

**2R - 0053**

**REPORTS**

**DATE:**

**2006**



**PLAINS  
ALL AMERICAN**

30 January 2007

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

Re: Plains All American – Annual Monitoring Report  
1 Site in Lea County, New Mexico

Dear Mr. Stone:

Plains All American is an operator of crude oil pipelines and terminal facilities in the State of New Mexico. Plains All American actively monitors 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 report for the following site:

Ballard Grayburg 5" Site Section 10, Township 18 South, Range 29 East, Eddy County

Also included in the enclosed Annual Monitoring report is a description of the soil remediation activities conducted, subsequent closure, a request to conduct semi-annual groundwater sampling of monitoring well MW-2 and continued quarterly sampling of monitoring well MW-3 based on laboratory results from the annual monitoring period.

Basin prepared this document and has vouched for its accuracy and completeness, and on behalf of Plains All American, I have personally reviewed the document and interviewed Basin in order to verify the accuracy and completeness of this document. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Report for the above facility.

Should you have any questions or comments, please contact me at (505) 441-0965.

Sincerely,

Camille Reynolds  
Remediation Coordinator  
Plains All American

Enclosure

cc: Mr. Mike Bratcher, NMOCD Artesia District II

3112 West Highway 82 • Lovington, NM 88260 • (505) 396-3341

2R-0053

Report

2006

2007 FEB 5 PM 12:00

# ***Basin Environmental Service Technologies, LLC***

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## **2006 ANNUAL MONITORING REPORT**

**BALLARD GRAYBURG 5" SITE  
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 SERVICE TECHNOLOGIES, LLC  
2800 Plains Highway  
P. O. Box 301  
Lovington, New Mexico 88260**

**January 2007**

  
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Ken Dutton  
Project Manager

## TABLE OF CONTENTS

INTRODUCTION.....	1
SITE DESCRIPTION AND BACKGROUND INFORMATION.....	1
FIELD ACTIVITIES.....	2
LABORATORY RESULTS.....	3
SUMMARY.....	3
ANTICIPATED ACTIONS.....	4
LIMITATIONS.....	4
DISTRIBUTION.....	5

### FIGURES

Figure 1 – Site Location Map

Figure 2A – Inferred Groundwater Elevation Map – 30 March 2006

Figure 2B – Inferred Groundwater Elevation Map – 14 June 2006

Figure 2C – Inferred Groundwater Elevation Map – 20 September 2006

Figure 2D – Inferred Groundwater Elevation Map – 14 December 2006

Figure 3A – Groundwater Concentration Map – 30 March 2006

Figure 3B – Groundwater Concentration Map – 14 June 2006

Figure 3C – Groundwater Concentration Map – 20 September 2006

Figure 3D – Groundwater Concentration Map – 14 December 2006

### TABLES

Table 1 – Groundwater Elevation Data

Table 2 – Concentrations of Benzene and BTEX in Groundwater

### APPENDICES

Appendix A – Laboratory Reports

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

## **INTRODUCTION**

Basin Environmental Service Technologies, LLC (Basin), on behalf of Plains Marketing, L.P., (Plains), prepared this annual report in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an annual 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 calendar year 2006 only. Additional site activities and remedial work is summarized in several letters and reports previously submitted to the NMOCD. For reference, the Site Location Map is provided as Figure 1.

Groundwater monitoring was conducted during the four (4) consecutive quarters of 2006 at the request of the NMOCD to assess the potential for impact to the groundwater from dissolved phase constituents. The groundwater monitoring event consisted of measuring static water levels in the monitoring wells, checking for the presence of phase-separated hydrocarbons (PSH) atop the water column, and purging and sampling of each well exhibiting sufficient recharge. Monitoring or recovery 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 02 September 2004, Allstate Environmental Services responded to the pipeline release to repair the pipeline and excavate the impacted soil. At the request of Plains, Basin performed subsequent remediation of the site. The Ballard Grayburg 5" Pipeline was subsequently de-oiled, cold cut and capped. Approximately 80 barrels of crude oil were released from the Plains pipeline and 0 barrels were recovered. The site is characterized by a right-of-way for the pipeline in a pasture utilized for cattle grazing. The initial visibly surface stained area included the release point covering an area approximately 22 feet long by 23 feet wide. Excavation activities during the emergency response and subsequent remediation of the site covered an area approximately 225 feet long by 60 feet wide and ranged from approximately 10 to 20 feet below ground surface (bgs), respectively. Excavated soil was placed on a 6-mil poly-liner for future remedial action.

A Preliminary Site Investigation Report (PSIR) and Remediation Plan, dated 14 November 2004 was submitted and approved by NMOCD, Artesia District II and the U. S. Department of the Interior, Bureau of Land Management (BLM), Carlsbad Office. The approved plan included excavating to approximately 12 to 15 feet bgs, collecting confirmation soil samples, installing a 40-mil poly liner, blending of the clean segregated overburden and impacted soil on-site and 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 included excavating to a depth of approximately 18 to 20 feet bgs, installation of a 40-mil poly liner at the floor of the excavation, blending the excavated soil with clean segregated overburden, backfilling the excavation with blended stockpiled material on-site, collecting soil

samples at 500 cubic yard intervals ensuring TPH constituent concentrations were below 1000 mg/kg and reseed with approved BLM grass seed.

Based on initial delineation of the release site, two (2) groundwater monitoring wells were installed to evaluate the quality of groundwater and one (1) recovery well due to the presents of PSH from the soil samples during drilling activities. During the installation of the two (2) groundwater monitoring wells (October 2004), there were no visual signs of PSH and laboratory results of the selected soil samples did not indicate BTEX and TPH constituent concentrations above laboratory method detection limits or were significantly below NMOCD limits for the soil samples submitted to the laboratory. Two attempts to install an up gradient monitoring well proved futile due to drilling into subsurface limestone caverns. A hydrocarbon absorbent sock was installed in the recovery well to absorb the limited amount of crude oil on the groundwater and was replaced on a monthly basis. During excavation of the release area, recovery well RW-1 collapsed and was rendered unusable. The approved PSIR electronic revision stipulated that an additional recovery well north-northwest of the plugged and abandoned recovery well RW-1 be attempted once backfilling of the excavation was completed. In July 2006, an attempt to install the recovery well was initiated, however, as mentioned above, subsurface limestone caverns were encountered which negated the recovery well installation.

Currently, there are two (2) groundwater monitoring wells, MW-2 and MW-3 which are down gradient, on site.

## **FIELD ACTIVITIES**

The site monitoring wells were gauged and sampled on 30 March 2006, 14 June 2006, 20 September 2006 and 14 December 2006. During the quarterly sampling events, the monitoring wells, designated to be sampled, 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 samplers. 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 approved disposal in Monument, New Mexico.

Locations of the groundwater monitoring wells and the inferred groundwater elevations, which were constructed from the measurements collected during the quarterly monitoring events, are depicted on Figures 2A through 2D. The groundwater elevation data are 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 depth to groundwater, as measured from the top of the well casing, was 186.58, from the 14 December 2006 monitoring event.

A measurable thickness of PSH was detected in recovery well RW-1 during the first (1<sup>st</sup>) quarter monitoring event. On 11 May 2006, recovery well RW-1 was plugged and abandoned as approved by NMOCD Santa Fe. A maximum thickness of 0.01 foot was measured and is shown on Table 1. Approximately one-half gallon of PSH was recovered from the site during the reporting period.

## **LABORATORY RESULTS**

Groundwater samples were collected from the groundwater monitoring wells (MW-2 and MW-3) during the quarterly monitoring events and were delivered to Environmental Laboratory of Texas, Odessa, Texas for determination of benzene, toluene, ethylbenzene and xylenes (BTEX) constituent concentrations by EPA Method SW846-8021b. A summary of BTEX constituent concentrations for 2006 is presented in Table 2 and the laboratory reports are provided as Appendix A. Recovery well RW-1 was not sampled due to the presence of measurable PSH.

Laboratory results for the two (2) site groundwater samples, obtained during the four (4) sampling periods, indicated that benzene and total BTEX constituent concentrations for monitoring well MW-2 were at or below applicable NMOCD limits for the four (4) monitoring events. Laboratory results indicated that benzene and total BTEX constituent concentrations for monitoring well MW-3 were below NMOCD limits for three (3) of the monitoring events with the fourth event on 14 December 2006 slightly exceeding NMOCD benzene limits at 0.011 mg/L. Laboratory results 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 monitoring period. Currently, there are two (2) groundwater monitoring wells (MW-2 and MW-3) on-site. Based on the limited data, groundwater elevations at the site are relatively similar and research of the New Mexico State Engineers Office reflected a general groundwater gradient to the south-southwest.

Laboratory results for the two (2) site groundwater samples, obtained during the four (4) sampling periods, indicated that benzene and total BTEX constituent concentrations for monitoring well MW-2 were at or below applicable NMOCD limits for the four (4) monitoring events. Laboratory results indicated that benzene and total BTEX constituent concentrations for monitoring well MW-3 were below NMOCD limits for three (3) of the monitoring events with the fourth event on 14 December 2006 slightly exceeding NMOCD benzene limits.

## **ANTICIPATED ACTIONS**

The NMOCD approved soil remediation activities at the Ballard Grayburg 5" site were completed and a site closure was submitted and approved by NMOCD Santa Fe. Based on the laboratory results from eight (8) consecutive sampling events which indicated monitoring well MW-2 exhibited BTEX concentrations at or significantly below NMOCD limits, Plains requests semi-annual groundwater monitoring for MW-2 for 2007. Continued quarterly groundwater monitoring for MW-3 and annual reporting will be conducted in 2007.

## **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 that 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 that 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**

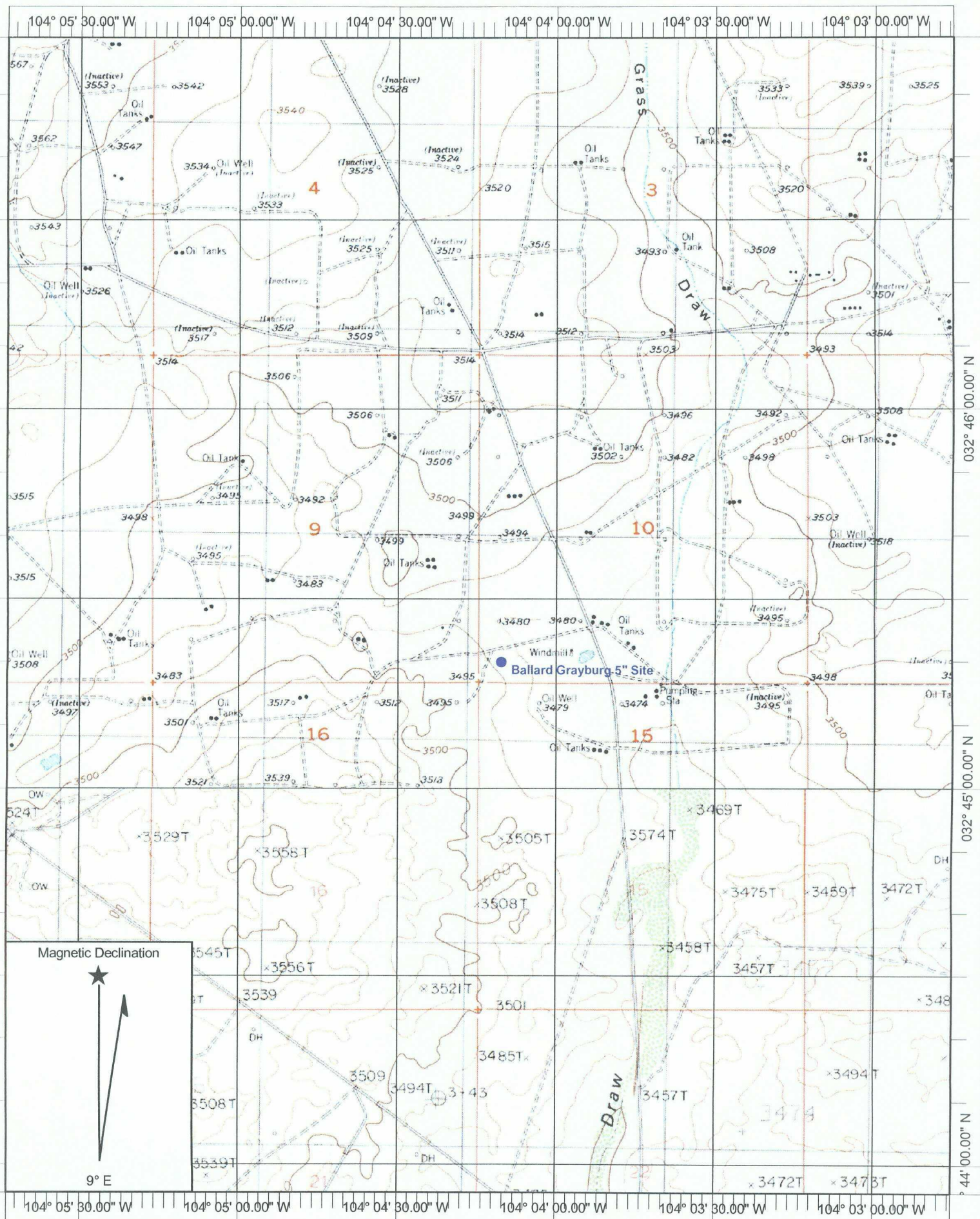
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New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
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[kdutton@basinenv.com](mailto:kdutton@basinenv.com)

Copy Number: 1

# FIGURES

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**FIGURE 1**  
**SITE LOCATION MAP**



**FIGURE 2A**

**INFERRED GROUNDWATER  
ELEVATION MAP – 30 MARCH 2006**

Plains Marketing, L.P.  
 Ballard Grayburg 5" Site  
 SW/SW S10, T18S, R29E  
 Eddy County, New Mexico  
 SRS: 2004-00192



LEGEND

- Recovery Well
- Soil Boring
- Monitor Well
- Groundwater Elevation in Feet (3311)

Capped Plains Ballard  
 Grayburg 5" Pipeline



Plugged and Abandoned Yates  
 Petroleum Well



Release Point

21 Feet

RW-1  
 (3311.38)

Backfilled Excavated Area

60 Feet

100 Feet

Backfilled Excavated Area

225 Feet

MW-2



(3311.33)

MW-3



(3311.32)

DESCRIPTION

Figure 2A  
 Inferred Groundwater Elevation Map  
 30 March 2006

**FIGURE 2B**

**INFERRED GROUNDWATER  
ELEVATION MAP – 14 JUNE 2006**

Plains Marketing, L.P.  
 Ballard Grayburg 5" Site  
 SW/SW S10, T18S, R29E  
 Eddy County, New Mexico  
 SRS: 2004-00192

SB-2

SB-1

SB-3

Capped Plains Ballard  
 Grayburg 5" Pipeline

Capped Plains Ballard  
 Grayburg 5" Pipeline

Plugged and Abandoned Yates  
 Petroleum Well

Release Point

RW-1  
 P&A: 11 May 2007

LEGEND

- Recovery Well
- Soil Boring
- Monitor Well
- Groundwater  
 (3311) Elevation In Feet

21 Feet

60 Feet

Backfilled Excavated Area

100 Feet

Backfilled Excavated Area

225 Feet

MW-3

(3311.32)

MW-2

(3311.34)

DESCRIPTION

Figure 2B  
 Inferred Groundwater Elevation Map  
 14 June 2006



**FIGURE 2C**

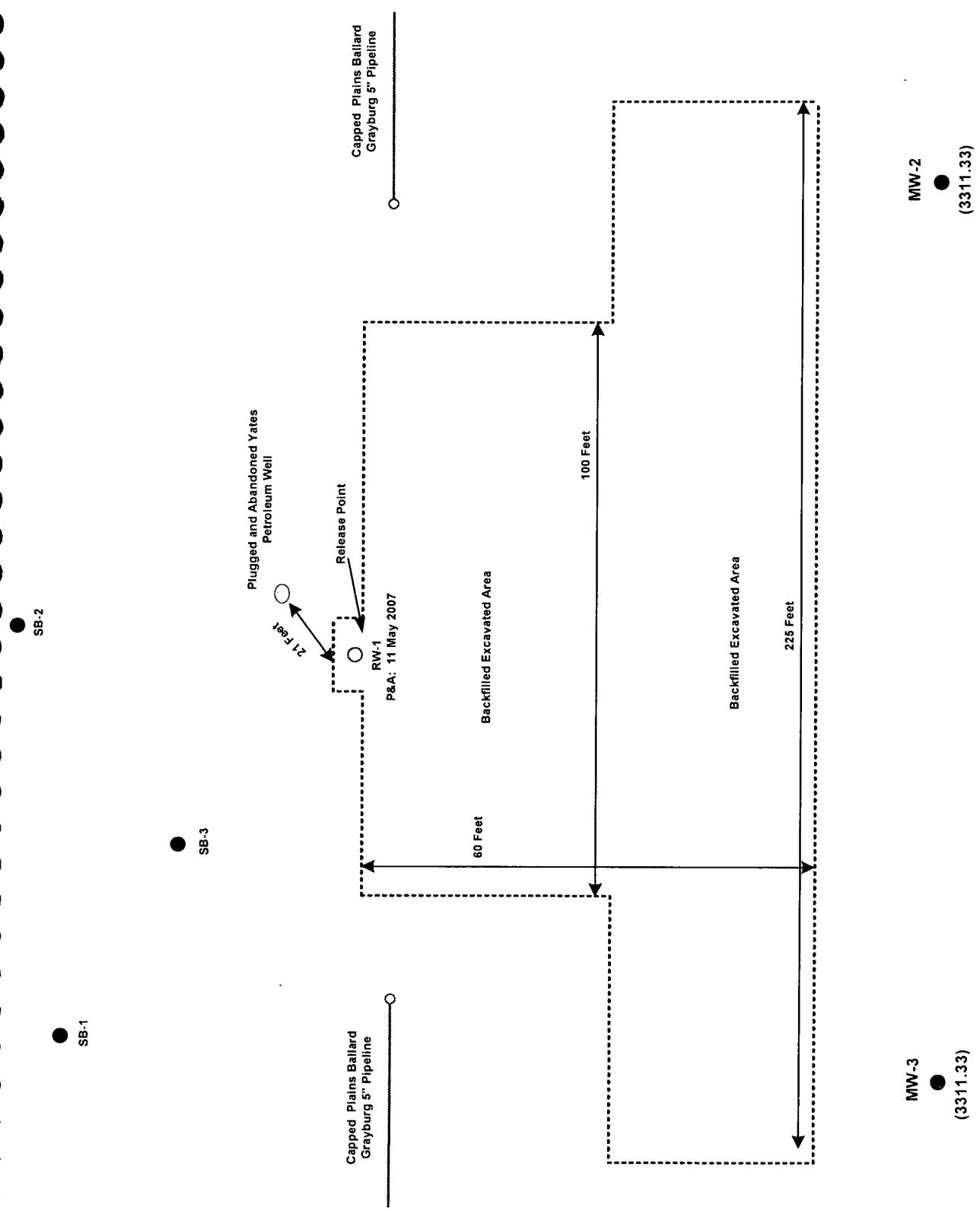
**INFERRED GROUNDWATER  
ELEVATION MAP –  
20 SEPTEMBER 2006**

Plains Marketing, L.P.  
 Ballard Grayburg 5" Site  
 SW/4 SW S10, T18S, R29E  
 Eddy County, New Mexico  
 SRS: 2004-00192



**LEGEND**

- Recovery Well
- Soil Boring
- Monitor Well
- Groundwater Elevation In Feet (3311)



DESCRIPTION
Figure 2C Inferred Groundwater Elevation Map 20 September 2006

**FIGURE 2D**

**INFERRED GROUNDWATER  
ELEVATION MAP –  
14 DECEMBER 2006**

Plains Marketing, L.P.  
 Ballard Grayburg 5" Site  
 SW/4 SW S10, T18S, R29E  
 Eddy County, New Mexico  
 SRS: 2004-00192



LEGEND

- Recovery Well
- Soil Boring
- Monitor Well
- Groundwater Elevation in Feet (3311)

Capped Plains Ballard  
 Grayburg 5" Pipeline



Plugged and Abandoned Yates  
 Petroleum Well



21 Feet

Release Point

RW-1  
 P&A: 11 May 2007



Backfilled Excavated Area

60 Feet

100 Feet

Backfilled Excavated Area

225 Feet

MW-2



(3311.32)

MW-3



(3311.33)

Capped Plains Ballard  
 Grayburg 5" Pipeline



DESCRIPTION

Figure 2D  
 Inferred Groundwater Elevation Map  
 14 December 2006

**FIGURE 3A**

**GROUNDWATER CONCENTRATION**

**MAP – 30 MARCH 2006**

Plains Marketing, L.P.  
Ballard Grayburg 5" Site  
SW/SW S10, T18S, R29E  
Eddy County, New Mexico  
SRS: 2004-00192



Capped Plains Ballard  
Grayburg 5" Pipeline

Capped Plains Ballard  
Grayburg 5" Pipeline

P&A: 11 May 2007  
RW-1

Plugged and Abandoned Yates  
Petroleum Well

21 Feet

Release Point

60 Feet

100 Feet

225 Feet

Backfilled Excavated Area

Backfilled Excavated Area

LEGEND

- Recovery Well
- Soil Boring
- Monitor Well
- mg/L = milligrams per liter
- B - Benzene
- T - Toluene
- E - Ethylbenzene
- X - Xylenes

MW-2  
●  
Benzene: 0.003 mg/L  
BTEX: 0.006 mg/L

MW-3  
●  
Benzene: 0.009 mg/L  
BTEX: 0.012 mg/L

DESCRIPTION

Figure 3A  
Groundwater Concentration Map  
30 March 2006

**FIGURE 3B**

**GROUNDWATER CONCENTRATION**

**MAP – 14 JUNE 2006**

Plains Marketing, L.P.  
Ballard Grayburg 5" Site  
SW/SW S10, T18S, R29E  
Eddy County, New Mexico  
SRS: 2004-00192



Capped Plains Ballard  
Grayburg 5" Pipeline

Capped Plains Ballard  
Grayburg 5" Pipeline

P8A: 11 May 2007  
RW-1

Plugged and Abandoned Yates  
Petroleum Well

21 Feet

Release Point

Backfilled Excavated Area

60 Feet

100 Feet

Backfilled Excavated Area

225 Feet

LEGEND

- Recovery Well
- Soil Boring
- Monitor Well
- mg/L = milligrams per liter
- B - Benzene
- T - Toluene
- E - Ethylbenzene
- X - Xylenes

MW-3

Benzene: 0.005 mg/L  
BTEx: 0.005 mg/L

MW-2

Benzene: 0.005 mg/L  
BTEx: 0.006 mg/L

DESCRIPTION

Figure 3B  
Groundwater Concentration Map  
14 June 2006



**FIGURE 3C**

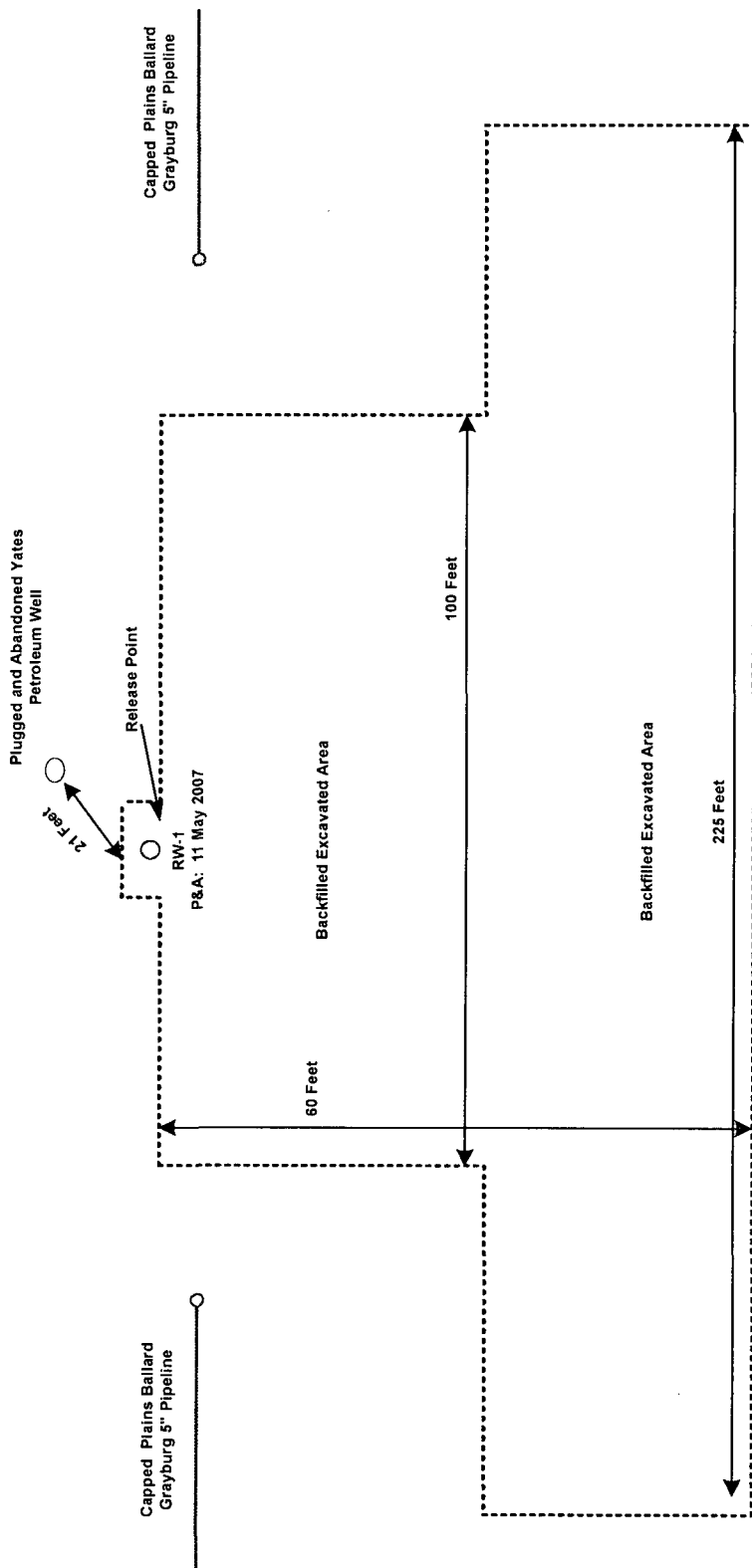
**GROUNDWATER CONCENTRATION**  
**MAP – 20 SEPTEMBER 2006**

Plains Marketing, L.P.  
Ballard Grayburg 5" Site  
SW/SW S10, T18S, R29E  
Eddy County, New Mexico  
SRS: 2004-00192



# LEGEND

- Recovery Well
- Soil Boring
- Monitor Well
- mg/L = milligrams per liter
- B - Benzene
- T - Toluene
- E - Ethylbenzene
- X - Xylenes

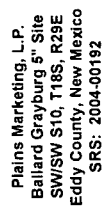


## DESCRIPTION

Figure 3C  
Groundwater Concentration Map  
20 September 2006

**FIGURE 3D**

**GROUNDWATER CONCENTRATION**  
**MAP – 14 DECEMBER 2006**



**Capped Plains Ballard  
Grayburg 5" Pipeline**

RW-1  
P&A: 11 May 2007

## Plugged and Abandoned Yates Petroleum Well

**Release Point**

RW-1  
P&A: 11 May 2007

**Backfilled Excavated Area**

**60 Feet**

**100 Feet**

### Backfilled Excavated Area

**225 Feet**

**MW-3**

**MW-2**

Benzene: 0.011 mg/L  
BTEX: 0.017 mg/L

**Benzene: 0.010 mg/L**  
**BTEX: 0.012 mg/L**

## LEGEND

- Recovery Well  
Soil Boring  
Monitor Well
- mg/L = milligrams per liter  
B - Benzene  
T - Toluene  
E - Ethylbenzene  
X - Xylenes

DESCRIPTION

Figure 3D  
Groundwater Concentration Map  
14 December 2006

# TABLES

**TABLE 1**

**GROUNDWATER ELEVATION DATA**

TABLE 1

## GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
 BALLARD-GRAYBURG 5"  
 EDDY COUNTY, NEW MEXICO  
 PLAINS SRS NO. 2004-00192

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
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

TABLE 1

## GROUNDWATER ELEVATION DATA (CONT)

PLAINS MARKETING, L.P.  
 BALLARD-GRAYBURG 5"  
 EDDY COUNTY, NEW MEXICO  
 PLAINS SRS NO. 2004-00192

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



**TABLE 2**

**CONCENTRATIONS OF BENZENE  
AND BTEX IN GROUNDWATER**

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

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030				Method: 160.1	
		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M.P.- XYLENES (mg/L)	O-XYLENES (mg/L)	TDS (mg/L)
MW-2	12/04/04	<0.001	<0.001	<0.001	<0.001	<0.001	7730
	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	0.010	0.002	<0.001	0.001	<0.001	
MW-3	12/04/04	<0.001	<0.001	<0.001	<0.001	<0.001	8530
	03/29/05	0.054	0.004	<0.001	<0.001	<0.001	
	05/26/05	0.014	0.003	<0.001	<0.001	<0.001	
	08/11/05	0.002	<0.001	<0.001	<0.001	<0.001	
	12/27/05	0.024	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	0.011	0.003	<0.001	0.003	<0.001	
NMOC CRITERIA		0.01	0.75	0.75	TOTAL XYLENES	0.62	

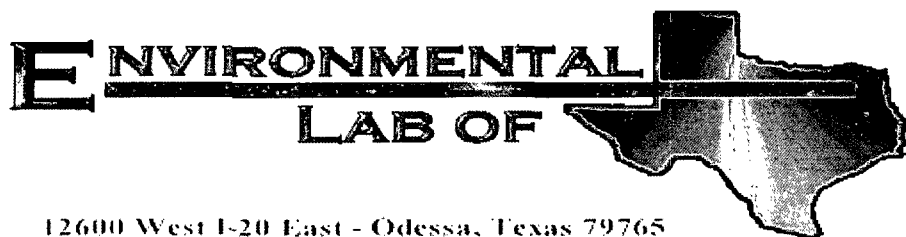


## APPENDICES



# **APPENDIX A**

## **LABORATORY REPORTS**



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Ballard- Grayburg 5inch

Project Number: EMS: 2004-00192

Location: Eddy County, NM

Lab Order Number: 6L15011

Report Date: 12/22/06

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	6L15011-01	Water	12/14/06 13:55	12-15-2006 14:45
MW-3	6L15011-02	Water	12/14/06 11:25	12-15-2006 14:45

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-2 (6L15011-01) Water</b>									
<b>Benzene</b>	<b>0.0108</b>	0.00100	mg/L	1	EL62008	12/20/06	12/21/06	EPA 8021B	
<b>Toluene</b>	<b>0.00179</b>	0.00100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>I [0.000387]</b>	0.00100	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.00138</b>	0.00100	"	"	"	"	"	"	
<b>Xylene (o)</b>	<b>I [0.000346]</b>	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		83.2 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		82.2 %	80-120		"	"	"	"	
<b>MW-3 (6L15011-02) Water</b>									
<b>Benzene</b>	<b>0.0117</b>	0.00100	mg/L	1	EL62008	12/20/06	12/21/06	EPA 8021B	
<b>Toluene</b>	<b>0.00286</b>	0.00100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>I [0.000845]</b>	0.00100	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.00277</b>	0.00100	"	"	"	"	"	"	
<b>Xylene (o)</b>	<b>I [0.000391]</b>	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		88.0 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		83.0 %	80-120		"	"	"	"	

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**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL62008 - EPA 5030C (GC)**

**Blank (EL62008-BLK1)**

Prepared & Analyzed: 12/20/06

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	41.7		ug/l	40.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	32.6		"	40.0		81.5	80-120			

**LCS (EL62008-BS1)**

Prepared & Analyzed: 12/20/06

Benzene	0.0468	0.00100	mg/L	0.0500		93.6	80-120			
Toluene	0.0469	0.00100	"	0.0500		93.8	80-120			
Ethylbenzene	0.0500	0.00100	"	0.0500		100	80-120			
Xylene (p/m)	0.0893	0.00100	"	0.100		89.3	80-120			
Xylene (o)	0.0431	0.00100	"	0.0500		86.2	80-120			
Surrogate: a,a,a-Trifluorotoluene	34.7		ug/l	40.0		86.8	80-120			
Surrogate: 4-Bromofluorobenzene	40.0		"	40.0		100	80-120			

**Calibration Check (EL62008-CCV1)**

Prepared & Analyzed: 12/20/06

Benzene	56.0		ug/l	50.0		112	80-120			
Toluene	48.1		"	50.0		96.2	80-120			
Ethylbenzene	42.2		"	50.0		84.4	80-120			
Xylene (p/m)	81.5		"	100		81.5	80-120			
Xylene (o)	41.4		"	50.0		82.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	39.4		"	40.0		98.5	80-120			
Surrogate: 4-Bromofluorobenzene	33.9		"	40.0		84.8	80-120			

**Matrix Spike (EL62008-MS1)**

Source: 6L15012-01

Prepared: 12/20/06 Analyzed: 12/21/06

Benzene	0.0482	0.00100	mg/L	0.0500	0.00450	87.4	80-120			
Toluene	0.0434	0.00100	"	0.0500	0.000269	86.3	80-120			
Ethylbenzene	0.0438	0.00100	"	0.0500	ND	87.6	80-120			
Xylene (p/m)	0.0882	0.00100	"	0.100	0.000759	87.4	80-120			
Xylene (o)	0.0432	0.00100	"	0.0500	ND	86.4	80-120			
Surrogate: a,a,a-Trifluorotoluene	32.0		ug/l	40.0		80.0	80-120			
Surrogate: 4-Bromofluorobenzene	34.7		"	40.0		86.8	80-120			



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Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL62008 - EPA 5030C (GC)**

**Matrix Spike Dup (EL62008-MSD1)**

**Source: 6L15012-01**

Prepared: 12/20/06 Analyzed: 12/21/06

Benzene	0.0455	0.00100	mg/L	0.0500	0.00450	82.0	80-120	6.38	20	
Toluene	0.0421	0.00100	"	0.0500	0.000269	83.7	80-120	3.06	20	
Ethylbenzene	0.0431	0.00100	"	0.0500	ND	86.2	80-120	1.61	20	
Xylene (p/m)	0.0853	0.00100	"	0.100	0.000759	84.5	80-120	3.37	20	
Xylene (o)	0.0425	0.00100	"	0.0500	ND	85.0	80-120	1.63	20	
Surrogate: <i>a,a,a</i> -Trifluorotoluene	34.1		ug/l	40.0		85.2	80-120			
Surrogate: 4-Bromofluorobenzene	34.9		"	40.0		87.2	80-120			

Environmental Lab of Texas

*The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.*

Page 4 of 5

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Midland TX, 79706-4476

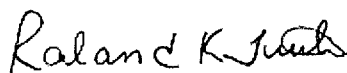
Project: Ballard- Grayburg Sinch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:



Date:

12/22/2006

Raland K. Tuttle, Lab Manager  
Celey D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
LaTasha Cornish, Chemist  
Sandra Sanchez, Lab Tech.

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If you have received this material in error, please notify us immediately at 432-563-1800.

12600 West I-20 East  
Odessa, Texas 79765

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

**Project Manager:** Ken Dutton

PAGE 01 OF 01

**Project Name: BALLARD-GRAYBURG 5" GATHERING**

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: (505) 441-2124

**Fax No:** (505) 396-1429

Report Format: ☒ Standard ☐

**Sampler Signature:**

kad@basineny.com

[illegible]

**Special Instructions:**

Relinquished by:

Relinquished by: Neal Dutton

Date	Time
14 DEC 06	1543

Received by: *Z. M. ...*

Received by: Linda Blackwood  
Received by:

Date	12/14/06	Time	3:45
------	----------	------	------

Relinquished by:

Reinforced by:  
Dina Dackward

Date	12/5/04	Time	2:45
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Received by EL-OT:

Received by ELOT: June 1967

Date	12/15/00	Time	2:40
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	Laboratory Comments:
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**Sample Containers Intact?**

## VOCs Free of Headspace?

Labels on container(s)  
Custody seals on container(s)

Custody seals on cooler(s)

by Sampler/Client Rep. ?

by Gerner? - UPS - DH

Temperature Upon Receipt: \_\_\_\_\_

.....

# Environmental Lab of Texas

## Variance/ Corrective Action Report- Sample Log-In

Client Plains  
 Date/ Time: 12/15/00 2:45  
 Lab ID #: 6615011  
 Initials: OK

### Sample Receipt Checklist

Client Initials

	Yes	No	5.0 °C	
#1 Temperature of container/ cooler?	Yes	No		
#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	

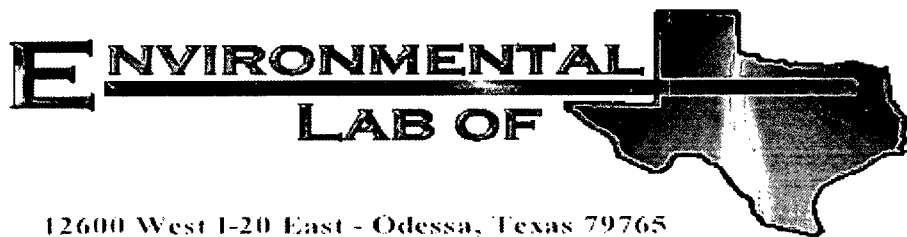
### Variance Documentation

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



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Ballard- Grayburg 5inch

Project Number: EMS: 2004-00192

Location: Eddy County, NM

Lab Order Number: 6122011

Report Date: 09/29/06

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	6122011-01	Water	09/20/06 15:48	09-22-2006 11:30
MW-3	6122011-02	Water	09/20/06 12:14	09-22-2006 11:30

Plains All American EH & S  
1301 S. County Road 1150  
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Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-2 (6122011-01) Water</b>									
<b>Benzene</b>	<b>0.00339</b>	0.00100	mg/L	1	E162607	09/26/06	09/27/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		102 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	80-120		"	"	"	"	
<b>MW-3 (6122011-02) Water</b>									
<b>Benzene</b>	<b>0.00458</b>	0.00100	mg/L	1	E162607	09/26/06	09/27/06	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		84.8 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %	80-120		"	"	"	"	

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Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI62607 - EPA 5030C (GC)**

**Blank (EI62607-BLK1)**

Prepared & Analyzed: 09/26/06

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: <i>a,a,a</i> -Trifluorotoluene	42.5		ug/l	40.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	46.9		"	40.0		117	80-120			

**LCS (EI62607-BS1)**

Prepared & Analyzed: 09/26/06

Benzene	0.0556	0.00100	mg/L	0.0500		111	80-120			
Toluene	0.0472	0.00100	"	0.0500		94.4	80-120			
Ethylbenzene	0.0422	0.00100	"	0.0500		84.4	80-120			
Xylene (p/m)	0.0914	0.00100	"	0.100		91.4	80-120			
Xylene (o)	0.0442	0.00100	"	0.0500		88.4	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	37.8		ug/l	40.0		94.5	80-120			
Surrogate: 4-Bromofluorobenzene	45.7		"	40.0		114	80-120			

**Calibration Check (EI62607-CCV1)**

Prepared: 09/26/06 Analyzed: 09/27/06

Benzene	54.2		ug/l	50.0		108	80-120			
Toluene	47.3		"	50.0		94.6	80-120			
Ethylbenzene	46.3		"	50.0		92.6	80-120			
Xylene (p/m)	90.9		"	100		90.9	80-120			
Xylene (o)	44.3		"	50.0		88.6	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	43.1		"	40.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	45.0		"	40.0		112	80-120			

**Matrix Spike (EI62607-MS1)**

Source: 6122006-04

Prepared: 09/26/06 Analyzed: 09/27/06

Benzene	0.0455	0.00100	mg/L	0.0500	ND	91.0	80-120			
Toluene	0.0405	0.00100	"	0.0500	ND	81.0	80-120			
Ethylbenzene	0.0466	0.00100	"	0.0500	ND	93.2	80-120			
Xylene (p/m)	0.0805	0.00100	"	0.100	ND	80.5	80-120			
Xylene (o)	0.0412	0.00100	"	0.0500	ND	82.4	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	33.3		ug/l	40.0		83.2	80-120			
Surrogate: 4-Bromofluorobenzene	41.6		"	40.0		104	80-120			

Environmental Lab of Texas

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Page 3 of 5



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Midland TX, 79706-4476

Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch E162607 - EPA 5030C (GC)**

Matrix Spike Dup (E162607-MSD1)		Source: 6122006-04			Prepared: 09/26/06 Analyzed: 09/27/06					
Benzene	0.0528	0.00100	mg/L	0.0500	ND	106	80-120	15.2	20	
Toluene	0.0483	0.00100	"	0.0500	ND	96.6	80-120	17.6	20	
Ethylbenzene	0.0453	0.00100	"	0.0500	ND	90.6	80-120	2.83	20	
Xylene (p/m)	0.0938	0.00100	"	0.100	ND	93.8	80-120	15.3	20	
Xylene (o)	0.0454	0.00100	"	0.0500	ND	90.8	80-120	9.70	20	
Surrogate: <i>a,a,a</i> -Trifluorotoluene	32.2		ug/l	40.0		80.5	80-120			
Surrogate: 4-Bromofluorobenzene	36.4		"	40.0		91.0	80-120			

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg Sinch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:

*Raland K. Tuttle*

Date:

9/29/2006

Raland K. Tuttle, Lab Manager  
Celey D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
LaTasha Cornish, Chemist  
Sandra Sanchez, Lab Tech.

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

Client: Plains  
 Date/Time: 9/12/06 11:30  
 Job ID #: 612201  
 Initials: CK

**Sample Receipt Checklist**

Client Initials

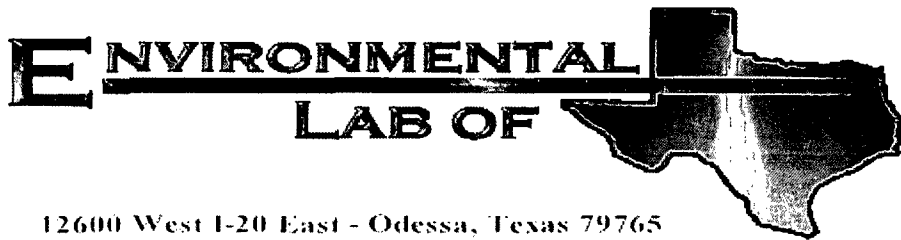
Temperature of container/ cooler?	Yes	No	15 °C	
Shipping container in good condition?	<u>Yes</u>	No		
Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	Not Present	
Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present	
Chain of Custody present?	<u>Yes</u>	No		
Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
Containers supplied by ELOT?	<u>Yes</u>	No		
Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
Samples properly preserved?	<u>Yes</u>	No	See Below	
Sample bottles intact?	<u>Yes</u>	No		
Preservations documented on Chain of Custody?	<u>Yes</u>	No		
Containers documented on Chain of Custody?	<u>Yes</u>	No		
Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
VOC samples have zero headspace?	<u>Yes</u>	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



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Ballard- Grayburg 5inch

Project Number: EMS: 2004-00192

Location: Eddy Co., NM

Lab Order Number: 6F15015

Report Date: 06/23/06

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	6F15015-01	Water	06/14/06 11:29	06/15/06 12:45
MW-3	6F15015-02	Water	06/14/06 12:44	06/15/06 12:45

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-2 (6F15015-01) Water</b>									
<b>Benzene</b>	<b>0.00507</b>	0.00100	mg/L	1	EF62102	06/21/06	06/21/06	EPA 8021B	
<b>Toluene</b>	<b>0.00161</b>	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		107 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		82.2 %	80-120		"	"	"	"	

**MW-3 (6F15015-02) Water**

<b>Benzene</b>	<b>0.00502</b>	0.00100	mg/L	1	EF62102	06/21/06	06/21/06	EPA 8021B	
<b>Toluene</b>	<b>1 [0.000551]</b>	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		105 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		93.5 %	80-120		"	"	"	"	

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EF62102 - EPA 5030C (GC)**

**Blank (EF62102-BLK1)**

Prepared & Analyzed: 06/21/06

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	40.8		ug/l	40.0		102	80-120			
Surrogate: 4-Bromofluorobenzene	32.0		"	40.0		80.0	80-120			

**LCS (EF62102-BS1)**

Prepared & Analyzed: 06/21/06

Benzene	0.0523	0.00100	mg/L	0.0500		105	80-120			
Toluene	0.0568	0.00100	"	0.0500		114	80-120			
Ethylbenzene	0.0548	0.00100	"	0.0500		110	80-120			
Xylene (p/m)	0.119	0.00100	"	0.100		119	80-120			
Xylene (o)	0.0582	0.00100	"	0.0500		116	80-120			
Surrogate: a,a,a-Trifluorotoluene	42.8		ug/l	40.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	41.1		"	40.0		103	80-120			

**Calibration Check (EF62102-CCV1)**

Prepared & Analyzed: 06/21/06

Benzene	58.5		ug/l	50.0		117	80-120			
Toluene	59.9		"	50.0		120	80-120			
Ethylbenzene	58.1		"	50.0		116	80-120			
Xylene (p/m)	119		"	100		119	80-120			
Xylene (o)	59.6		"	50.0		119	80-120			
Surrogate: a,a,a-Trifluorotoluene	43.0		"	40.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	38.6		"	40.0		96.5	80-120			

**Matrix Spike (EF62102-MS1)**

Source: 6F15011-01

Prepared & Analyzed: 06/21/06

Benzene	0.0523	0.00100	mg/L	0.0500	ND	105	80-120			
Toluene	0.0579	0.00100	"	0.0500	ND	116	80-120			
Ethylbenzene	0.0509	0.00100	"	0.0500	ND	102	80-120			
Xylene (p/m)	0.119	0.00100	"	0.100	ND	119	80-120			
Xylene (o)	0.0598	0.00100	"	0.0500	ND	120	80-120			
Surrogate: a,a,a-Trifluorotoluene	44.0		ug/l	40.0		110	80-120			
Surrogate: 4-Bromofluorobenzene	43.6		"	40.0		109	80-120			

Environmental Lab of Texas

*The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.*

Page 3 of 5



Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg Sinch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch EF62102 - EPA 5030C (GC)**

Matrix Spike Dup (EF62102-MSD1)	Source: 6F15011-01			Prepared & Analyzed: 06/21/06						
Benzene	0.0579	0.00100	mg/L	0.0500	ND	116	80-120	9.95	20	
Toluene	0.0576	0.00100	"	0.0500	ND	115	80-120	0.866	20	
Ethylbenzene	0.0578	0.00100	"	0.0500	ND	116	80-120	12.8	20	
Xylene (p/m)	0.120	0.00100	"	0.100	ND	120	80-120	0.837	20	
Xylene (o)	0.0580	0.00100	"	0.0500	ND	116	80-120	3.39	20	
Surrogate: <i>a,a,a</i> -Trifluorotoluene	40.7		ug/l	40.0		102	80-120			
Surrogate: 4-Bromofluorobenzene	41.0		"	40.0		102	80-120			

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

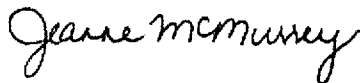
Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

#### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:



Date: 6/23/2006

Raland K. Tuttle, Lab Manager  
Celey D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
La Tasha Cornish, Chemist  
Sandra Sanchez, Lab Tech.


This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

**112600 West I-20 East  
Odessa, Texas 79763**  
**Phone: 915-563-1800**  
**Fax: 915-563-1713**

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Name: Bailland-Grayburg  
Project #: EMS#2004-00192  
Project Loc: Eddy Co., NM  
PO #: PAH / C. Reynolds

Project Manager: Ken Outton  
Company Name Basin Environmental  
Company Address: P.O. Box 301  
City/State/Zip: Lovington, NM 88240  
Telephone No: 505-442-124 Fax No: 505-396-1429  
Sampler Signature: 

[illegible]

**Special Instructions:**

Sample Containers Intact?  
Temperature Upon Receipt:  
Laboratory Comments:

2	2
3	3

Relinquished by:	Date	Time	Received by:	Date	Time
<i>[Signature]</i>	6/15/06	7:38	<i>[Signature]</i>	6/15/06	7:43
Relinquished by:	Date	Time	Received by ELDT:	Date	Time
<i>[Signature]</i>	6/15/06	12:45	<i>[Signature]</i>	6/15/06	12:45

50

und seals 2 (abel)

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

Plains

Time: 6/15/08 12:45

Ref #: 10F15015

CS: ck

**Sample Receipt Checklist**

Temperature of container/cooler?	Yes	No	<u>Q, S</u>	C
Is container/cooler in good condition?	<u>Yes</u>	No		
Body Seals intact on shipping container/cooler?	<u>Yes</u>	No	Not present	
Body Seals intact on sample bottles?	<u>Yes</u>	No	Not present	
Chain of custody present?	<u>Yes</u>	No		
Chain of custody Instructions complete on Chain of Custody?	<u>Yes</u>	No		
Chain of Custody signed when relinquished and received?	<u>Yes</u>	No		
Chain of custody agrees with sample label(s)	<u>Yes</u>	No		
Container labels legible and intact?	<u>Yes</u>	No		
Sample Matrix and properties same as on chain of custody?	<u>Yes</u>	No		
Samples in proper container/bottle?	<u>Yes</u>	No		
Samples properly preserved?	<u>Yes</u>	No		
Sample bottles intact?	<u>Yes</u>	No		
Observations documented on Chain of Custody?	<u>Yes</u>	No		
Containers documented on Chain of Custody?	<u>Yes</u>	No		
Sufficient sample amount for indicated test?	<u>Yes</u>	No		
Samples received within sufficient hold time?	<u>Yes</u>	No		
Samples have zero headspace?	<u>Yes</u>	No	Not Applicable	

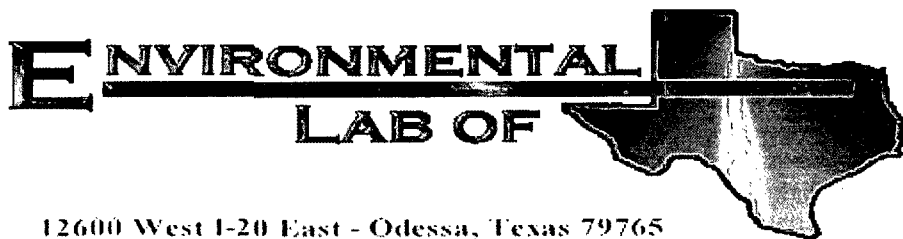
Other observations:

**Variance Documentation:**

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

Regarding:

Corrective Action Taken:



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Ballard- Grayburg 5inch

Project Number: EMS: 2004-00192

Location: Eddy Co., NM

Lab Order Number: 6C31013

Report Date: 04/07/06

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914  
**Reported:**  
04/07/06 14:46

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	6C31013-01	Water	03/30/06 11:19	03/31/06 13:03
MW-3	6C31013-02	Water	03/30/06 14:45	03/31/06 13:03

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:  
04/07/06 14:46

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-2 (6C31013-01) Water</b>									
<b>Benzene</b>	<b>0.00346</b>	0.00100	mg/L	1	ED60506	04/05/06	04/05/06	EPA 8021B	
<b>Toluene</b>	<b>0.00308</b>	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		95.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.0 %	80-120		"	"	"	"	
<b>MW-3 (6C31013-02) Water</b>									
<b>Benzene</b>	<b>0.00988</b>	0.00100	mg/L	1	ED60506	04/05/06	04/05/06	EPA 8021B	
<b>Toluene</b>	<b>0.00300</b>	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		100 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.2 %	80-120		"	"	"	"	

Environmental Lab of Texas

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Page 2 of 5

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg Sinch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:  
04/07/06 14:46

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch ED60506 - EPA 5030C (GC)**

**Blank (ED60506-BLK1)**

Prepared & Analyzed: 04/05/06

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: <i>a,a,a</i> -Trifluorotoluene	36.0		ug/l	40.0		90.0	80-120			
Surrogate: 4-Bromofluorobenzene	33.8		"	40.0		84.5	80-120			

**LCS (ED60506-BS1)**

Prepared & Analyzed: 04/05/06

Benzene	0.0400	0.00100	mg/L	0.0500		80.0	80-120			
Toluene	0.0401	0.00100	"	0.0500		80.2	80-120			
Ethylbenzene	0.0542	0.00100	"	0.0500		108	80-120			
Xylene (p/m)	0.0934	0.00100	"	0.100		93.4	80-120			
Xylene (o)	0.0445	0.00100	"	0.0500		89.0	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	37.8		ug/l	40.0		94.5	80-120			
Surrogate: 4-Bromofluorobenzene	33.3		"	40.0		83.2	80-120			

**Calibration Check (ED60506-CCV1)**

Prepared: 04/05/06 Analyzed: 04/06/06

Benzene	40.9		ug/l	50.0		81.8	80-120			
Toluene	40.2		"	50.0		80.4	80-120			
Ethylbenzene	53.8		"	50.0		108	80-120			
Xylene (p/m)	92.5		"	100		92.5	80-120			
Xylene (o)	44.3		"	50.0		88.6	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	39.2		"	40.0		98.0	80-120			
Surrogate: 4-Bromofluorobenzene	39.7		"	40.0		99.2	80-120			

**Matrix Spike (ED60506-MS1)**

Source: 6D05001-05

Prepared: 04/05/06 Analyzed: 04/06/06

Benzene	0.0423	0.00100	mg/L	0.0500	ND	84.6	80-120			
Toluene	0.0400	0.00100	"	0.0500	ND	80.0	80-120			
Ethylbenzene	0.0528	0.00100	"	0.0500	ND	106	80-120			
Xylene (p/m)	0.0907	0.00100	"	0.100	ND	90.7	80-120			
Xylene (o)	0.0432	0.00100	"	0.0500	ND	86.4	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	33.9		ug/l	40.0		84.8	80-120			
Surrogate: 4-Bromofluorobenzene	34.4		"	40.0		86.0	80-120			

Environmental Lab of Texas

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Page 3 of 5



Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg Sinch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

Reported:  
04/07/06 14:46

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch ED60506 - EPA 5030C (GC)**

Matrix Spike Dup (ED60506-MSD1)	Source: 6D05001-05			Prepared: 04/05/06 Analyzed: 04/06/06						
Benzene	0.0418	0.00100	mg/L	0.0500	ND	83.6	80-120	1.19	20	
Toluene	0.0416	0.00100	"	0.0500	ND	83.2	80-120	3.92	20	
Ethylbenzene	0.0563	0.00100	"	0.0500	ND	113	80-120	6.39	20	
Xylene (p/m)	0.0966	0.00100	"	0.100	ND	96.6	80-120	6.30	20	
Xylene (o)	0.0459	0.00100	"	0.0500	ND	91.8	80-120	6.06	20	
Surrogate: a,a,a-Trifluorotoluene	41.2		ug/l	40.0		103	80-120			
Surrogate: 4-Bromofluorobenzene	36.6		"	40.0		91.5	80-120			

Environmental Lab of Texas

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Page 4 of 5

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Ballard- Grayburg 5inch  
Project Number: EMS: 2004-00192  
Project Manager: Camille Reynolds

Fax: (432) 687-4914  
**Reported:**  
04/07/06 14:46

#### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:

*Raland K. Tuttle*

Date:

4/7/2006

Raland K. Tuttle, Lab Manager  
Celey D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
LaTasha Cornish, Chemist  
Sandra Sanchez, Lab Tech.

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If you have received this material in error, please notify us immediately at 432-563-1800.



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

Client: Plains P/L

Date/Time: 03-31-06 @ 1303

Order #: 6C31013

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	3.0	C
Shipping container/cooler in good condition?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Custody Seals intact on shipping container/cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not present	
Custody Seals intact on sample bottles?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not present	
Chain of custody present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sample Instructions complete on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Chain of Custody signed when relinquished and received?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Chain of custody agrees with sample label(s)	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Container labels legible and intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sample Matrix and properties same as on chain of custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Samples in proper container/bottle?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Samples properly preserved?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sample bottles intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Preservations documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Containers documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sufficient sample amount for indicated test?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
DOC samples have zero headspace?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Applicable	

Other observations:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Variance Documentation:

Contact Person: - \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted by: \_\_\_\_\_  
Regarding: \_\_\_\_\_

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

**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

OPERATOR

☒ Initial Report ☐ 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 M	Section 10	Township 18S	Range 29E	Feet from the	North/South Line	Feet from the	East/West Line	County 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 NMOCID 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 NMOCID 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, NMOCID 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>	OIL CONSERVATION DIVISION	
Printed Name: Camille Reynolds	Approved by District Supervisor:	
Title: Remediation Coordinator	Approval Date:	Expiration Date:
E-mail Address: cireynolds@pealp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9-7-04	Phone: 505-441-0965	

\* Attach Additional Sheets If Necessary