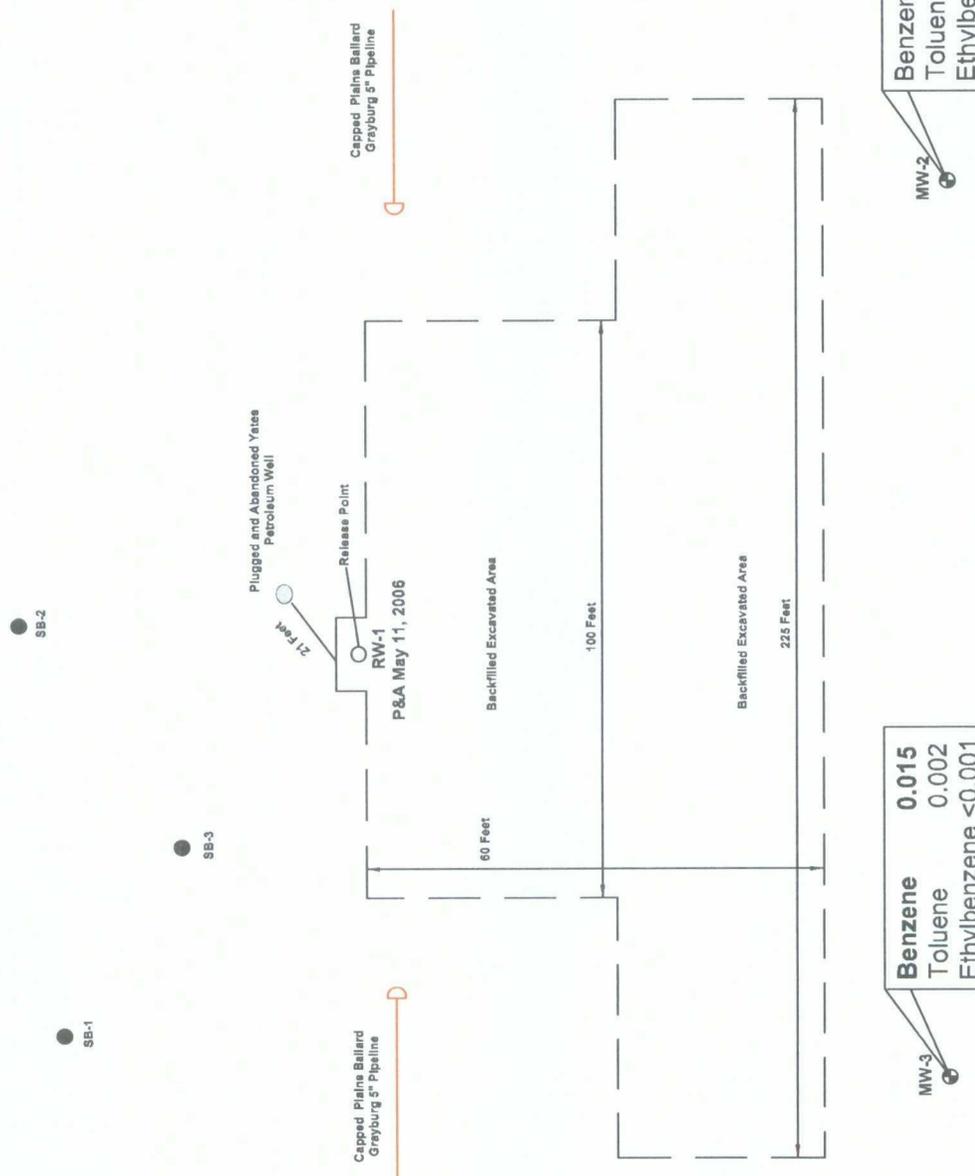
LEGEND:

- MW: Monitor Well Location
- Excavation Extents
- Pipeline
- Soil Boring Location
- <0.001 Constituent Concentration (mg/L)

Figure 3C  
Groundwater  
Concentration Map  
(09/19/08)  
Plains Marketing, L.P.  
Ballard Grayburg 5-inch  
Eddy County, NM  
ZRP-0063

Basin Environmental Services

Scale: Not to Scale	Drawn By: CDS	Prepared By: CDS
February 20, 2009	SW/14 SW/14 Sec: 10 T:16S R20E	
	Lat: N32° 45' 27.1"	Long: W104° 04' 12.0"



<b>Benzene</b>	0.001
<b>Toluene</b>	<0.002
<b>Ethylbenzene</b>	<0.001
<b>Total Xylene</b>	<0.002

<b>Benzene</b>	0.015
<b>Toluene</b>	0.002
<b>Ethylbenzene</b>	<0.001
<b>Total Xylene</b>	<0.002

**Basin Environmental Services**

**Figure 3D  
Groundwater  
Concentration Map  
(11/21/08)**  
Plains Marketing, L.P.  
Ballard Grayburg 5-inch  
Eddy County, NM  
ZRP-0063

**LEGEND:**  
 MW- Monitor Well Location  
 Excavation Extents  
 Pipeline  
 SB- Soil Boring Location  
 <0.001 Constituent Concentration (mg/L)

Scale: Not to Scale  
 February 20, 2009  
 Drawn By: CDS  
 SW1/4 SW1/4 Sec. 10 T18S R26E  
 Prepared By: CDS  
 Lat. N32° 45' 27.1" Long. W104° 04' 12.0"



# Tables

TABLE 1

GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
 BALLARD-GRAYBURG 5"  
 EDDY COUNTY, NEW MEXICO  
 PLAINS SRS NO: 2004-00192  
 NMOCD REFERENCE NO: 2RP-0053

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 2	11/10/04	3,497.90	-	186.58	0.00	3,311.32
	03/29/05	3,497.90	-	186.58	0.00	3,311.32
	05/26/05	3,497.90	-	186.58	0.00	3,311.32
	08/11/05	3,497.90	-	186.57	0.00	3,311.33
	12/27/05	3,497.90	-	186.58	0.00	3,311.32
	03/30/06	3,497.90	-	186.57	0.00	3,311.33
	06/14/06	3,497.90	-	186.56	0.00	3,311.34
	09/20/06	3,497.90	-	186.57	0.00	3,311.33
	12/14/06	3,497.90	-	186.58	0.00	3,311.32
	03/19/07	3,497.90	-	186.58	0.00	3,311.32
	06/05/07	3,497.90	-	186.58	0.00	3,311.32
	09/27/07	3,497.90	-	186.58	0.00	3,311.32
	12/04/07	3,497.90	-	186.57	0.00	3,311.33
	03/12/08	3,497.90	-	142.05	0.00	3,355.85
	06/14/08	3,497.90	-	142.09	0.00	3,355.81
	09/19/08	3,497.90	-	142.04	0.00	3,355.86
	11/21/08	3,497.90	-	142.50	0.00	3,355.40
MW-3	11/10/04	3,497.91	-	186.59	0.00	3,311.32
	03/29/05	3,497.91	-	186.59	0.00	3,311.32
	05/26/05	3,497.91	-	186.58	0.00	3,311.33
	08/11/05	3,497.91	-	186.58	0.00	3,311.33
	12/27/05	3,497.91	-	186.59	0.00	3,311.32
	03/30/06	3,497.91	-	186.59	0.00	3,311.32
	06/14/06	3,497.91	-	186.59	0.00	3,311.32
	09/20/06	3,497.91	-	186.58	0.00	3,311.33
	12/14/06	3,497.91	-	186.58	0.00	3,311.33
	03/19/07	3,497.91	-	186.58	0.00	3,311.33
	06/05/07	3,497.91	-	186.58	0.00	3,311.33
	09/27/07	3,497.91	-	186.58	0.00	3,311.33
	12/04/07	3,497.91	-	186.57	0.00	3,311.34
	03/12/08	3,497.91	-	142.03	0.00	3,355.88
	06/14/08	3,497.91	-	142.08	0.00	3,355.83
	09/19/08	3,497.91	-	142.10	0.00	3,355.81
	11/21/08	3,497.91	-	142.46	0.00	3,355.45
RW-1	11/10/04	3,497.94	186.56	186.60	0.04	3,311.37
	03/29/05	3,497.94	186.56	186.60	0.04	3,311.37
	05/26/05	3,497.94	186.57	186.60	0.03	3,311.37
	08/11/05	3,497.94	186.57	186.60	0.03	3,311.37
	12/27/05	3,497.94	186.56	186.58	0.02	3,311.38

TABLE 1

GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
BALLARD-GRAYBURG 5"  
EDDY COUNTY, NEW MEXICO  
PLAINS SRS NO: 2004-00192  
NMOCD REFERENCE NO: 2RP-0053

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
RW-1	03/30/06	3,497.94	186.56	186.57	0.01	3,311.38
NOTE: RW-1 Plugged & Abandoned May 11, 2006						

TABLE 2

## CONCENTRATIONS OF BENZENE AND BTEX IN GROUNDWATER

PLAINS MARKETING, L.P.  
 BALLARD GRAYBURG 5"  
 EDDY COUNTY, NEW MEXICO  
 PLAINS SRS NO. 2004-00192  
 NMOCD REFERENCE NO: 2RP-0053

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030					Method:
		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P-XYLENES (mg/L)	O-XYLENES (mg/L)	160.1 TDS (mg/L)
MW-2	12/04/04	<0.001	<0.001	<0.001	<0.001	<0.001	7,730
	03/29/05	0.006	0.001	<0.001	<0.001	<0.001	
	05/26/05	0.002	0.001	<0.001	<0.001	<0.001	
	08/11/05	0.001	0.001	<0.001	<0.001	<0.001	
	12/27/05	0.008	0.003	<0.001	<0.001	<0.001	
	03/30/06	0.003	0.003	<0.001	<0.001	<0.001	
	06/14/06	0.005	0.001	<0.001	<0.001	<0.001	
	09/20/06	0.003	<0.001	<0.001	<0.001	<0.001	
	12/14/06	<b>0.010</b>	0.002	<0.001	0.001	<0.001	
	03/19/07	<b>0.043</b>	0.013	<0.001	<0.001	<0.001	
	06/05/07	<b>0.012</b>	0.001	<0.001	<0.001	<0.001	
	09/27/07	0.003	0.001	<0.001	<0.002	<0.001	
	12/04/07	<b>0.013</b>	0.004	<0.001	<0.002	<0.001	
	03/12/08	0.002	0.003	<0.001	<0.002	<0.001	
	06/14/08	<b>0.013</b>	<0.002	<0.001	<0.002	<0.001	
	09/19/08	0.001	<0.002	<0.001	<0.002	<0.001	
	11/21/08	0.001	<0.002	0.001	0.002	<0.001	
MW-3	12/04/04	<0.001	<0.001	<0.001	<0.001	<0.001	8,530
	03/29/05	<b>0.054</b>	0.004	<0.001	<0.001	<0.001	
	05/26/05	<b>0.014</b>	0.003	<0.001	<0.001	<0.001	
	08/11/05	0.002	<0.001	<0.001	<0.001	<0.001	
	12/27/05	<b>0.024</b>	0.002	<0.001	<0.001	<0.001	
	03/30/06	0.009	0.003	<0.001	<0.001	<0.001	
	06/14/06	0.005	<0.001	<0.001	<0.001	<0.001	
	09/20/06	0.004	<0.001	<0.001	<0.001	<0.001	
	12/14/06	<b>0.011</b>	0.003	<0.001	0.003	<0.001	
	03/19/07	<0.001	<0.001	<0.001	<0.001	<0.001	
	06/05/07	<b>0.091</b>	0.031	<0.001	<0.001	<0.001	
	09/27/07	<b>0.017</b>	0.003	<0.001	<0.002	<0.001	
	12/04/07	<b>0.013</b>	0.003	<0.001	<0.002	<0.001	
	03/12/08	0.008	0.002	<0.001	<0.002	<0.001	
	06/14/08	<b>0.179</b>	0.011	<0.001	<0.002	<0.001	
	09/19/08	0.009	<0.002	<0.001	<0.002	<0.001	
	11/21/08	<b>0.015</b>	0.002	<0.001	<0.002	<0.001	
<b>NMOCD CRITERIA</b>		<b>0.01</b>	<b>0.75</b>	<b>0.75</b>	<b>TOTAL XYLENES 0.62</b>		

TABLE 3

CONCENTRATIONS OF POLY AROMATIC HYDROCARBONS IN GROUNDWATER

PLAINS MARKETING, L.P.  
 BALLARD GRAYBURG 5 INCH  
 EDDY COUNTY, NEW MEXICO  
 PLAINS SRS NO. 2004-00192  
 NMOCD REF NO: 2RP-053

METHOD: EPA SW 846 8270C	
SAMPLE LOCATION	SAMPLE DATE
MW-2	11/21/08
MW-3	11/21/08
Acenaphthene	<0.005
Acenaphthylene	<0.005
Anthracene	<0.005
Benzo(a)anthracene	<0.005
Benzo(a)pyrene	<0.005
Benzo(b)fluoranthene	<0.005
Benzo(k)fluoranthene	<0.005
Benzo(g,h,i)perylene	<0.005
Chrysene	<0.005
Dibenz(a,h)Anthracene	<0.005
Fluoranthene	<0.005
Fluorene	<0.005
Indeno(1,2,3-c,d)Pyrene	<0.005
1-Methylnaphthalene	<0.005
2-Methylnaphthalene	<0.005
Naphthalene	<0.005
Phenanthrene	<0.005
Pyrene	<0.005



# Appendices



Appendix A  
Laboratory Reports

# **Analytical Report 299635**

**for**

## **PLAINS ALL AMERICAN EH&S**

**Project Manager: Camille Reynolds**

**Ballard Grayburg 5"**

**2004-00192**

**18-MAR-08**



**12600 West I-20 East Odessa, Texas 79765**

Texas certification numbers:  
Houston, TX T104704215

Florida certification numbers:  
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675  
Norcross(Atlanta), GA E87429

South Carolina certification numbers:  
Norcross(Atlanta), GA 98015

North Carolina certification numbers:  
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America  
Midland - Corpus Christi - Atlanta



18-MAR-08

Project Manager: **Camille Reynolds**  
**PLAINS ALL AMERICAN EH&S**  
1301 S. COUNTY ROAD 1150  
Midland, TX 79706

Reference: XENCO Report No: **299635**  
**Ballard Grayburg 5"**  
Project Address: Eddy County, NM

**Camille Reynolds:**

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 299635. 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. 299635 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

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*Certified and approved by numerous States and Agencies.*

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**Sample Cross Reference 299635**



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
Ballard Grayburg 5"

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
MW-2	W	Mar-12-08 16:15		299635-001
MW-3	W	Mar-12-08 13:30		299635-002



**Certificate of Analysis Summary 299635**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**

Project Id: 2004-00192  
 Contact: Camille Reynolds  
 Project Location: Eddy County, NM

Project Name: Ballard Grayburg 5"  
 Date Received in Lab: Fri Mar-14-08 12:10 pm  
 Report Date: 18-MAR-08  
 Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	299635-001	299635-002	
	Field Id:	MW-2	MW-3	
Depth:				
Matrix:	WATER	WATER	WATER	
Sampled:	Mar-12-08 16:15	Mar-12-08 13:30		
Extracted:	Mar-17-08 08:42	Mar-17-08 17:00		
Analyzed:	Mar-17-08 20:32	Mar-17-08 23:15		
Units/RL:	mg/L RL	mg/L RL		
Benzene	0.0027 0.0010	0.0083 0.0010		
Toluene	0.0032 0.0020	0.0025 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		
Xylenes, Total	ND	ND		
Total BTEX	0.0059	0.0108		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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 Brent Barron  
 Odessa Laboratory Director



## 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(PQL) and above the SQL(MDL).
- 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.

\* Outside XENCO'S scope of NELAC Accreditation

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477



# Form 2 - Surrogate Recoveries



Project Name: Ballard Grayburg 5"

Work Order #: 299635

Project ID: 2004-00192

Lab Batch #: 717332

Sample: 299559-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0347	0.0300	116	80-120	

Lab Batch #: 717332

Sample: 299559-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0334	0.0300	111	80-120	
4-Bromofluorobenzene	0.0356	0.0300	119	80-120	

Lab Batch #: 717332

Sample: 299635-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0338	0.0300	113	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 717332

Sample: 505989-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 717332

Sample: 505989-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0331	0.0300	110	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

\*\* 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: Ballard Grayburg 5"

Work Order #: 299635

Project ID: 2004-00192

Lab Batch #: 717332

Sample: 505989-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0302	0.0300	101	80-120	
4-Bromofluorobenzenc	0.0330	0.0300	110	80-120	

Lab Batch #: 717385

Sample: 299635-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0330	0.0300	110	80-120	
4-Bromofluorobenzenc	0.0336	0.0300	112	80-120	

Lab Batch #: 717385

Sample: 299637-002 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0304	0.0300	101	80-120	
4-Bromofluorobenzenc	0.0337	0.0300	112	80-120	

Lab Batch #: 717385

Sample: 299637-002 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0304	0.0300	101	80-120	
4-Bromofluorobenzenc	0.0343	0.0300	114	80-120	

Lab Batch #: 717385

Sample: 506013-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0307	0.0300	102	80-120	
4-Bromofluorobenzenc	0.0314	0.0300	105	80-120	

\*\* 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: Ballard Grayburg 5"

Work Order #: 299635

Project ID: 2004-00192

Lab Batch #: 717385

Sample: 506013-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0334	0.0300	111	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

Lab Batch #: 717385

Sample: 506013-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

\*\* 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.



# BS / BSD Recoveries



## Project Name: Ballard Grayburg 5"

Work Order #: 299635

Analyst: SHE

Lab Batch ID: 717332

Sample: 505989-1-BKS

Date Prepared: 03/17/2008

Batch #: 1

Project ID: 2004-00192

Date Analyzed: 03/17/2008

Matrix: Water

Units: mg/L

### 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
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0980	98	0.1	0.0942	94	4	70-125	25	
Toluene	ND	0.1000	0.0979	98	0.1	0.0943	94	4	70-125	25	
Ethylbenzene	ND	0.1000	0.1001	100	0.1	0.0967	97	3	71-129	25	
m,p-Xylenes	ND	0.2000	0.2009	100	0.2	0.1930	97	4	70-131	25	
o-Xylene	ND	0.1000	0.1073	107	0.1	0.1022	102	5	71-133	25	

Analyst: SHE

Lab Batch ID: 717385

Sample: 506013-1-BKS

Date Prepared: 03/17/2008

Batch #: 1

Date Analyzed: 03/17/2008

Matrix: Water

Units: mg/L

### 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
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0919	92	0.1	0.0969	97	5	70-125	25	
Toluene	ND	0.1000	0.0919	92	0.1	0.0973	97	6	70-125	25	
Ethylbenzene	ND	0.1000	0.0945	95	0.1	0.1011	101	7	71-129	25	
m,p-Xylenes	ND	0.2000	0.1862	93	0.2	0.1997	100	7	70-131	25	
o-Xylene	ND	0.1000	0.0973	97	0.1	0.1044	104	7	71-133	25	

Relative Percent Difference RPD =  $200 * [(D-F)/(D+F)]$   
 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



# Form 3 - MS / MSD Recoveries



Project Name: Ballard Grayburg 5"

Work Order # 299635  
 Lab Batch ID: 717332  
 Date Analyzed: 03/17/2008  
 Reporting Units: mg/L

Project ID: 2004-00192  
 QC-Sample ID: 299559-001 S  
 Date Prepared: 03/17/2008  
 Batch #: 1  
 Matrix: Water  
 Analyst: SHE

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	0.0054	0.1000	0.0873	82	0.1000	0.0839	79	4	70-125	25	
Toluene	ND	0.1000	0.0893	89	0.1000	0.0849	85	5	70-125	25	
Ethylbenzene	ND	0.1000	0.0935	94	0.1000	0.0885	89	5	71-129	25	
m,p-Xylenes	ND	0.2000	0.1856	93	0.2000	0.1753	88	6	70-131	25	
o-Xylene	ND	0.1000	0.0971	97	0.1000	0.0913	91	6	71-133	25	

Lab Batch ID: 717385  
 Date Analyzed: 03/18/2008  
 Reporting Units: mg/L

QC-Sample ID: 299637-002 S  
 Date Prepared: 03/17/2008  
 Batch #: 1  
 Matrix: Water  
 Analyst: SHE

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	ND	0.1000	0.1001	100	0.1000	0.0974	97	3	70-125	25	
Toluene	ND	0.1000	0.1019	102	0.1000	0.0990	99	3	70-125	25	
Ethylbenzene	ND	0.1000	0.1040	104	0.1000	0.1017	102	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2037	102	0.2000	0.1996	100	2	70-131	25	
o-Xylene	ND	0.1000	0.1080	108	0.1000	0.1055	106	2	71-133	25	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B  
 Relative Percent Difference RPD = 200\*(D-G)/(D+G)  
 ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
 N = See Narrative, EQL = Estimated Quantitation Limit  
 Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

# Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST  
 12600 West 120 East  
 Odessa, Texas 79705  
 Phone: 432-563-1800  
 Fax: 432-563-1713

Project Manager: Ken Dutton  
 Project Name: BALLARD GRAYBURG 5"  
 Company Name: Basin Environmental Service Technologies, LLC  
 Project #: 2004-00192  
 Company Address: P. O. Box 301  
 Project Loc: Eddy County, NM  
 City/State/Zip: Lovington, NM 88260  
 PO #: PAA - C. J. Reynolds  
 Telephone No: (605) 479-2124  
 Fax No: (605) 996-1429  
 Report Format:  Standard  TRRP  NPDES  
 Sampler Signature: *Frank Blackburn*  
 e-mail: kdutton@basinenv.com

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field # of Containers	Preservation & # of Containers	Matrix	Analysis For:	Standard
01	MW-2		12-Mar-08	1815		2	X HCl X HNO <sub>3</sub> X H <sub>2</sub> SO <sub>4</sub> X NH <sub>4</sub> OH X Na <sub>2</sub> SO <sub>4</sub> None Other (Specify)	GW	Metals: As, Ag, Ba, Cd, Cr, Pb, Hg, Se SAR / ESP / CEC Anions (Cl, SO <sub>4</sub> , Nitrate) Cations (Ca, Mg, Na, K) TPH: TX 1005 TX 1008 TPH: 418.1 8015M 8015E HF - Non-fluoride Spectry OTH	RTX 8201 B/500 or RTX 8200 NORM RUSH TAT (Pre-Screen) 24, 48, 72 Hr Standard TAT
02	MW-3		12-Mar-08	1330		2	X HCl X HNO <sub>3</sub> X H <sub>2</sub> SO <sub>4</sub> X NH <sub>4</sub> OH X Na <sub>2</sub> SO <sub>4</sub> None Other (Specify)	GW	Metals: As, Ag, Ba, Cd, Cr, Pb, Hg, Se SAR / ESP / CEC Anions (Cl, SO <sub>4</sub> , Nitrate) Cations (Ca, Mg, Na, K) TPH: TX 1005 TX 1008 TPH: 418.1 8015M 8015E HF - Non-fluoride Spectry OTH	RTX 8201 B/500 or RTX 8200 NORM RUSH TAT (Pre-Screen) 24, 48, 72 Hr Standard TAT

Special Instructions:

Received by: *Frank Blackburn* Date: 12-Mar-08 Time: 0800  
 Received by: *Bill Blackburn* Date: 3-14-08 Time: 11:10  
 Received by: *Bill Blackburn* Date: 3-14-08 Time: 12:00  
 Received by: *Wendy Jones* Date: 3-14-08 Time: 11:10

Temperature Upon Receipt: 50 °C

**Environmental Lab of Texas**  
 Variance/ Corrective Action Report- Sample Log-In

Client: Plains  
 Date/ Time: 3-14-08 12:10  
 Lab ID #: 299035  
 Initials: AL

**Sample Receipt Checklist**

	Yes	No	Client Initials
#1 Temperature of container/ cooler?	Yes	No	50 °C
#2 Shipping container in good condition?	Yes	No	
#3 Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present
#4 Custody Seals intact on sample bottles/ container?	Yes	No	Not Present
#5 Chain of Custody present?	Yes	No	
#6 Sample instructions complete of Chain of Custody?	Yes	No	
#7 Chain of Custody signed when relinquished/ received?	Yes	No	
#8 Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
#9 Container label(s) legible and intact?	Yes	No	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	Yes	No	
#11 Containers supplied by ELOT?	Yes	No	
#12 Samples in proper container/ bottle?	Yes	No	See Below
#13 Samples properly preserved?	Yes	No	See Below
#14 Sample bottles intact?	Yes	No	
#15 Preservations documented on Chain of Custody?	Yes	No	
#16 Containers documented on Chain of Custody?	Yes	No	
#17 Sufficient sample amount for indicated test(s)?	Yes	No	See Below
#18 All samples received within sufficient hold time?	Yes	No	See Below
#19 Subcontract of sample(s)?	Yes	No	<Not Applicable
#20 VOC samples have zero headspace?	Yes	No	Not Applicable

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken:  
 \_\_\_\_\_  
 \_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

# Analytical Report 305942

for

## PLAINS ALL AMERICAN EH&S

**Project Manager: Camille Reynolds**

**Ballard Grayburg 5"**

**2004-00192**

**19-JUN-08**



**12600 West I-20 East Odessa, Texas 79765**

Texas certification numbers:  
Houston, TX T104704215

Florida certification numbers:  
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675  
Norcross(Atlanta), GA E87429

South Carolina certification numbers:  
Norcross(Atlanta), GA 98015

North Carolina certification numbers:  
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America  
Midland - Corpus Christi - Atlanta



19-JUN-08

Project Manager: **Camille Reynolds**  
**PLAINS ALL AMERICAN EH&S**  
1301 S. COUNTY ROAD 1150  
Midland, TX 79706

Reference: XENCO Report No: **305942**  
**Ballard Grayburg 5"**  
Project Address: Eddy County, NM

**Camille Reynolds:**

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 305942. 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. 305942 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,

A handwritten signature in black ink, appearing to read "Brent Barron, II", written over a horizontal line.

**Brent Barron, II**

Odessa Laboratory Manager

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

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**Sample Cross Reference 305942**



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
Ballard Grayburg 5"

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
MW-2	W	Jun-14-08 09:45		305942-001
MW-3	W	Jun-14-08 10:05		305942-002



**Certificate of Analysis Summary 305942**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**

Project Id: 2004-00192  
 Contact: Camille Reynolds  
 Project Location: Eddy County, NM

Date Received in Lab: Mon Jun-16-08 05:05 pm  
 Report Date: 19-JUN-08  
 Project Manager: Brent Barron, II

Project Name: Ballard Grayburg 5"

Analysis Requested	Lab Id:	305942-001	305942-002	
	Field Id: Depth: Matrix: Sampled:	MW-2 WATER Jun-14-08 09:45	MW-3 WATER Jun-14-08 10:05	
<b>BTEX by EPA 8021B</b>	Extracted:	Jun-17-08 16:15	Jun-17-08 16:15	
	Analyzed:	Jun-17-08 23:49	Jun-18-08 00:13	
	Units/RL:	mg/L RL	mg/L RL	
Benzene		0.0134 0.0010	0.1791 0.0010	
Toluene		ND 0.0020	0.0110 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	ND	
Total BTEX		0.0134	0.1901	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

  
 Brent Barron  
 Odessa Laboratory Director



## 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(PQL) and above the SQL(MDL).
  - 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.
- \* Outside XENCO'S scope of NELAC Accreditation

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11381 Meadowglen Lane Suite L Houston, Tx 77082-2647  
9701 Harry Hines Blvd , Dallas, TX 75220  
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238  
2505 N. Falkenburg Rd., Tampa, FL 33619  
5757 NW 158th St, Miami Lakes, FL 33014  
6017 Financial Dr., Norcross, GA 30071

Phone	Fax
(281) 589-0692	(281) 589-0695
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477



# Form 2 - Surrogate Recoveries



Project Name: Ballard Grayburg 5"

Work Order #: 305942

Project ID: 2004-00192

Lab Batch #: 725775

Sample: 305940-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0290	0.0300	97	80-120	
4-Bromofluorobenzenc	0.0333	0.0300	111	80-120	

Lab Batch #: 725775

Sample: 305940-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0284	0.0300	95	80-120	
4-Bromofluorobenzenc	0.0321	0.0300	107	80-120	

Lab Batch #: 725775

Sample: 305942-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0332	0.0300	111	80-120	
4-Bromofluorobenzenc	0.0276	0.0300	92	80-120	

Lab Batch #: 725775

Sample: 305942-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0296	0.0300	99	80-120	
4-Bromofluorobenzenc	0.0253	0.0300	84	80-120	

Lab Batch #: 725775

Sample: 510817-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0287	0.0300	96	80-120	
4-Bromofluorobenzenc	0.0328	0.0300	109	80-120	

\*\* 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: Ballard Grayburg 5"

Work Order #: 305942

Project ID: 2004-00192

Lab Batch #: 725775

Sample: 510817-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 725775

Sample: 510817-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.0318	0.0300	106	80-120	

\*\* 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.



# BS / BSD Recoveries



Project Name: Ballard Grayburg 5"

Work Order #: 305942

Project ID: 2004-00192

Analyst: SHE

Date Prepared: 06/17/2008

Date Analyzed: 06/17/2008

Lab Batch ID: 725775

Sample: 510817-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

## 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
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0926	93	0.1	0.0827	83	11	70-125	25	
Toluene	ND	0.1000	0.0970	97	0.1	0.0853	85	13	70-125	25	
Ethylbenzene	ND	0.1000	0.1118	112	0.1	0.0979	98	13	71-129	25	
m,p-Xylenes	ND	0.2000	0.2288	114	0.2	0.2010	101	13	70-131	25	
o-Xylene	ND	0.1000	0.1153	115	0.1	0.1016	102	13	71-133	25	

Relative Percent Difference RPD =  $200 * [(D-F)/(D+F)]$

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



# Form 3 - MS / MSD Recoveries



Project Name: Ballard Grayburg 5"

Work Order #: 305942

Project ID: 2004-00192

Lab Batch ID: 725775

QC-Sample ID: 305940-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 06/18/2008

Date Prepared: 06/17/2008 Analyst: SHE

Reporting Units: mg/L

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0895	90	0.1000	0.0814	81	11	70-125	25	
Toluene	ND	0.1000	0.0919	92	0.1000	0.0835	84	9	70-125	25	
Ethylbenzene	ND	0.1000	0.1040	104	0.1000	0.0948	95	9	71-129	25	
m,p-Xylenes	ND	0.2000	0.2115	106	0.2000	0.1934	97	9	70-131	25	
o-Xylene	ND	0.1000	0.1090	109	0.1000	0.0995	100	9	71-133	25	

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

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

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



**Environmental Lab of Texas**  
Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env. / Plains  
 Date/ Time: 6.16.08 17:05  
 Lab ID #: 303942  
 initials: al

**Sample Receipt Checklist**

	Yes	No	Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.5 °C
#2 Shipping container in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#3 Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Present
#4 Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Present
#5 Chain of Custody present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#6 Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#7 Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#8 Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ID written on Cont./ Lid
#9 Container label(s) legible and intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#11 Containers supplied by ELOT?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#12 Samples in proper container/ bottle?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#13 Samples properly preserved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#14 Sample bottles intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#15 Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#16 Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#17 Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#18 All samples received within sufficient hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#19 Subcontract of sample(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable
#20 VOC samples have zero headspace?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

# Analytical Report 312882

for

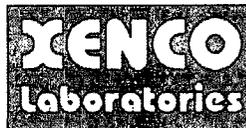
## PLAINS ALL AMERICAN EH&S

**Project Manager: Camille Reynolds**

**Ballard Grayburg 5"**

**2004-00192**

**23-SEP-08**



**E84880**

**12600 West I-20 East Odessa, Texas 79765**

Texas certification numbers:

Houston, TX T104704215 - Odessa/Midland, TX T104704215-08-TX

Florida certification numbers:

Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675  
Norcross(Atlanta), GA E87429

South Carolina certification numbers:

Norcross(Atlanta), GA 98015

North Carolina certification numbers:

Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America  
Midland - Corpus Christi - Atlanta



23-SEP-08

Project Manager: **Camille Reynolds**  
**PLAINS ALL AMERICAN EH&S**  
1301 S. COUNTY ROAD 1150  
Midland, TX 79706

Reference: XENCO Report No: **312882**  
**Ballard Grayburg 5"**  
Project Address: Eddy County, NM

**Camille Reynolds:**

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 312882. 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. 312882 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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

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**Sample Cross Reference 312882**



**PLAINS ALL AMERICAN EH&S, Midland, TX**

Ballard Grayburg 5"

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
MW-2	W	Sep-19-08 08:30		312882-001
MW-3	W	Sep-19-08 10:15		312882-002



**Certificate of Analysis Summary 312882**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**



Project Id: 2004-00192

Contact: Camille Reynolds

Project Location: Eddy County, NM

Date Received in Lab: Fri Sep-19-08 04:53 pm

Report Date: 23-SEP-08

Project Manager: Brent Barron, II

Project Name: Ballard Grayburg 5"

Analysis Requested	Lab Id:	312882-001	312882-002		
	Field Id:	MW-2	MW-3		
Depth:					
Matrix:	WATER	WATER	WATER		
Sampled:	Sep-19-08 08:30	Sep-19-08 10:15			
Extracted:	Sep-22-08 16:08	Sep-22-08 16:08			
Analyzed:	Sep-23-08 00:29	Sep-23-08 01:14			
Units/RL:	mg/L RL	mg/L RL			
Benzene	0.0013 0.0010	0.0093 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	ND			
Total BTEX	0.0013	0.0093			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty as to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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 Brent Barron  
 Odessa Laboratory Director



# 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(PQL) and above the SQL(MDL).
- 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.

\* Outside XENCO'S scope of NELAC Accreditation

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 5757 NW 158th St, Miami Lakes, FL 33014  
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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477



# Form 2 - Surrogate Recoveries

Project Name: Ballard Grayburg 5"

Work Orders : 312882,

Project ID: 2004-00192

Lab Batch #: 734916

Sample: 312880-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.0248	0.0300	83	80-120	

Lab Batch #: 734916

Sample: 312880-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.0252	0.0300	84	80-120	

Lab Batch #: 734916

Sample: 312882-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0368	0.0300	123	80-120	**
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 734916

Sample: 312882-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0348	0.0300	116	80-120	
4-Bromofluorobenzene	0.0242	0.0300	81	80-120	

Lab Batch #: 734916

Sample: 516098-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.0243	0.0300	81	80-120	

\*\* 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: Ballard Grayburg 5"

Work Orders : 312882,

Project ID: 2004-00192

Lab Batch #: 734916

Sample: 516098-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0362	0.0300	121	80-120	**
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 734916

Sample: 516098-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.0263	0.0300	88	80-120	

\*\* 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.



# BS / BSD Recoveries



Project Name: Ballard Grayburg 5"

Work Order #: 312882

Project ID: 2004-00192

Analyst: ASA

Date Prepared: 09/22/2008

Date Analyzed: 09/22/2008

Lab Batch ID: 734916

Sample: 516098-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

## 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
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.1052	105	0.1	0.1034	103	2	70-125	25	
Toluene	ND	0.1000	0.1005	101	0.1	0.0990	99	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1021	102	0.1	0.1002	100	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2121	106	0.2	0.2085	104	2	70-131	25	
o-Xylene	ND	0.1000	0.0966	97	0.1	0.0961	96	1	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



# Form 3 - MS / MSD Recoveries



Project Name: Ballard Grayburg 5"

Work Order #: 312882

Project ID: 2004-00192

Lab Batch ID: 734916

QC-Sample ID: 312880-001 S

Batch #: 1

Matrix: Water

Date Analyzed: 09/23/2008

Date Prepared: 09/22/2008

Analyst: ASA

Reporting Units: mg/L

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.0910	91	0.1000	0.1002	100	9	70-125	25	
Toluene	ND	0.1000	0.0858	86	0.1000	0.0939	94	9	70-125	25	
Ethylbenzene	ND	0.1000	0.0855	86	0.1000	0.0936	94	9	71-129	25	
m,p-Xylenes	ND	0.2000	0.1770	89	0.2000	0.1937	97	9	70-131	25	
o-Xylene	ND	0.1000	0.0833	83	0.1000	0.0912	91	9	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 Applicable  
N = See Narrative, EQ = Estimated Quantitation Limit

# Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST  
 12600 West 120 East  
 Odessa, Texas 79765  
 Phone: 432-583-1800  
 Fax: 432-583-1713

Project Manager: Curt Stanley PAGE 01 OF 01

Company Name Basin Environmental Service Technologies, LLC

Company Address: P. O. Box 301

City/State/Zip Lovington, NM 88260

Telephone No: (505) 441-2244

Sampler Signature: *Curt Stanley* Fax No: (505) 396-1428

CSStanley@basinetv.com

Project Name: BALLARD GRAYBURG 5"

Project #: 2004-00192

Project Loc: Eddy County, NM

PD #: PAA - C. J. Reynolds

Report Format:  Standard  TRP  NPDES

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field # of Containers	Preservation & # of Containers	Name	Other (Specify)	Matrix	TPH: 4181 8015M 8015H	TPH: TX 1005 TX 1006	Carbons (Ca, Mg, Ni, N)	Ammonia (Cl, SO4, Alkalinity)	SAR / ESP / CTC	Metals As Ag Ba Cd Cr Pb Hg Se	Volatiles	Spms or Bots	RCI	NORM	RUSH TAT (Pre-Batch) 24, 48, 72 hrs	Standard TAT	
001	MW-2			9/19/2008	830	2	X	X		GW													
002	MW-3			9/19/2008	1015	2	X	X		GW													

Special Instructions:

Requested by: *[Signature]* Date: 9/16/08 Time: 14:30

Received by: *[Signature]* Date: 9/19/08 Time: 10:55

Requested by: *[Signature]* Date: 9/16/08 Time: 14:30

Received by: *[Signature]* Date: 9/19/08 Time: 10:55

Requested by: *[Signature]* Date: 9/16/08 Time: 14:30

Received by: *[Signature]* Date: 9/19/08 Time: 10:55

Temperature Upon Receipt: 4.5 °C

**Environmental Lab of Texas**  
 Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env / Plains  
 Date/ Time: 9/16/08 16:53  
 Lab ID #: 317882  
 Initials: AL

**Sample Receipt Checklist**

	Yes	No	Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/>		4.5 ° C
#2 Shipping container in good condition?	<input checked="" type="checkbox"/>		
#3 Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/>		Not Present
#4 Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/>		Not Present
#5 Chain of Custody present?	<input checked="" type="checkbox"/>		
#6 Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/>		
#7 Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/>		
#8 Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/>		ID written on Cont / Lid
#9 Container label(s) legible and intact?	<input checked="" type="checkbox"/>		Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/>		
#11 Containers supplied by ELOT?	<input checked="" type="checkbox"/>		
#12 Samples in proper container/ bottle?	<input checked="" type="checkbox"/>		See Below
#13 Samples properly preserved?	<input checked="" type="checkbox"/>		See Below
#14 Sample bottles intact?	<input checked="" type="checkbox"/>		
#15 Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>		
#16 Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>		
#17 Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/>		See Below
#18 All samples received within sufficient hold time?	<input checked="" type="checkbox"/>		See Below
#19 Subcontract of sample(s)?	<input checked="" type="checkbox"/>		Not Applicable
#20 VOC samples have zero headspace?	<input checked="" type="checkbox"/>		Not Applicable

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken:  
 \_\_\_\_\_  
 \_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

# Analytical Report 318605

for

## PLAINS ALL AMERICAN EH&S

**Project Manager: Daniel Bryant**

**Ballard Grayburg 5"**

**2004-00192**

**02-DEC-08**



**12600 West I-20 East Odessa, Texas 79765**

Texas certification numbers:

Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:

Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675

Norcross(Atlanta), GA E87429

South Carolina certification numbers:

Norcross(Atlanta), GA 98015

North Carolina certification numbers:

Norcross(Atlanta), GA 483

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Midland - Corpus Christi - Atlanta



02-DEC-08

Project Manager: **Daniel Bryant**  
**PLAINS ALL AMERICAN EH&S**  
1301 S. COUNTY ROAD 1150  
Midland, TX 79706

Reference: XENCO Report No: **318605**  
**Ballard Grayburg 5"**  
Project Address: Eddy County, NM

**Daniel Bryant:**

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 318605. 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. 318605 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

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**Sample Cross Reference 318605**



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
Ballard Grayburg 5"

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
MW-2	W	Nov-21-08 13:20		318605-001
MW-3	W	Nov-21-08 13:35		318605-002



# Certificate of Analysis Summary 318605

## PLAINS ALL AMERICAN EH&S, Midland, TX



**Project Name: Ballard Grayburg 5"**

**Project Id:** 2004-00192

**Date Received in Lab:** Nov-24-08 08:32 am

**Contact:** Daniel Bryant

**Report Date:** 02-DEC-08

**Project Location:** Eddy County, NM

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	318605-001	318605-002		
	<i>Field Id:</i>	MW-2	MW-3		
	<i>Depth:</i>				
	<i>Matrix:</i>	WATER	WATER		
	<i>Sampled:</i>	Nov-21-08 13:20	Nov-21-08 13:35		
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Nov-25-08 15:15	Nov-25-08 15:15		
	<i>Analyzed:</i>	Nov-27-08 23:09	Nov-27-08 23:31		
	<i>Units/RL:</i>	mg/L    RL	mg/L    RL		
Benzene		0.0015    0.0010	0.0150    0.0010		
Toluene		ND    0.0020	0.0021    0.0020		
Ethylbenzene		0.0014    0.0010	ND    0.0010		
m,p-Xylenes		0.0023    0.0020	ND    0.0020		
o-Xylene		ND    0.0010	ND    0.0010		
Total Xylenes		0.0023    0.0010	ND    0.0010		
Total BTEX		0.0052    0.0010	0.0171    0.0010		
<b>SVOA PAHs List by EPA 8270C</b>	<i>Extracted:</i>	Nov-25-08 17:30	Nov-25-08 17:33		
	<i>Analyzed:</i>	Nov-26-08 18:46	Nov-26-08 20:14		
	<i>Units/RL:</i>	mg/L    RL	mg/L    RL		
Accnaphthene		ND    0.005	ND    0.005		
Accnaphthylene		ND    0.005	ND    0.005		
Anthracene		ND    0.005	ND    0.005		
Benzo(a)anthracene		ND    0.005	ND    0.005		
Benzo(a)pyrene		ND    0.005	ND    0.005		
Benzo(b)fluoranthene		ND    0.005	ND    0.005		
Benzo(k)fluoranthene		ND    0.005	ND    0.005		
Benzo(g,h,i)perylene		ND    0.005	ND    0.005		
Chrysene		ND    0.005	ND    0.005		
Dibenz(a,h)Anthracene		ND    0.005	ND    0.005		
Fluoranthene		ND    0.005	ND    0.005		
Fluorene		ND    0.005	ND    0.005		
Indeno(1,2,3-c,d)Pyrene		ND    0.005	ND    0.005		
1-Methylnaphthalene		ND    0.005	ND    0.005		
2-Methylnaphthalene		ND    0.005	ND    0.005		
Naphthalene		ND    0.005	ND    0.005		
Phenanthrene		ND    0.005	ND    0.005		
Pyrene		ND    0.005	ND    0.005		

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Brent Barron

Odessa Laboratory Director



# 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.

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9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lanc, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



# Form 2 - Surrogate Recoveries

Project Name: Ballard Grayburg 5"

Work Orders : 318605,

Project ID: 2004-00192

Lab Batch #: 741733

Sample: 318605-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0315	0.0300	105	80-120	
4-Bromofluorobenzenc	0.0240	0.0300	80	80-120	

Lab Batch #: 741733

Sample: 318605-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0270	0.0300	90	80-120	
4-Bromofluorobenzenc	0.0264	0.0300	88	80-120	

Lab Batch #: 741733

Sample: 318605-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0271	0.0300	90	80-120	
4-Bromofluorobenzenc	0.0251	0.0300	84	80-120	

Lab Batch #: 741733

Sample: 318605-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0330	0.0300	110	80-120	
4-Bromofluorobenzenc	0.0210	0.0300	70	80-120	**

Lab Batch #: 741733

Sample: 520130-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc	0.0271	0.0300	90	80-120	
4-Bromofluorobenzenc	0.0257	0.0300	86	80-120	

\*\* 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: Ballard Grayburg 5"

Work Orders : 318605,

Project ID: 2004-00192

Lab Batch #: 741733

Sample: 520130-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzenc	0.0315	0.0300	105	80-120	
4-Bromofluorobenzenc	0.0220	0.0300	73	80-120	**

Lab Batch #: 741733

Sample: 520130-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzenc	0.0265	0.0300	88	80-120	
4-Bromofluorobenzenc	0.0253	0.0300	84	80-120	

Lab Batch #: 741640

Sample: 318605-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.056	0.053	106	43-116	
2-Fluorophenol	0.037	0.053	70	21-100	
Nitrobenzenc-d5	0.056	0.053	106	35-114	
Phenol-d6	0.019	0.053	36	10-94	
Terphenyl-D14	0.071	0.053	134	33-141	
2,4,6-Tribromophenol	0.053	0.053	100	10-123	

Lab Batch #: 741640

Sample: 318605-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.056	0.053	106	43-116	
2-Fluorophenol	0.037	0.053	70	21-100	
Nitrobenzenc-d5	0.055	0.053	104	35-114	
Phenol-d6	0.020	0.053	38	10-94	
Terphenyl-D14	0.071	0.053	134	33-141	
2,4,6-Tribromophenol	0.053	0.053	100	10-123	

\*\* 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: Ballard Grayburg 5"**

Work Orders : 318605,

Project ID: 2004-00192

Lab Batch #: 741640

Sample: 520083-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.050	0.050	100	43-116	
2-Fluorophenol	0.030	0.050	60	21-100	
Nitrobenzene-d5	0.051	0.050	102	35-114	
Phenol-d6	0.023	0.050	46	10-94	
Terphenyl-D14	0.063	0.050	126	33-141	
2,4,6-Tribromophenol	0.040	0.050	80	10-123	

Lab Batch #: 741640

Sample: 520083-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.047	0.050	94	43-116	
2-Fluorophenol	0.031	0.050	62	21-100	
Nitrobenzene-d5	0.043	0.050	86	35-114	
Phenol-d6	0.018	0.050	36	10-94	
Terphenyl-D14	0.069	0.050	138	33-141	
2,4,6-Tribromophenol	0.046	0.050	92	10-123	

Lab Batch #: 741640

Sample: 520083-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.046	0.050	92	43-116	
2-Fluorophenol	0.028	0.050	56	21-100	
Nitrobenzene-d5	0.049	0.050	98	35-114	
Phenol-d6	0.024	0.050	48	10-94	
Terphenyl-D14	0.058	0.050	116	33-141	
2,4,6-Tribromophenol	0.037	0.050	74	10-123	

\*\* 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.



# BS / BSD Recoveries



Project Name: Ballard Grayburg 5"

Work Order #: 318605

Project ID: 2004-00192

Analyst: BRB

Date Analyzed: 11/27/2008

Lab Batch ID: 741733

Date Prepared: 11/25/2008

Sample: 520130-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

## 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
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.1017	102	0.1	0.0965	97	5	70-125	25	
Toluene	ND	0.1000	0.0925	93	0.1	0.0874	87	6	70-125	25	
Ethylbenzene	ND	0.1000	0.0892	89	0.1	0.0843	84	6	71-129	25	
m,p-Xylenes	ND	0.2000	0.1785	89	0.2	0.1692	85	5	70-131	25	
o-Xylene	ND	0.1000	0.0868	87	0.1	0.0825	83	5	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



# BS / BSD Recoveries



Project Name: Ballard Grayburg 5"

Work Order #: 318605

Analyst: KAN

Lab Batch ID: 741640

Sample: 520083-1-BKS

Date Prepared: 11/25/2008

Batch #: 1

Project ID: 2004-00192

Date Analyzed: 11/26/2008

Matrix: Water

Units: mg/L

## 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
<b>SVOA PAHs List by EPA 8270C</b>											
Acenaphthene	ND	0.050	0.051	102	0.05	0.047	94	8	54-114	25	
Acenaphthylene	ND	0.050	0.056	112	0.05	0.051	102	9	53-113	25	
Anthracene	ND	0.050	0.047	94	0.05	0.043	86	9	56-116	25	
Benzo(a)anthracene	ND	0.050	0.052	104	0.05	0.048	96	8	59-116	25	
Benzo(a)pyrene	ND	0.050	0.052	104	0.05	0.046	92	12	58-118	25	
Benzo(b)fluoranthene	ND	0.050	0.048	96	0.05	0.045	90	6	54-123	25	
Benzo(k)fluoranthene	ND	0.050	0.062	124	0.05	0.056	112	10	52-122	25	H
Benzo(g,h,i)perylene	ND	0.050	0.050	100	0.05	0.050	100	0	47-129	25	
Chrysene	ND	0.050	0.061	122	0.05	0.057	114	7	58-116	25	H
Dibenz(a,h)Anthracene	ND	0.050	0.051	102	0.05	0.045	90	13	46-131	25	
Fluoranthene	ND	0.050	0.053	106	0.05	0.048	96	10	55-120	25	
Fluorene	ND	0.050	0.052	104	0.05	0.048	96	8	56-114	25	
Indeno(1,2,3-c,d)Pyrene	ND	0.050	0.033	66	0.05	0.049	98	39	44-132	25	F
1-Methylnaphthalene	ND	0.050	0.049	98	0.05	0.047	94	4	47-113	25	
2-Methylnaphthalene	ND	0.050	0.052	104	0.05	0.050	100	4	57-106	25	
Naphthalene	ND	0.050	0.049	98	0.05	0.047	94	4	53-110	25	
Phenanthrene	ND	0.050	0.047	94	0.05	0.043	86	9	56-116	25	
Pyrene	ND	0.050	0.056	112	0.05	0.051	102	9	57-119	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



# Form 3 - MS / MSD Recoveries



Project Name: Ballard Grayburg 5"

Work Order #: 318605

Project ID: 2004-00192

Lab Batch ID: 741733

QC-Sample ID: 318605-001 S

Batch #: 1

Matrix: Water

Date Analyzed: 11/28/2008

Date Prepared: 11/25/2008

Analyst: BRB

Reporting Units: mg/L

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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	0.0015	0.1000	0.0954	94	0.1000	0.0992	98	4	70-125	25	
Toluene	ND	0.1000	0.0849	85	0.1000	0.0884	88	3	70-125	25	
Ethylbenzene	0.0014	0.1000	0.0777	76	0.1000	0.0820	81	6	71-129	25	
m,p-Xylenes	0.0023	0.2000	0.1527	75	0.2000	0.1610	79	5	70-131	25	
o-Xylene	ND	0.1000	0.0740	74	0.1000	0.0787	79	7	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 Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit

# Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST  
 12800 West 120 East  
 Odessa, Texas 79765  
 Phone: 432-563-1800  
 Fax: 432-563-1713

Project Manager: Curt Stanley PAGE 01 OF 01

Company Name Basin Environmental Service Technologies, LLC

Company Address: P. O. Box 301

City/State/Zip: Levington, NM 88260

Telephone No: (505) 441-2244

Sampler Signature: *Curt Stanley* e-mail: *custanley@basinenv.com*

Fax No: (505) 396-1429

Report Format:  Standard  TRRP  NPDES

Project Name: BALLARD GRAYBURG 5"

Project #: 2004-00192

Project Loc: Eddy County, NM

PO #: PAA - D.M. Bryant

Report Format:  Standard  TRRP  NPDES

Lab # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	2004, 1 Liter Amber	2004, 1 Liter Amber	Preservation & # of Containers	Matrix	Analyze For:
01	MW-2			11/21/2008	1320		3	X	X	None	GW	<input checked="" type="checkbox"/> TCAP <input checked="" type="checkbox"/> TOTAL <input checked="" type="checkbox"/> Metals As Ag Ba Ca Cd Cr Pb Hg Se <input checked="" type="checkbox"/> Volatiles <input checked="" type="checkbox"/> Semivolatiles <input checked="" type="checkbox"/> BTEX 80215/5030 or 81X 8280 <input checked="" type="checkbox"/> HCl <input checked="" type="checkbox"/> N.O.M. <input checked="" type="checkbox"/> PAH 8270 <input checked="" type="checkbox"/> RUSH TAT (Pre-Schedule) 28 48, 72hrs <input checked="" type="checkbox"/> Standard TAT
02	MW-3			11/21/2008	1335		3	X	X	None	GW	<input checked="" type="checkbox"/> TCAP <input checked="" type="checkbox"/> TOTAL <input checked="" type="checkbox"/> Metals As Ag Ba Ca Cd Cr Pb Hg Se <input checked="" type="checkbox"/> Volatiles <input checked="" type="checkbox"/> Semivolatiles <input checked="" type="checkbox"/> BTEX 80215/5030 or 81X 8280 <input checked="" type="checkbox"/> HCl <input checked="" type="checkbox"/> N.O.M. <input checked="" type="checkbox"/> PAH 8270 <input checked="" type="checkbox"/> RUSH TAT (Pre-Schedule) 28 48, 72hrs <input checked="" type="checkbox"/> Standard TAT

Special Instructions:

Requested by: *Curt Stanley* Date: 11/24/08 Time: 1332  
 Received by: *[Signature]* Date: 11/24/08 Time: 1332

Requested by: *[Signature]* Date: 11-24-08 Time: 0832  
 Received by: *[Signature]* Date: 11-24-08 Time: 0832

Temperature Upon Receipt: -2 °C  
 not frozen

Laboratory Comments:  
 Sample Containers Intact?   
 VOCs Free of Headspace?   
 Labels on container(s)   
 Custom seals on container(s)/caps   
 Sample Sealed by: *[Signature]*  
 Sealed by: *[Signature]*  
 FedEx Luna Star   
 DHL   
 Temperature Upon Receipt: -2 °C

**Environmental Lab of Texas**  
Variance/ Corrective Action Report- Sample Log-In

Client: Plains Basin  
 Date/ Time: 11-24-08 @ 08:32  
 Lab ID #: 319405  
 Initials: JMF

**Sample Receipt Checklist**

				Client Initials
#1 Temperature of container/ cooler?	(Yes)	No	-2.0 refrigerated	
#2 Shipping container in good condition?	(Yes)	No		
#3 Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4 Custody Seals intact on sample bottles/ container? (Kerr)	(Yes)	No	Not Present	
#5 Chain of Custody present?	(Yes)	No		
#6 Sample instructions complete of Chain of Custody?	(Yes)	No		
#7 Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8 Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont./ Lid	
#9 Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10 Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11 Containers supplied by ELOT?	(Yes)	No		
#12 Samples in proper container/ bottle?	(Yes)	No	See Below	
#13 Samples properly preserved?	(Yes)	No	See Below	
#14 Sample bottles intact?	(Yes)	No		
#15 Preservations documented on Chain of Custody?	(Yes)	No		
#16 Containers documented on Chain of Custody?	(Yes)	No		
#17 Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18 All samples received within sufficient hold time?	(Yes)	No	See Below	
#19 Subcontract of sample(s)?	Yes	No	Not Applicable	
#20 VOC samples have zero headspace?	(Yes)	No	Not Applicable	

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

Appendix B  
Release Notification and Corrective Action  
(Form C-141)

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003  
Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

<b>OPERATOR</b>		<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Name of Company Plains Marketing, LP		Contact Camille Reynolds	
Address 5805 East Hwy. 80, Midland, TX 79706		Telephone No. 505-441-0965	
Facility Name Ballard Greyburg 5" #2		Facility Type 5" Steel Pipeline	
Surface Owner BLM	Mineral Owner	Lease No.	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	10	18S	29E					Eddy

Latitude 32° 45' 27.1" Longitude 104° 04' 12.0"

**NATURE OF RELEASE**

Type of Release Crude Oil	Volume of Release 80 barrels	Volume Recovered 0 barrels
Source of Release 5" Steel Pipeline	Date and Hour of Occurrence 9-2-04 @ 06:00	Date and Hour of Discovery 9-2-04 @ 08:45
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Van Barton	
By Whom? Ken Dutton	Date and Hour 9-2-04 @ 14:32	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* External corrosion of the 5" steel pipeline. A line clamp was installed to mitigate the release. The line is a 5-inch steel gathering line that produces approximately 95 barrels of crude per day. The pressure on the line varies from 50 to 70 psi and the gravity of the sour crude oil is 39. The sour crude has an H <sub>2</sub> S content of 20 ppm		
Describe Area Affected and Cleanup Action Taken.* The impacted soil was excavated and stockpiled on plastic. Aerial extent of surface impact was 10 x 6 feet, subsequent excavation of impacted soil resulted in an area of approximately 22 x 23 x 13 feet.		

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCED rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCED marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCED acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Camille Reynolds</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Camille Reynolds	Approved by District Supervisor:	
Title: Remediation Coordinator	Approval Date:	Expiration Date:
E-mail Address: cjrreynolds@psalp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9-7-04	Phone: 505-441-0965	

\* Attach Additional Sheets if Necessary