AP - 7

Darr Angell #1

ANNUAL MONITORING REPORT

YEAR(S):

2011

2011 ANNUAL GROUNDWATER MONITORING REPORT

DARR ANGELL NO. 1
NW ¼, SE ¼, SECTION 11, TOWNSHIP 15 SOUTH, RANGE 37 EAST
PLAINS SRS NUMBER: DARR ANGELL 1
NMOCD REFERENCE NUMBER: AP-007
LEA COUNTY, NEW MEXICO

PLAINS
ALL AMERICAN

March 29, 2012

RECEIVED

MAY 14 2012

Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

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

Re: Plains All American – 2011 Annual Monitoring Reports
4 Sites in Lea 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:

Darr Angell #1	AP-007	Section 11, Township 15 South, Range 37 East, Lea County
Darr Angell #2	AP-007	Section 11, Township 15 South, Range 37 East, Lea County Section 14, Township 15 South, Range 37 East, Lea County
Darr Angell #4	AP-007	Section 11, Township 15 South, Range 37 East, Lea County Section 02, Township 15 South, Range 37 East, Lea County
Denton Station	1R-0234	Section 14, Township 15 South, Range 37 East, Lea County

Conestoga-Rovers & Associates (CRA) 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 CRA 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: Geoff Leking, NMOCD, Hobbs, NM

Enclosures

2011 ANNUAL GROUNDWATER MONITORING REPORT

DARR ANGELL NO. 1
NW ¼, SE ¼, SECTION 11, TOWNSHIP 15 SOUTH, RANGE 37 EAST
PLAINS SRS NUMBER: DARR ANGELL 1
NMOCD REFERENCE NUMBER: AP-007
LEA COUNTY, NEW MEXICO

Prepared For:
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MARCH 2012
REF. NO. 074683(2)

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1.0 INTRODUCTION

This 2011 Annual Groundwater Monitoring Report presents data collected at the Darr Angell No. 1 location (hereafter referred to as the "Site") by Conestoga-Rovers & Associates (CRA) on behalf of Plains Pipeline, L.P. (Plains) in compliance with the New Mexico Oil Conservation Division (NMOCD) letter dated May 1998. This report presents groundwater assessment and remediation activities associated with quarterly gauging and sampling events (March, June, September and November/December) and bi-weekly light non-aqueous phase liquid (LNAPL) abatement activities performed during the 2011 calendar year.

1.1 SITE LOCATION AND HISTORY

The legal description of the site is NW ¼, SE ¼, Section 11, Township 15 South, Range 37 East (FIGURE 1). The Darr Angell No. 1 Pipeline Release Site was formerly the responsibility of Enron Oil Trading and Transportation (EOTT); however, the Site is currently the responsibility of Plains. The release was discovered by EOTT employees and submitted on a Release Notification and Corrective Action Form (C-141) on May 1, 1997 to the NMOCD. According to the release report, an estimated 25 barrels of crude oil was released and 15 barrels were recovered during initial response actions. The release was reported to have occurred from internal corrosion of an 8-inch EOTT pipeline. Beginning on May 29, 2004, project management responsibilities were assumed by NOVA. NOVA conducted the first quarter 2011 groundwater sampling event. CRA assumed Site remediation and project management responsibilities on May 2, 2011 and conducted the remaining 2011 groundwater assessment and remediation activities.

Currently, there are twenty-one groundwater monitor wells (MW-1 through MW-21) and eleven product recovery wells (RW-1 through RW-11) on-site. Select monitor and recovery wells are equipped with a total fluid pump for LNAPL recovery. All pumps are compressor driven and are periodically relocated depending on LNAPL thickness and product recovery rates in an effort to maximize product abatement at the Site. Monitor and recovery wells which exhibit LNAPL, but were not part of the automated recovery system, were recovered manually. Recovered product is periodically transported to Wasson Station facility for reinjection to the Plains Pipeline system and recovered groundwater is transported to a licensed disposal facility.

2.0 REGULATORY FRAMEWORK

The New Mexico Oil Conservation Division (NMOCD) guidelines require groundwater to be analyzed for potential contaminants as defined by the New Mexico Water Quality Control Commission (NMWQCC) Standards 20.6.2.3103 Sections A. NMQCC 20.6.2.3103 Section A provides the Human Health Standards for Groundwater. The constituents of concern (COCs) in affected groundwater at the Site are LNAPL, benzene, toluene, ethylbenzene, and xylenes (BTEX). In this report, groundwater analytical results for the COCs are compared to the NMWQCC standards as show in the following table:

Analyte	NMWQCC Standard for Groundwater
20.6.2.3103 Section A - Human Health Standard	
Benzene	0.01 mg/L
Toluene	0.75 mg/L
Ethylbenzene	0.75 mg/L
Total Xylenes	0.62 mg/L

The table below is the site sampling schedule approved by the NMOCD in a correspondence dated April 28, 2004 and amended in NMOCD correspondences dated June 20, 2005 and April 11, 2006.

NMOCD Approved Sampling Schedule					
MW-1	Quarterly	MW-12	Quarterly	RW-1	Quarterly
MW-2	Quarterly	MW-13	Quarterly	RW-2	Quarterly
MW-3	Quarterly	MW-14	Quarterly	RW-3	Quarterly
MW-4	Annually	MW-15	Annually	RW-4	Quarterly
MW-5	Quarterly	MW-16	Annually	RW-5	Quarterly
MW-6	Quarterly	MW-17	Quarterly	RW-6	Quarterly
MW-7	Semi-Annually	MW-18	Annually	RW-7	Quarterly
MW-8	Quarterly	MW-19	Quarterly	RW-8	Quarterly
MW-9	Quarterly	MW-20	Annually	RW-9	Quarterly
MW-10	Quarterly	MW-21	Quarterly	RW10	Quarterly
MW-11	Annually			RW-11	Quarterly

3.0 GROUNDWATER MONITORING ACTIVITIES

NOVA conducted the first quarterly groundwater sampling event on March 2 - 3, 2011. The remaining quarterly groundwater monitoring event activities were conducted by CRA on June 15, September 7 and 13, November 29 and December 1, 2011. The Site is monitored with a network of 21 monitor wells and 11 recovery wells. Wells were sampled in accordance with the sampling scheduled referred to in Section 2.0. Wells containing measureable amount of LNAPL (>0.01 feet) were not sampled. A Site Details Map is presented as FIGURE 2.

3.1 GROUNDWATER MONITORING METHODOLOGY

Prior to purging wells, static fluid levels were measured with an electric interface probe to the nearest hundredth of a foot to obtain groundwater elevation data and assess for the presence of LNAPL. After recording fluid levels, wells not containing LNAPL were purged of three casing volumes of water and then groundwater samples were collected using clean, disposable PVC bailers. Laboratory-supplied sample containers were then filled directly from the bailers. Groundwater samples were then placed on ice in insulated coolers and chilled to a temperature of approximately 4°C (40°F). The coolers were prepared for delivery and proper chain-of-custody documentation accompanied the samples to TraceAnalysis, Inc in Midland, Texas for analysis of BTEX by EPA Method 8021B. In addition, during the December 2011 sampling event two wells (MW-6 and MW-12) were also analyzed for Polycyclic Aromatic Hydrocarbons (PAH) by 8270B. The groundwater fluids recovered during the Site activities were containerized onsite in properly labeled and sealed drums or poly tanks and disposed of by a third party subcontractor, contracted directly by Plains, at an approved salt water disposal (SWD) facility.

3.2 GROUNDWATER MONITORING RESULTS

All depth to groundwater measurements were recorded from the top of casing (TOC) of each well. The gauging data presented below represents calculated groundwater elevations corrected using a specific gravity of 0.81 for wells with measurable amounts of LNAPL and the elevation data obtained from professional surveying activities. The NOVA groundwater elevation data table for the March 2011 gauging event in presented in APPENDIX A. Groundwater gauging data collected by CRA during the June, September and November groundwater monitoring events is presented in TABLE I. Groundwater gradient maps for March, June, September and November 2011 are provided as FIGURES 3, 4, 5 and 6, respectively.

Corrected groundwater elevations ranged from 3,724.87 to 3,727.71 feet in March, from 3,724.11 to 3,727.02 feet in June, from 3,723.94 to 3,726.79 feet in September and from 3,723.80 to 3,726.60 feet in November. LNAPL was encountered in 19 wells during the 2011 groundwater monitoring events. LNAPL thicknesses ranged from 0.03 to 6.61 feet in March, from 0.01 to 8.45 feet in June, from 0.68 to 8.10 feet in September and from 0.50 to 9.04 feet in November 2011. The groundwater flow direction is towards the southeast and appears to be consistent with historical data. The average groundwater gradient

observed at the Site during the 2011 groundwater monitoring events was approximately 0.003 feet/foot.

During the March 2011 groundwater sampling event six wells were sampled, of which two wells detected benzene concentrations above the NMWQCC Standard (0.01 mg/L). During the June 2011 sampling event six wells were sampled, of which two wells detected benzene concentrations above the NMWQCC Standard. During the September 2011 sampling event five wells were sampled, of which one well detected benzene concentrations above the NMWQCC Standard. During the December 2011 sampling event seven wells were sampled, of which two wells detected benzene concentration above the NMWQCC Standard. During the December 2011 sampling event five wells were not sampled due to insufficient water levels in the well; MW-11, MW-16, MW-17, MW-18 and MW-19. Also in December, samples from two monitor wells (MW-6 and MW-12) were submitted for PAH analysis and both results were below NMWQCC Standards for all the constituents analyzed. Groundwater BTEX analytical results are summarized in TABLE II. Groundwater PAH results are summarized in TABLE III. Groundwater BTEX concentration maps for the March, June, September and December 2011 groundwater sampling events are presented as FIGURES 7, 8, 9 and 10, respectively. Copies of the certified laboratory reports and chain-of-custody documentation are attached in APPENDIX B.

4.0 CORRECTIVE ACTION

On September 14, 2011 CRA mobilized to the Site with Straub Corporation (Straub) to swab and brush the screens on four wells; RW-3, RW-7, RW-8 and MW-1. The screen cleaning was an attempt to increase product recovery in those wells by removing scale from the screened interval. While on-Site, Straub also retrieved a pump that was stuck in recovery well RW-5. CRA mobilized to the Site twice a week to gauge and manually recover wells that were not included in the automated LNAPL recovery system, but had product present in the fluids column. Inspections and maintenance of the operating systems on Site were also conducted weekly. This included inspections and maintenance of the compressor (i.e. oil changes, drain water), total fluids pumps (i.e. cleaning) and any other "house-keeping" needed at the Site to maintain the most efficient product recovery system possible. Periodically and as needed, CRA personnel adjusted the skimmer pump intervals in the wells as an effort to increase LNAPL recovery.

From June to December 2011, CRA recovered approximately 3,654 gallons (87 barrels) of product from the Site. Approximately 58,708 gallons (1,397.81 barrels) of product have been recovered from the start of the product abatement program.

5.0 SUMMARY OF FINDINGS

Based on groundwater assessment, monitoring and remedial activities performed by CRA at the Site in 2011, the following summary of findings is presented:

- The initial release was discovered by EOTT employees and submitted on a Release Notification and Corrective Action Form (C-141) on May 1, 1997 to the NMOCD. According to the release report, an estimated 25 barrels of crude oil was released and 15 barrels were recovered during initial response actions;
- CRA assumed remediation responsibility of the Site on May 2, 2011;
- The Site is monitored with a network of twenty-one groundwater monitor wells (MW-1 through MW-21) and eleven product recovery wells (RW-1 through RW-11). Select monitor and recovery wells are equipped with a total fluid pump for LNAPL recovery. All pumps are compressor driven and are periodically relocated depending on LNAPL thickness and product recovery rates in an effort to maximize product recovery at the Site;
- NOVA conducted the first quarterly groundwater sampling event on March 2 - 3, 2011. The remaining quarterly groundwater monitoring event activities were conducted by CRA on June 15, September 7 and 13, November 29 and December 1, 2011;
- The groundwater flow direction at the Site is to the southeast and appears to be consistent with historical data. The average groundwater gradient observed at the Site during the 2011 groundwater monitoring events was approximately 0.003 feet/foot;
- LNAPL was encountered in 19 wells during the 2011 groundwater monitoring events. LNAPL thicknesses ranged from 0.03 to 6.61 feet in March, from 0.01 to 8.45 feet in June, from 0.68 to 8.10 feet in September and from 0.50 to 9.04 feet in November 2011;
- During the March 2011 groundwater sampling event six wells were sampled, of which two wells detected benzene concentrations above the NMWQCC Standard;
- During the June 2011 sampling event six wells were sampled, of which two wells detected benzene concentrations above the NMWQCC Standard;
- During the September 2011 sampling event five wells were sampled, of which one well detected benzene concentrations above the NMWQCC Standard;
- During the December 2011 sampling event seven wells were sampled, of which two wells detected benzene concentration above the NMWQCC Standard;
- In December two wells (MW-6 and MW-12) were submitted for PAH analysis. All results were below NMWQCC Standards;
- On September 14, 2011 CRA mobilized to the Site with Straub to swab and brush the screens on four wells; RW-3, RW-7, RW-8 and MW-1;
- CRA performed weekly inspections and maintenance of the product recovery system on Site;
- Wells which contain measurable product, but are not equipped with a total fluids pump, are manually recovered for product bi-weekly;
- From June to December 2011, CRA has recovered a total of 3,654 gallons (87 barrels) gallons of product from the Site. A total of 58,708 gallons (1,397.81

barrels) of product have been recovered from the start of the product abatement program.

6.0 RECOMMENDATIONS

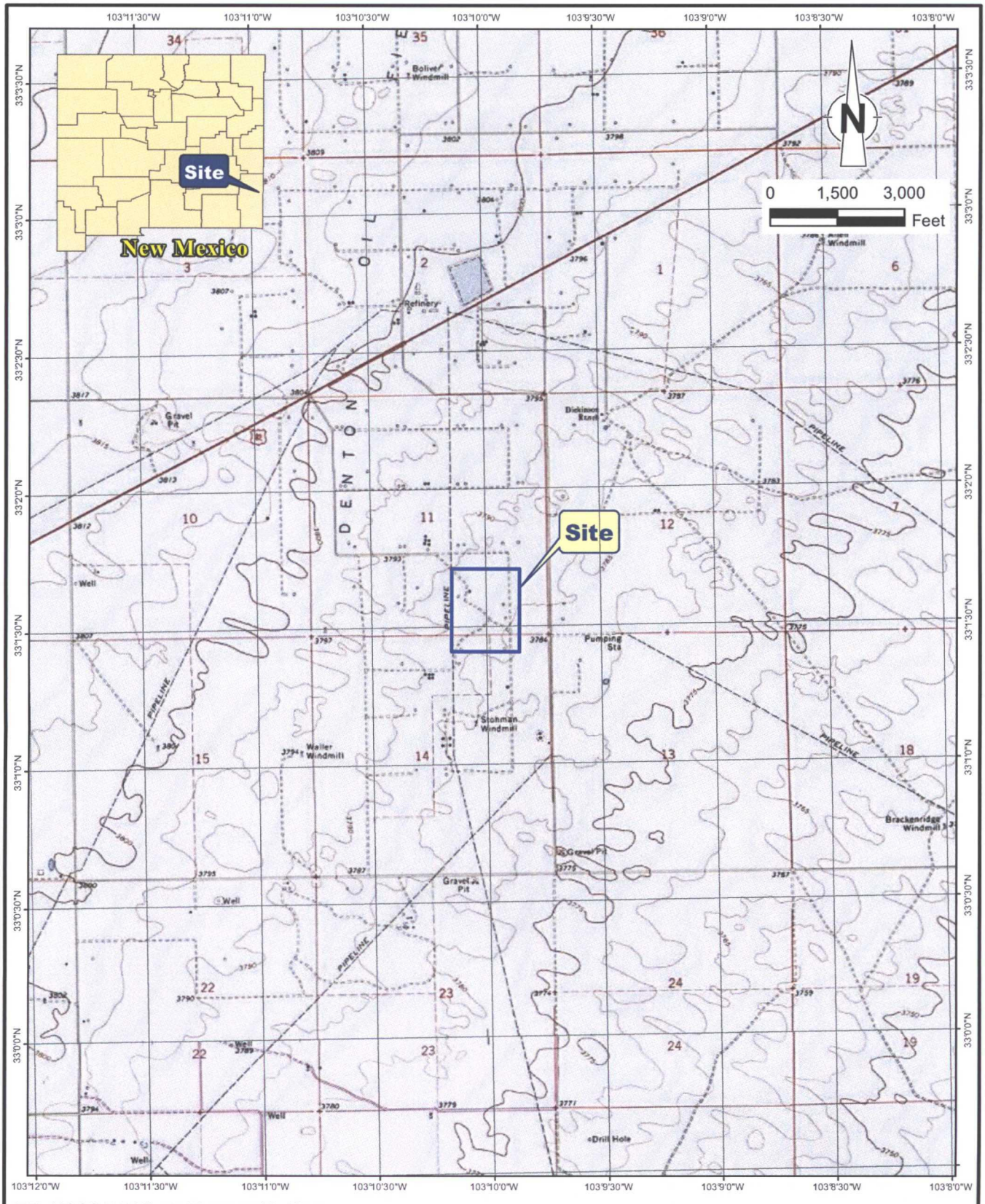
Based upon the data and conclusions presented in this report, the following is recommended:

- Continue quarterly groundwater monitoring events in 2012 with annual reporting to the NMOCD;
- Continue bi-weekly LNAPL abatement in 2012. This includes continuation of moving total fluids pumps and adjusting product recovery schedules to maximize product recovery; and
- Begin Mobile Duel Phase Extraction (MDPE) events to increase product recovery at the Site.

All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

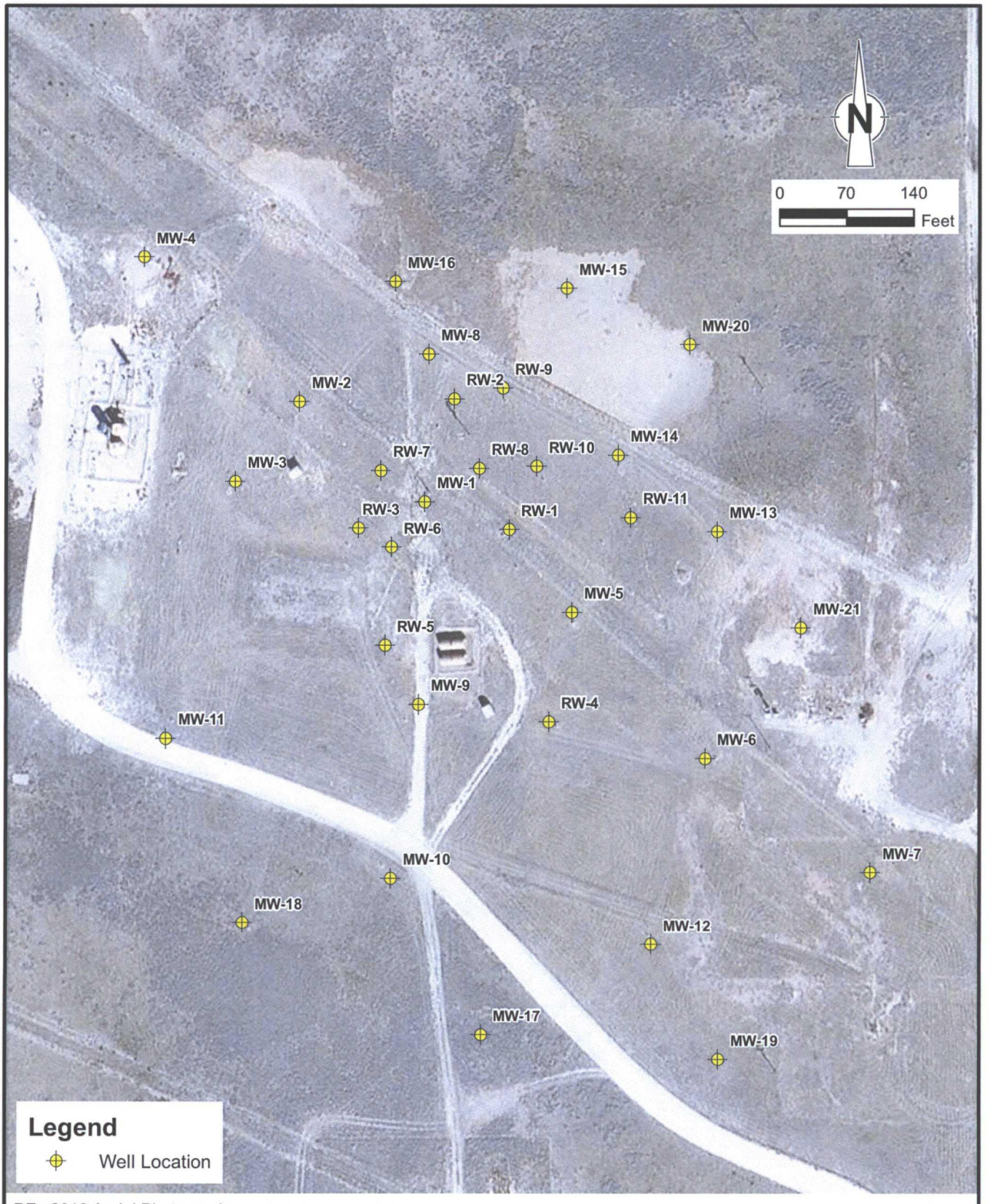
Todd Wells
Project Manager

Thomas C. Larson
Midland Branch Manager



RE: USGS 7.5 Minute Topographic Maps.

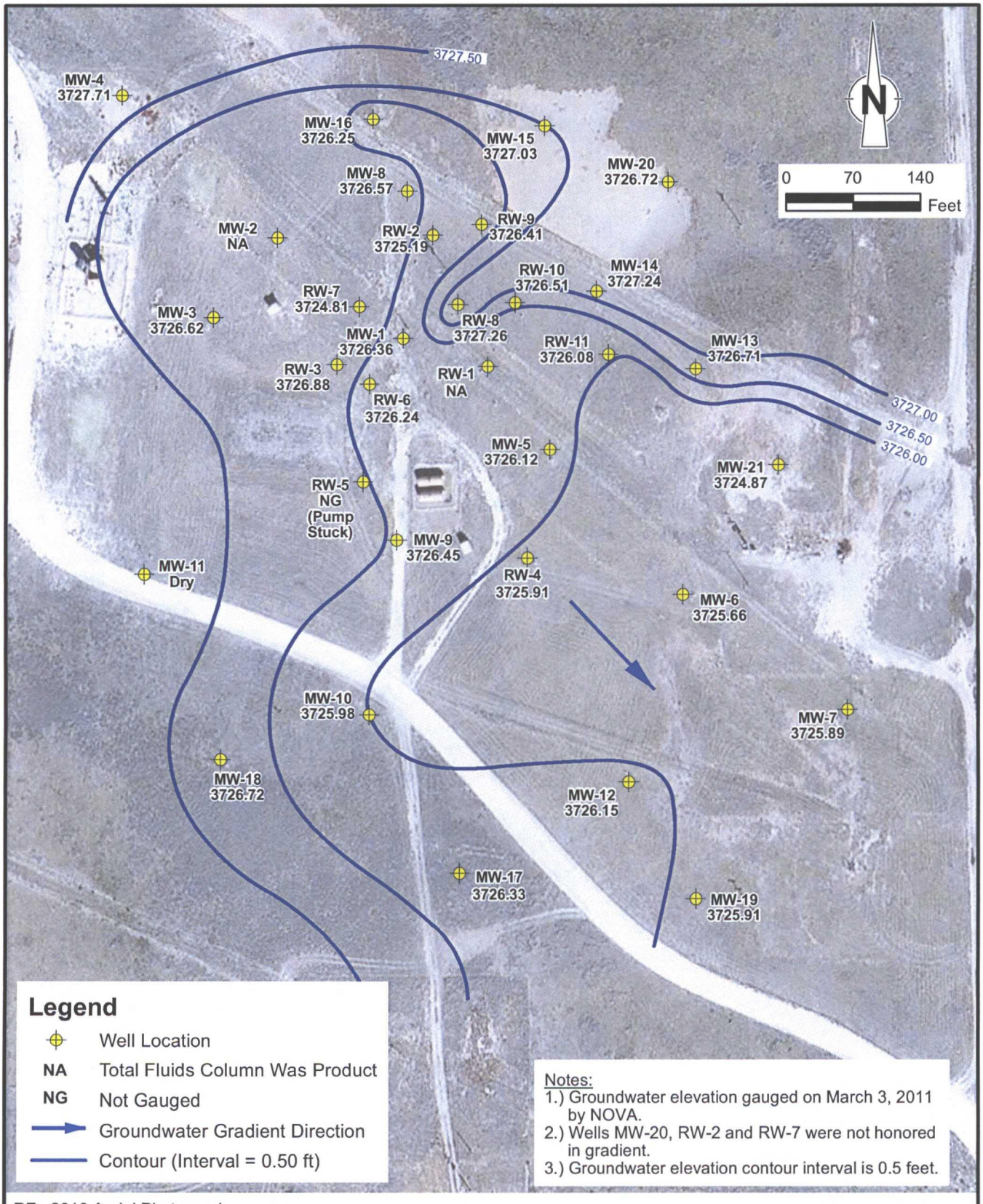
figure 1
SITE LOCATION MAP
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.



RE: 2010 Aerial Photograph

figure 2
SITE DETAILS MAP
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

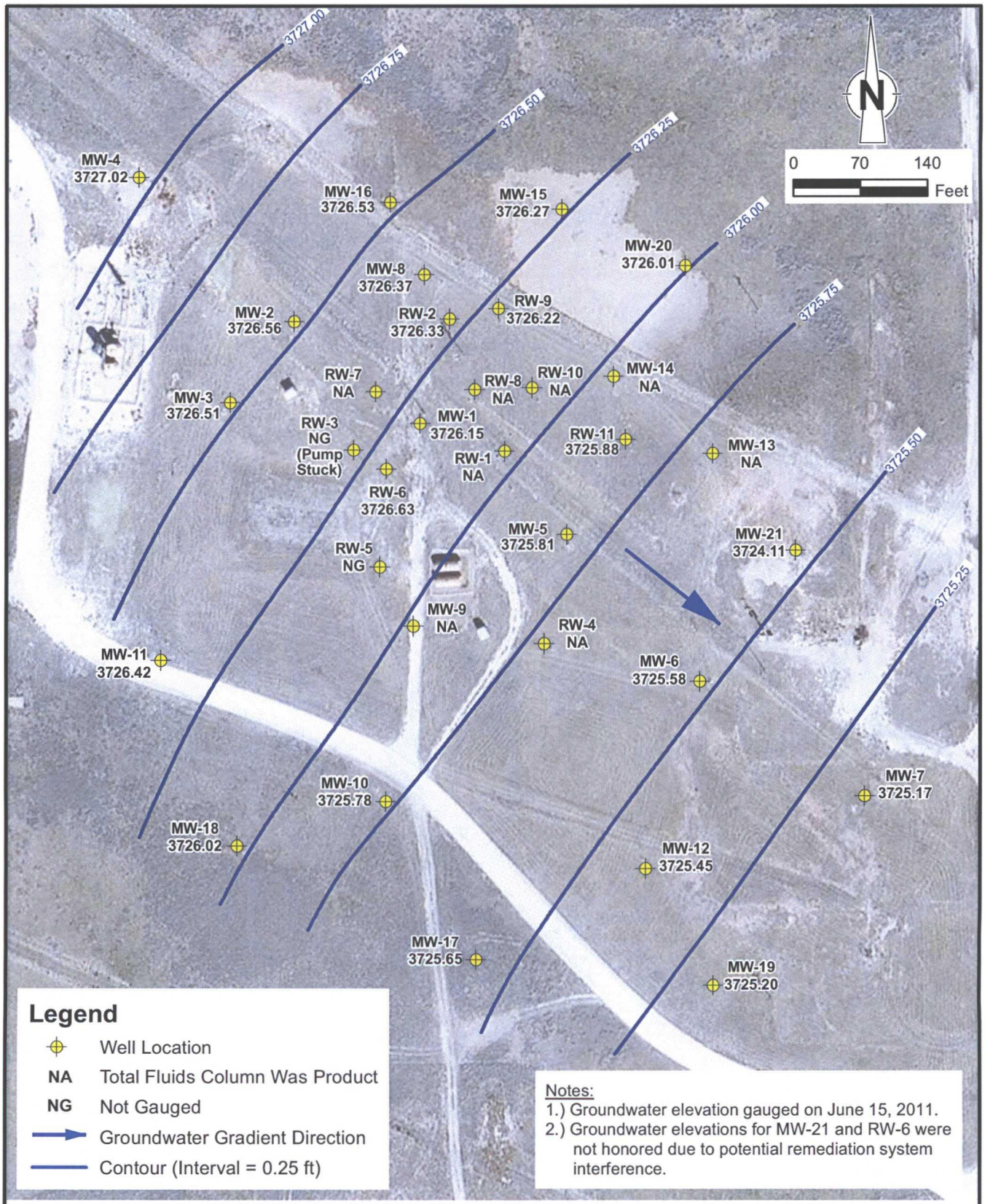
074683-11(002)PR-BR002 Apr 9/2012



RE: 2010 Aerial Photograph

figure 3
GROUNDWATER GRADIENT MAP - MARCH 2011
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

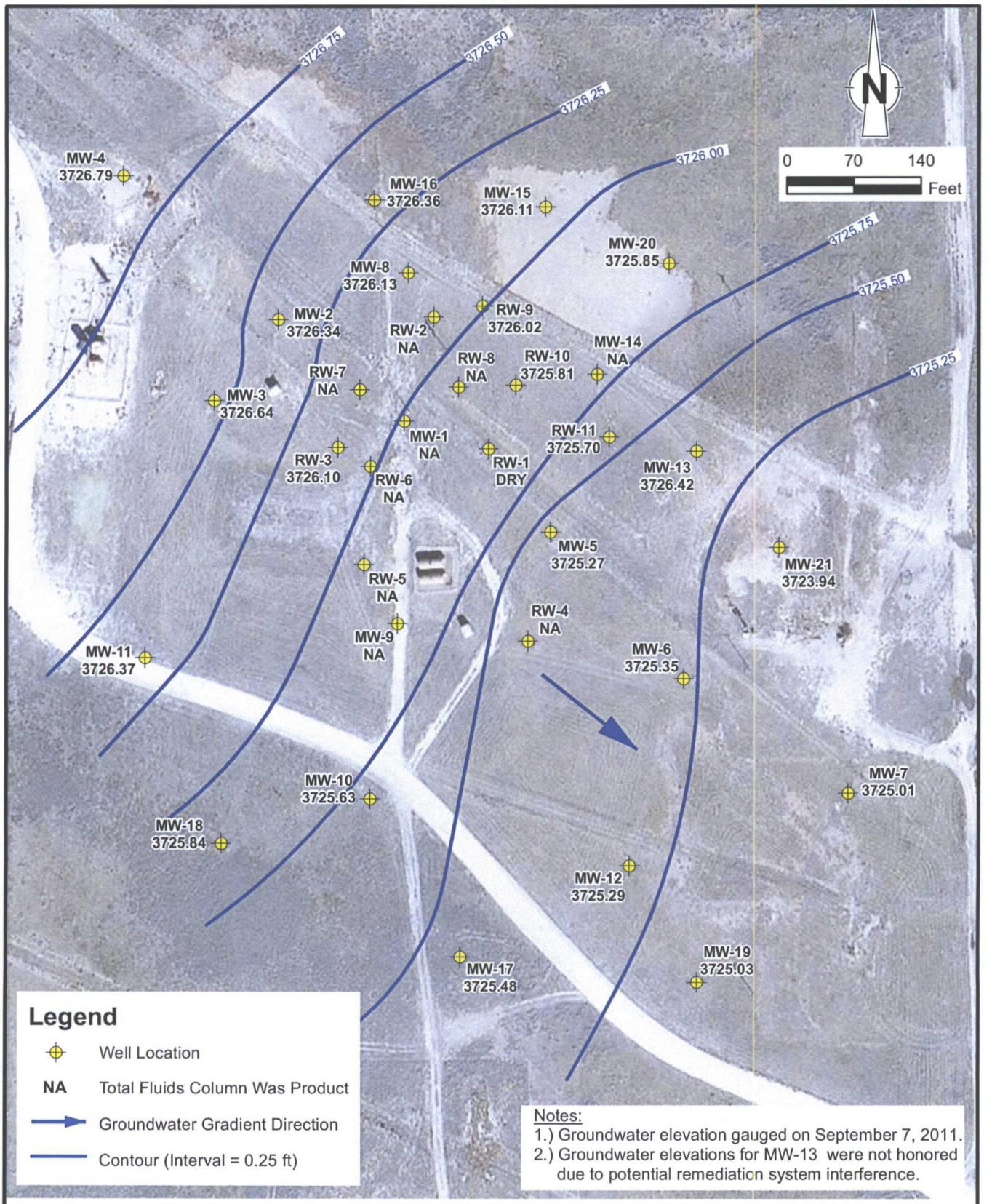
074683-11(002)PR-BR011 Apr 9/2011



RE: 2010 Aerial Photograph

figure 4
GROUNDWATER GRADIENT MAP - JUNE 2011
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

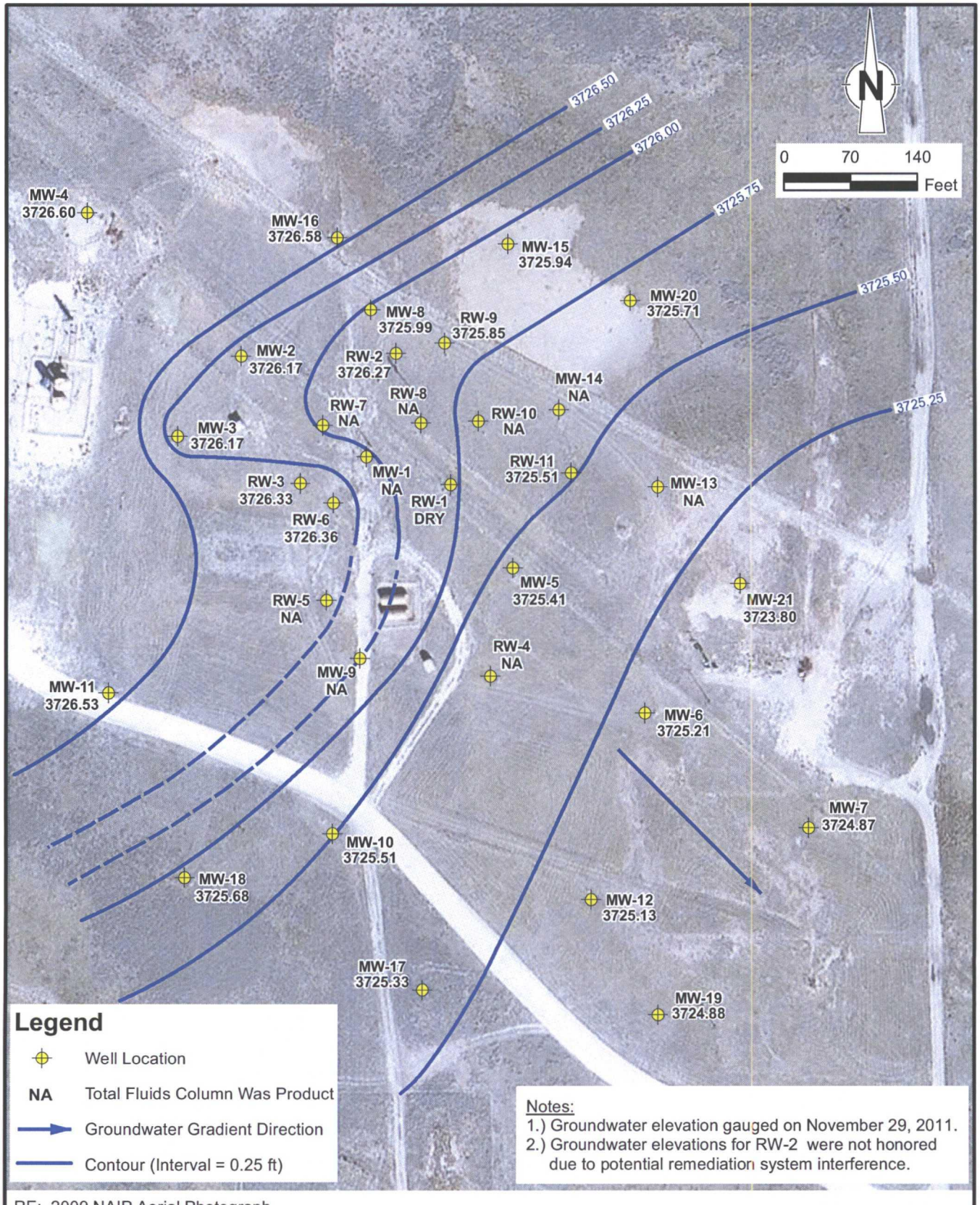
074683-11(002)PR-BR004 Apr 2/2011



RE: 2009 NAIP Aerial Photograph

figure 5
GROUNDWATER GRADIENT MAP - SEPTEMBER 2011
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

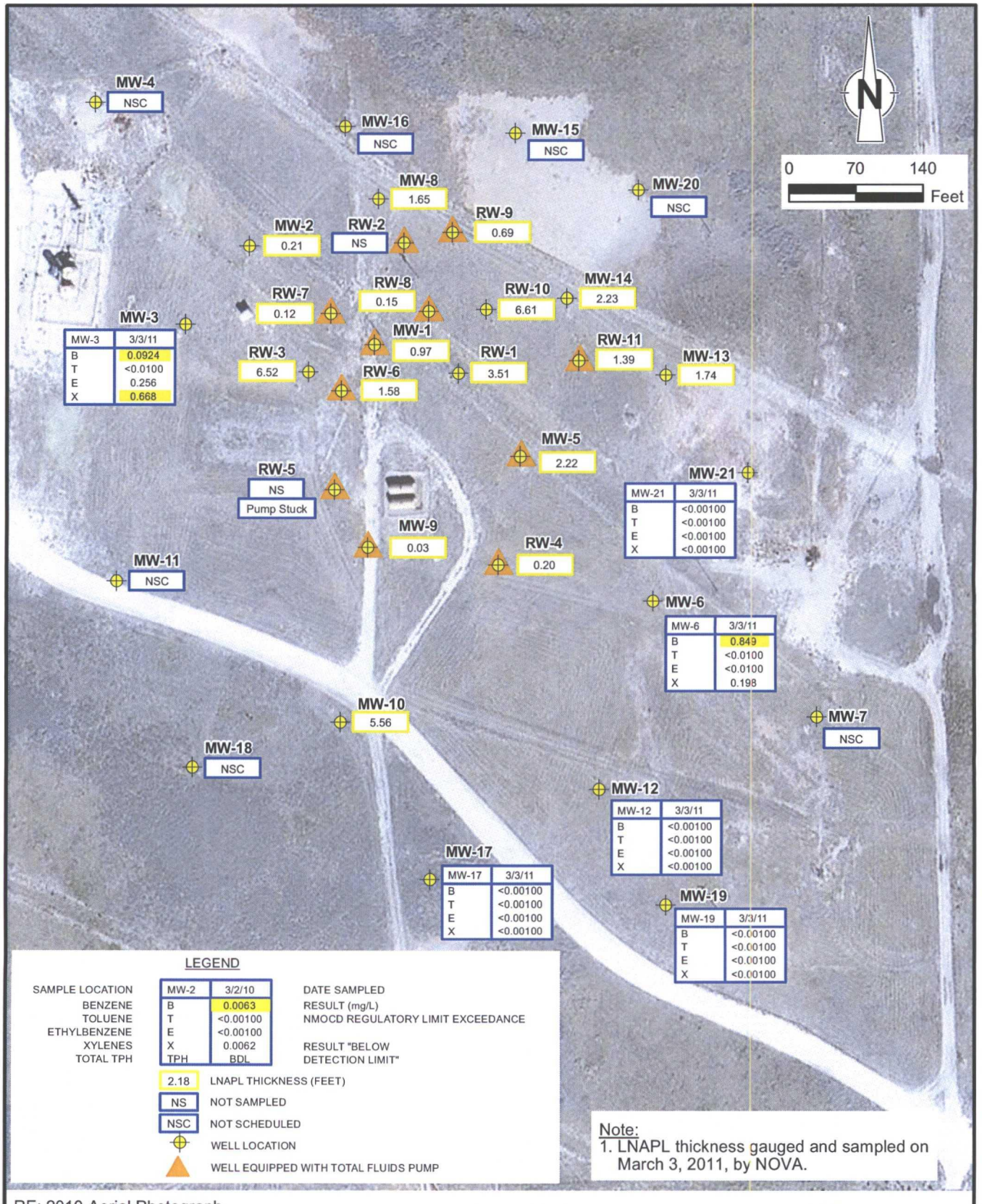
074683-11(002)PR-BR006 Apr 2/2011



RE: 2009 NAIP Aerial Photograph

figure 6
GROUNDWATER GRADIENT MAP - NOVEMBER 2011
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

074683-11(002)PR-BR008 Apr 9/2012

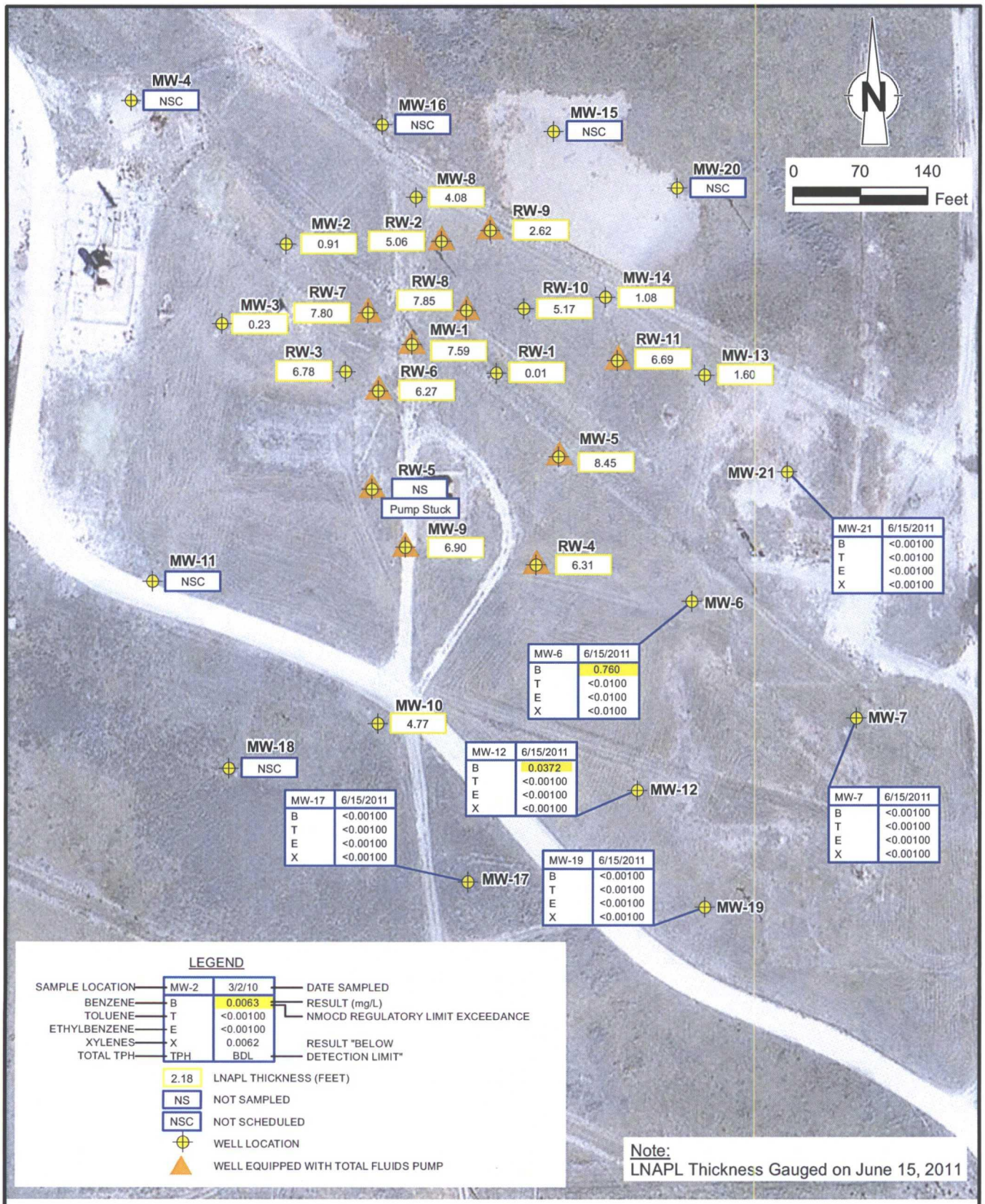


RE: 2010 Aerial Photograph

figure 7

GROUNDWATER BTEX CONCENTRATION MAP - MARCH 2011
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

74683-11(002)PR-BR010 Apr 2/2012

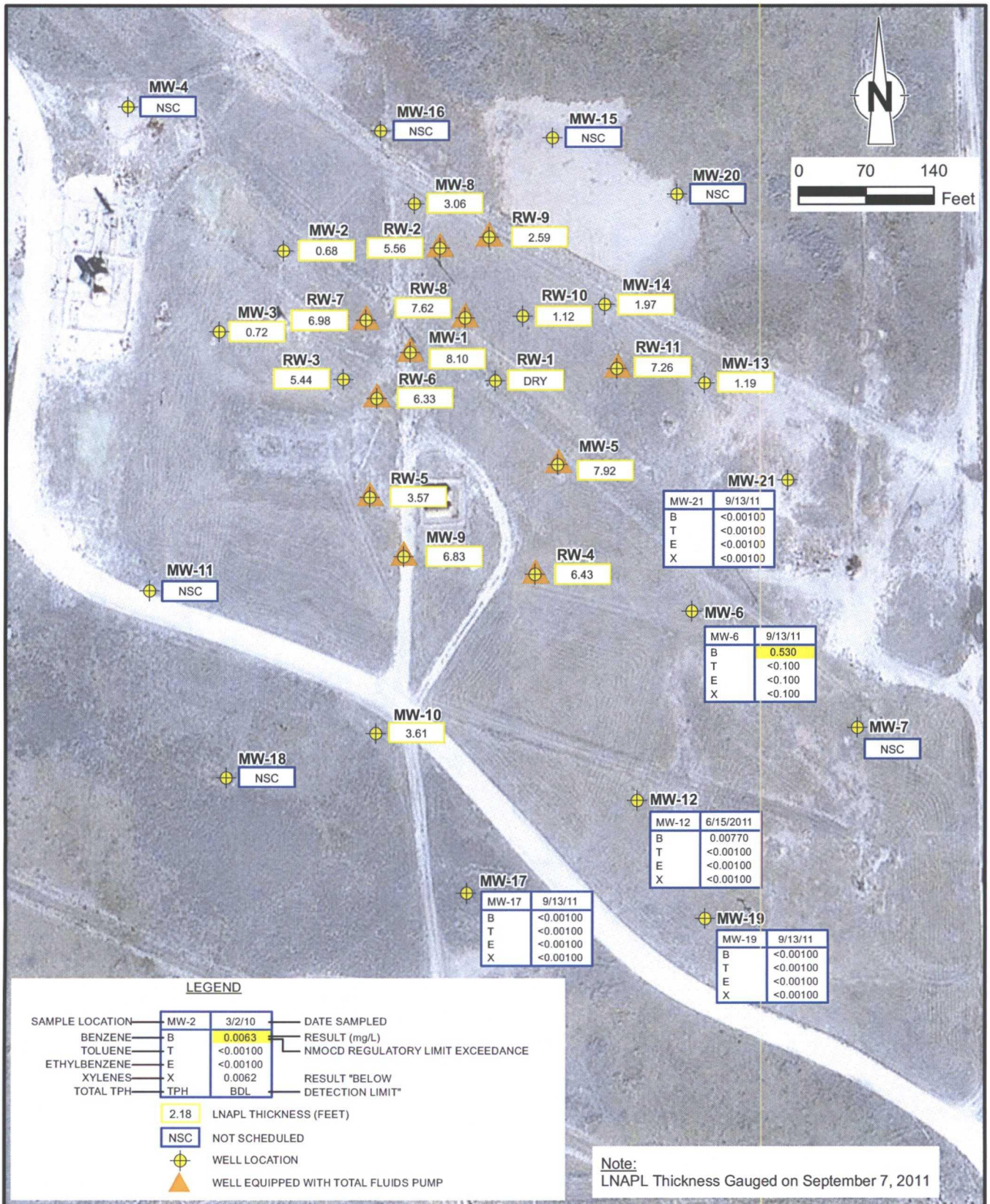


RE: 2010 Aerial Photograph

figure 8

GROUNDWATER BTEX CONCENTRATION MAP - JUNE 2011
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

74683-11(002)PR-BR003 Apr 9/2012

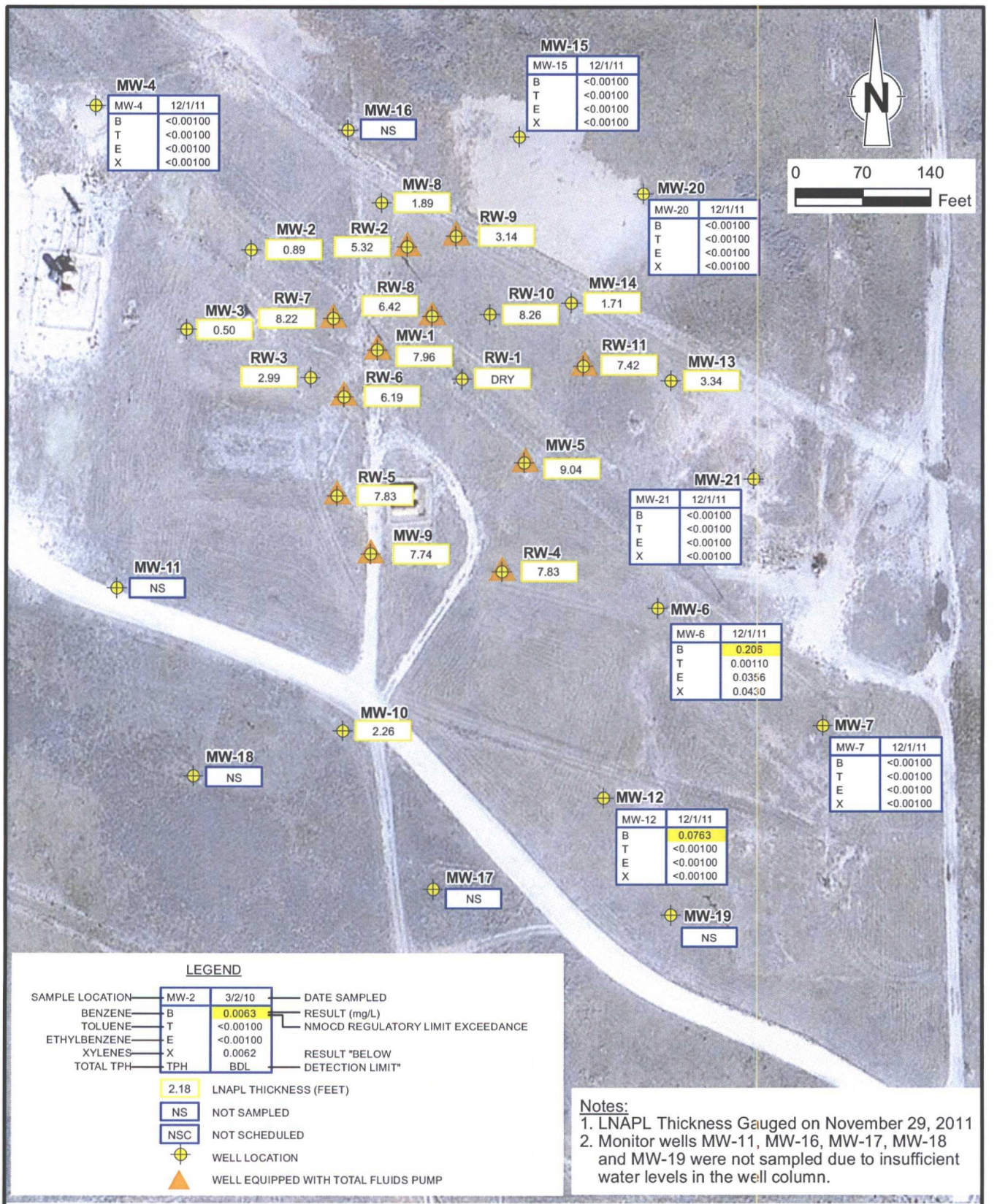


RE: 2010 Aerial Photograph

figure 9

GROUNDWATER BTEX CONCENTRATION MAP - SEPTEMBER 2011
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

74683-11(002)PR-BR005 Apr 2/2012



RE: 2010 Aerial Photograph

figure 10

GROUNDWATER BTEX CONCENTRATION MAP - DECEMBER 2011
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

74683-11(002)PR-BR009 Apr 2/2012

TABLE I
GROUNDWATER GAUGING SUMMARY
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO

Well ID *TOC Elevation*	Collection Date	Depth to Groundwater (ft TOC)	Depth to LNAPL (ft TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft)	Well Depth (ft TOC)	Well Screen Interval (ft bgs) *Well Size (in)*
MW-1	6/15/11	67.62	60.03	7.59	3726.15	68.10	50-70
3787.62	9/7/11	---	60.00	8.10	NA*	68.10	*4*
	11/29/11	---	60.15	7.96	NA*	68.11	
MW-2	6/15/11	62.37	61.46	0.91	3726.56	71.98	50-70
3788.19	9/7/11	62.40	61.72	0.68	3726.34	72.00	*4*
	3/5/12	62.60	62.06	0.54	3726.03	72.35	
MW-3	6/15/11	62.71	62.48	0.23	3726.51	70.73	50-70
3789.03	9/7/11	62.97	62.25	0.72	3726.64	70.70	*4*
	11/29/11	63.27	62.77	0.50	3726.17	71.91	
MW-4	6/15/11	63.04	---	---	3727.02	73.12	50-70
3790.06	9/7/11	63.27	---	---	3726.79	73.20	*4*
	11/29/11	63.46	---	---	3726.60	73.12	
MW-5	6/15/11	68.50	60.05	8.45	3725.81	71.43	50-70
3787.47	9/7/11	68.62	60.70	7.92	3725.27	71.75	*4*
	11/29/11	69.38	60.34	9.04	3725.41	71.85	
MW-6	6/15/11	61.23	---	---	3725.58	71.42	50-70
3786.81	9/7/11	61.46	---	---	3725.35	71.55	*4*
	11/29/11	61.60	---	---	3725.21	71.60	
MW-7	6/15/11	61.65	---	---	3725.17	73.31	50-70
3786.82	9/7/11	61.81	---	---	3725.01	73.32	*4*
	11/29/11	61.95	---	---	3724.87	73.24	
MW-8	6/15/11	65.17	61.09	4.08	3726.37	72.74	50-70
3788.24	9/7/11	64.59	61.53	3.06	3726.13	72.74	*4*
	11/29/11	63.78	61.89	1.89	3725.99	72.87	
MW-9	6/15/11	---	60.70	6.90	NA*	67.60	50-70
3788.33	9/7/11	---	60.78	6.83	NA*	67.61	*4*
	11/29/11	---	60.94	7.74	NA*	68.68	
MW-10	6/15/11	66.54	61.77	4.77	3725.78	68.64	40-65
3788.46	9/7/11	65.75	62.14	3.61	3725.63	68.70	2
	11/29/11	64.78	62.52	2.26	3725.51	68.80	
MW-11	6/15/11	63.13	---	---	3726.42	63.40	35-60
3789.55	9/7/11	63.18	---	---	3726.37	63.43	2
	11/29/11	63.02	---	---	3726.53	63.44	
MW-12	6/15/11	62.36	---	---	3725.45	63.54	35-60
3787.81	9/7/11	62.52	---	---	3725.29	63.58	2

TABLE I
GROUNDWATER GAUGING SUMMARY
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO

Well ID *TOC Elevation*	Collection Date	Depth to Groundwater (ft TOC)	Depth to LNAPL (ft TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft)	Well Depth (ft TOC)	Well Screen Interval (ft bgs) *Well Size (in)*
MW-12 (cont)	11/29/11	62.68	---	---	3725.13	64.02	
MW-13	6/15/11	---	61.69	1.60	NA*	63.29	35-60
3788.55	9/7/11	63.09	61.90	1.19	3726.42	63.31	2
	11/29/11	---	62.01	3.34	NA*	65.35	
MW-14	6/15/11	---	62.29	1.08	NA*	63.37	35-60
3788.72	9/7/11	---	61.45	1.97	NA*	63.42	2
	11/29/11	---	61.65	1.71	NA*	63.36	
MW-15	6/15/11	62.68	---	---	3726.27	63.50	35-60
3788.95	9/7/11	62.84	---	---	3726.11	63.53	2
	11/29/11	63.01	---	---	3725.94	64.14	
MW-16	6/15/11	63.08	---	---	3726.53	63.45	35-60
3789.61	9/7/11	63.25	---	---	3726.36	63.50	2
	11/29/11	63.03	---	---	3726.58	64.24	
MW-17	6/15/11	62.30	---	---	3725.65	63.00	35-60
3787.95	9/7/11	62.47	---	---	3725.48	63.00	2
	11/29/11	62.62	---	---	3725.33	62.94	
MW-18	6/15/11	62.80	---	---	3726.02	63.42	35-60
3788.82	9/7/11	62.98	---	---	3725.84	63.44	2
	11/29/11	63.14	---	---	3725.68	64.00	
MW-19	6/15/11	62.31	---	---	3725.20	63.33	35-60
3787.51	9/7/11	62.48	---	---	3725.03	63.35	2
	11/29/11	62.63	---	---	3724.88	63.91	
MW-20	6/15/11	62.52	---	---	3726.01	63.36	35-60
3788.53	9/7/11	62.68	---	---	3725.85	63.38	2
	11/29/11	62.82	---	---	3725.71	63.97	
MW-21	6/15/11	62.35	---	---	3724.11	68.31	45-65
3786.46	9/7/11	62.52	---	---	3723.94	68.30	2
	11/29/11	62.66	---	---	3723.80	68.28	
RW-1	6/15/11	---	60.67	0.01	NA*	60.68	40-65
3788.33	9/7/11		DRY			60.68	*6*
	11/29/11		DRY			60.68	
RW-2	6/15/11	66.75	61.69	5.06	3726.33	67.45	40-65
3788.98	9/7/11	---	61.54	5.56	NA*	67.10	*4*

TABLE I
GROUNDWATER GAUGING SUMMARY
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO

Well ID *TOC Elevation*	Collection Date	Depth to Groundwater (ft TOC)	Depth to LNAPL (ft TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft)	Well Depth (ft TOC)	Well Screen Interval (ft bgs) *Well Size (in)*
RW-2 (cont)	11/29/11	67.02	61.70	5.32	3726.27	69.98	
RW-3	6/15/11	---	61.04	6.78	NA*	67.82	40-65
3788.95	9/7/11	67.26	61.82	5.44	3726.10	67.90	*6*
	11/29/11	65.04	62.05	2.99	3726.33	---	
RW-4	6/15/11	---	61.00	6.31	NA*	67.31	50-70
3788.15	9/7/11	---	60.97	6.43	NA*	67.40	*4*
	11/29/11	---	61.11	7.83	NA*	68.97	
RW-5	6/15/11	Pump Stuck in Well					47-67
3788.83	9/7/11	---	61.61	3.57	NA*	65.18	*4*
	11/29/11	---	61.71	7.83	NA*	69.57	
RW-6	6/15/11	67.38	61.11	6.27	3726.63	67.55	46-66
3788.93	9/7/11	---	61.22	6.33	NA*	67.55	*4*
	11/29/11	67.58	61.39	6.19	3726.36	---	
RW-7	6/15/11	---	60.52	7.80	NA*	68.32	48-68
3789.07	9/7/11	---	61.38	6.98	NA*	68.36	*4*
	11/29/11	---	61.54	8.22	NA*	---	
RW-8	6/15/11	---	61.09	7.85	NA*	68.94	47-67
3788.84	9/7/11	---	61.19	7.62	NA*	68.81	*4*
	11/29/11	---	61.45	6.42	NA*	67.87	
RW-9	6/15/11	64.82	62.20	2.62	3726.22	71.11	49-69
3788.92	9/7/11	65.00	62.41	2.59	3726.02	71.24	*4*
	11/29/11	65.61	62.47	3.14	3725.85	71.22	
RW-10	6/15/11	---	61.25	5.17	NA*	66.42	49-69
3788.72	9/7/11	63.82	62.70	1.12	3725.81	68.72	*4*
	11/29/11	---	61.58	8.26	NA*	69.84	
RW-11	6/15/11	67.97	61.28	6.69	3725.88	71.27	50-70
3788.43	9/7/11	68.61	61.35	7.26	3725.70	71.18	*4*
	11/29/11	68.93	61.51	7.42	3725.51	71.30	

Notes:

1. TOC - Top of Casing.
2. LNAPL - Light non-aqueous phase liquid.
3. bgs - below ground surface.
4. Corrected groundwater elevations were calculated using an LNAPL specific gravity of 0.81.
5. NA - Total fluid column in well was LNAPL.

TABLE II
GROUNDWATER BTEX ANALYTICAL SUMMARY
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Total BTEX
New Mexico Oil Conservation Division Regulatory Limits		0.01	0.75	0.75	0.62	0.05
MW-3	3/3/11	**0.0924**	<0.0100	**0.256**	**0.668**	**1.0164**
MW-4	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-6	3/3/11	**0.849**	<0.0100	<0.0100	<0.0100	**0.198**
	6/15/11	**0.760**	<0.0100	<0.0100	<0.0100	**0.760**
	9/13/11	**0.530**	<0.0100	<0.0100	<0.0100	**0.530**
	12/1/11	**0.206**	**0.00110**	**0.0356**	**0.0430**	**0.286**
MW-7	6/15/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-12	3/3/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	6/15/11	**0.0372**	<0.00100	<0.00100	<0.00100	**0.0372**
	9/13/11	**0.00770**	<0.00100	<0.00100	<0.00100	**0.00770**
	12/1/11	**0.0763**	<0.00100	<0.00100	<0.00100	**0.0763**
MW-15	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-17	3/3/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	6/15/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	9/13/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-19	3/3/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	6/15/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	9/13/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-20	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-21	3/3/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	6/15/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	9/13/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Notes:

1. Shaded cells indicate New Mexico Oil Conservation Division Regulatory Limit exceedance.
2. **Bold** indicates detection.
3. BTEX analyses by EPA Method 8021B.
4. Results shown in mg/L.
5. March 2011 results collected by NOVA.

TABLE III
GROUNDWATER ANALYTICAL SUMMARY
PAHs
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Acenaphthlene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Napthalene	1-Methylnapthalene	2-Methylnapthalene	Dibenzofuran
NMWQCC Drinking Water Standards Section 1-101.UU and 3-103.A					0.001	0.007	0.002		0.002	0.002	0.003			0.004				0.03		
MW-1	11/24/08	<0.000183	0.00485	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.0167	<0.000183	0.0205	<0.000183	0.122	0.173	0.250	0.0106
	12/08/09	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0164	<0.000922	<0.000922	0.0719	<0.000922	0.106	<0.000922	0.350	0.748	1.09	0.0436
	11/22/10	Not Sampled as Part of Quarterly Monitoring Event																		
MW-2	11/24/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.00255	<0.000183	0.00282	<0.000183	0.0285	0.0234	0.0302	0.00174
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00482	<0.000184	0.00625	<0.000184	0.0435	0.0536	0.0528	0.00314
	11/22/10	Not Sampled for PAH due to Presence of PSH																		
MW-3	11/24/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00377	<0.000184	0.0037	<0.000184	0.0601	0.0455	0.0625	0.00292
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00242	<0.000184	0.00262	<0.000184	0.0372	0.0396	0.0451	0.00191
	11/22/10	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	0.00899	<0.000186	0.0136	<0.000186	0.0673	0.0915	0.115	0.00579
MW-4	11/24/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-5	11/24/08	<0.000917	0.0806	0.0424	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	0.0326	<0.000917	0.0427	<0.000917	0.136	0.261	0.372	0.0201
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00262	<0.000184	<0.000184	0.0122	<0.000184	0.0172	<0.000184	0.0779	0.137	0.194	0.00767
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-6	11/24/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00321	<0.000184	0.00322	<0.000184	0.0217	0.0339	0.015	0.00251
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00129	<0.000184	0.00144	<0.000184	0.00437	0.0133	0.00426	0.00125
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
	12/01/11	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	0.000962	<0.000186	0.00131	<0.000186	0.00345	0.00676	0.00328	0.00152
MW-7	11/24/08	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-8	11/25/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.135	<0.000184	0.188	<0.000184	0.529	1.26	1.86	0.0861
	12/08/09	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	0.0165	<0.000917	<0.000917	0.0789	<0.000917	0.113	<0.000917	0.359	0.839	1.14	0.0566
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		

TABLE III
GROUNDWATER ANALYTICAL SUMMARY
PAHs
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Acenaphthlene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Napthalene	1-Methylnapthalene	2-Methylnapthalene	Dibenzofuran
NMWQCC Drinking Water Standards Section 1-101.UU and 3-103.A					0.001	0.007	0.002		0.002	0.002	0.003			0.004			0.03			
MW-9	11/25/08	<0.000184	0.00163	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00172	<0.000184	<0.000184	0.00846	<0.000184	0.0104	<0.000184	0.0641	0.0851	0.112	0.00578
	12/07/09	Not sampled due to insufficient water volume																		
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-10	11/24/08	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0382	<0.000922	0.0512	<0.000922	0.212	0.382	0.537	0.0286
	12/08/09	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	0.0357	<0.000917	<0.000917	0.172	<0.000917	0.245	<0.000917	0.856	1.89	2.64	0.112
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-11	11/24/08	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-12	11/24/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.000696	<0.000183	<0.000183	<0.000183	0.000648	0.000372	<0.000183	0.00145
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.000615	<0.000184	<0.000184	0.000706
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
	12/01/11	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.000302	<0.000183	0.000228
MW-13	11/24/08	Not sampled due to insufficient water volume																		
	12/07/09	Not sampled due to insufficient water volume																		
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-14	11/24/08	Not sampled due to insufficient water volume																		
	12/07/09	Not sampled due to insufficient water volume																		
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-15	11/24/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-16	11/24/08	<0.000185	<0.000185	0.000888	0.000959	0.000847	0.000814	0.00102	0.000879	0.000958	<0.000185	0.0013	0.000417	0.001	0.00076	0.0012	<0.000185	0.000216	0.000313	<0.000185
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		

TABLE III
GROUNDWATER ANALYTICAL SUMMARY
PAHs
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Acenaphthlene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Napthalene	1-Methylnapthalene	2-Methylnapthalene	Dibenzofuran
		NMWQCC Drinking Water Standards Section 1-101.UU and 3-103.A																		
					0.001	0.007	0.002		0.002	0.002	0.003			0.004				0.03		
MW-17	11/24/08	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-18	11/24/08	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	0.000216	0.000245	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187	<0.000187
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-19	11/24/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-20	11/24/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
MW-21	11/24/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	12/07/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
RW-1	11/24/08	Not sampled due to insufficient water volume																		
	12/07/09	Not sampled due to insufficient water volume																		
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
RW-2	11/25/08	Not sampled due to insufficient water volume																		
	12/08/09	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	0.0379	<0.00184	<0.00184	0.162	<0.00184	0.256	<0.00184	0.798	1.74	2.60	0.0964
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
RW-3	11/25/08	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	0.0218	<0.000917	<0.000917	0.0966	<0.000917	0.129	<0.000917	0.400	0.888	1.31	0.0633
	12/08/09	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	0.0506	<0.00183	<0.00183	0.210	<0.00183	0.321	<0.00183	1.02	2.27	3.29	0.130
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
RW-4	11/25/08	Not sampled due to insufficient water volume																		
	12/08/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.00224	<0.000183	<0.000183	0.011	<0.000183	0.0161	<0.000183	0.0801	0.134	0.184	0.00772
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		

TABLE III
GROUNDWATER ANALYTICAL SUMMARY
PAHs
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 1
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Acenaphthlene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Napthalene	1-Methylnapthalene	2-Methylnapthalene	Dibenzofuran
NMWQCC Drinking Water Standards Section 1-101.UU and 3-103.A					0.001	0.007	0.002		0.002	0.002	0.003			0.004				0.03		
RW-5	11/25/08	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	0.0218	<0.000917	0.0273	<0.000917	0.132	0.17	0.254	0.013
	12/08/09	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	0.0166	<0.000917	<0.000917	0.0726	<0.000917	0.105	<0.000917	0.338	0.726	1.07	0.0426
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
RW-6	11/25/08	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	0.0286	<0.000917	<0.000917	0.126	<0.000917	0.167	<0.000917	0.564	1.33	1.93	0.0751
	12/08/09	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0110	<0.000922	<0.000922	0.0330	<0.000922	0.0456	<0.000922	0.175	0.327	0.462	0.0180
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
RW-7	11/25/08	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0254	<0.000922	<0.000922	0.106	<0.000922	0.143	<0.000922	0.477	1.07	1.55	0.0709
	12/08/09	<0.00862	<0.00862	<0.00862	<0.00862	<0.00862	<0.00862	<0.00862	<0.00862	0.191	<0.00862	<0.00862	0.844	<0.00862	1.28	<0.00862	3.95	9.15	13.1	0.0531
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
RW-8	11/25/08	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	0.342	<0.00459	0.436	<0.00459	1.17	2.87	4.15	0.214
	12/08/09	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	0.116	<0.00461	<0.00461	0.480	<0.00461	0.704	<0.00461	2.16	5.04	7.19	0.294
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
RW-9	11/25/08	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	0.064	<0.000917	0.0838	<0.000917	0.294	0.587	0.841	0.0488
	12/08/09	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	0.0186	<0.00183	<0.00183	0.0795	<0.00183	0.117	<0.00183	0.402	0.890	1.24	0.0576
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
RW-10	11/25/08	Not sampled due to insufficient water volume																		
	12/08/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.00496	<0.000183	0.00643	<0.000183	0.0478	0.0674	0.0898	0.00344
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		
RW-11	11/25/08	0.0062	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	0.0105	<0.000917	<0.000917	0.0426	<0.000917	0.0571	<0.000917	0.145	0.322	0.441	0.0269
	12/08/09	Not sampled due to pump stuck in well.																		
	11/22/10	Not sampled as part of Quarterly Monitoring Event																		

Notes:

1. Shaded cells indicate NMWQCC Drinking Water Standards Section 1-101.UU and 3-103.A excedance.
2. **Bold** indicates detection.
3. BTEX analyses by EPA Method 8021B.
4. Results shown in mg/L.
5. 2008 through 2010 results collected by NOVA.

TABLE 1

GROUNDWATER ELEVATION DATA

Plains Marketing, L.P.
Darr Angel #1
Lea County, New Mexico

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 1	03/02/11	3787.62	61.11	62.08	0.97	3726.36
MW - 1	*03/03/11*	3787.62	61.11	62.08	0.97	3726.36
MW - 2	01/04/11	3788.19	sheen	61.53	0.00	3726.66
MW - 2	01/11/11	3788.19	sheen	61.47	0.00	3726.72
MW - 2	01/17/11	3788.19	sheen	61.43	0.00	3726.76
MW - 2	03/02/11	3788.19	60.47	60.68	0.21	3727.69
MW - 2	*03/03/11*	3788.19	60.47	ND	0.21	#VALUE!
MW - 2	03/08/11	3788.19	61.56	61.68	0.12	3726.61
MW - 2	03/14/11	3788.19	61.52	61.66	0.14	3726.65
MW - 2	03/16/11	3788.19	61.57	61.59	0.02	3726.62
MW - 2	03/21/11	3788.19	61.52	61.60	0.08	3726.66
MW - 2	03/23/11	3788.19	61.55	61.69	0.14	3726.62
MW - 2	03/28/11	3788.19	61.54	61.69	0.15	3726.63
MW - 2	03/30/11	3788.19	61.60	61.62	0.02	3726.59
MW - 2	04/05/11	3788.19	sheen	61.60	0.00	3726.59
MW - 2	04/11/11	3788.19	sheen	61.61	0.00	3726.58
MW - 2	04/13/11	3788.19	sheen	61.57	0.00	3726.62
MW - 2	04/19/11	3788.19	sheen	61.55	0.00	3726.64
MW - 2	04/25/11	3788.19	sheen	61.49	0.00	3726.70
MW - 3	01/04/11	3789.03	sheen	61.32	0.00	3727.71
MW - 3	01/11/11	3789.03	sheen	61.24	0.00	3727.79
MW - 3	01/17/11	3789.03	sheen	61.78	0.00	3727.25
MW - 3	03/02/11	3789.03	sheen	62.40	0.00	3726.63
MW - 3	*03/03/11*	3789.03	sheen	62.41	0.00	3726.62
MW - 3	03/08/11	3789.03	sheen	62.47	0.00	3726.56
MW - 3	03/14/11	3789.03	sheen	62.52	0.00	3726.51
MW - 3	03/16/11	3789.03	sheen	62.13	0.00	3726.90
MW - 3	03/21/11	3789.03	sheen	62.51	0.00	3726.52
MW - 3	03/23/11	3789.03	sheen	62.49	0.00	3726.54
MW - 3	03/28/11	3789.03	sheen	62.48	0.00	3726.55
MW - 3	03/30/11	3789.03	sheen	62.45	0.00	3726.58
MW - 3	04/05/11	3789.03	sheen	62.50	0.00	3726.53
MW - 3	04/11/11	3789.03	sheen	62.50	0.00	3726.53
MW - 3	04/13/11	3789.03	sheen	62.48	0.00	3726.55
MW - 3	04/19/11	3789.03	sheen	62.40	0.00	3726.63
MW - 3	04/25/11	3789.03	sheen	62.41	0.00	3726.62
MW - 4	*03/03/11*	3790.06	-	62.35	0.00	3727.71
MW - 5	03/02/11	3787.47	61.02	63.24	2.22	3726.12
MW - 5	*03/03/11*	3787.47	61.02	63.24	2.22	3726.12
MW - 6	01/04/11	3786.81	sheen	61.08	0.00	3725.73
MW - 6	01/11/11	3786.81	sheen	60.83	0.00	3725.98
MW - 6	01/17/11	3786.81	sheen	60.91	0.00	3725.90
MW - 6	03/02/11	3786.81	sheen	61.13	0.00	3725.68
MW - 6	*03/03/11*	3786.81	sheen	61.15	0.00	3725.66
MW - 6	03/08/11	3786.81	sheen	61.16	0.00	3725.65
MW - 6	03/14/11	3786.81	sheen	61.18	0.00	3725.63
MW - 6	03/16/11	3786.81	sheen	61.20	0.00	3725.61

TABLE 1

GROUNDWATER ELEVATION DATA

Plains Marketing, L.P.
Darr Angel #1
Lea County, New Mexico

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 6	03/21/11	3786.81	sheen	61.20	0.00	3725.61
MW - 6	03/23/11	3786.81	sheen	61.15	0.00	3725.66
MW - 6	03/28/11	3786.81	sheen	61.16	0.00	3725.65
MW - 6	03/30/11	3786.81	sheen	61.20	0.00	3725.61
MW - 6	04/05/11	3786.81	sheen	61.21	0.00	3725.60
MW - 6	04/11/11	3786.81	sheen	61.19	0.00	3725.62
MW - 6	04/13/11	3786.81	sheen	61.22	0.00	3725.59
MW - 6	04/19/11	3786.81	sheen	61.30	0.00	3725.51
MW - 6	04/25/11	3786.81	sheen	61.18	0.00	3725.63
MW - 7	*03/03/11*	3786.82	-	60.93	0.00	3725.89
MW - 8	01/04/11	3788.24	61.08	62.87	1.79	3726.89
MW - 8	01/11/11	3788.24	61.38	61.97	0.59	3726.77
MW - 8	01/17/11	3788.24	61.36	61.99	0.63	3726.79
MW - 8	03/02/11	3788.24	61.46	63.11	1.65	3726.53
MW - 8	*03/03/11*	3788.24	61.42	63.11	1.69	3726.57
MW - 8	03/08/11	3788.24	61.68	62.28	0.60	3726.47
MW - 8	03/14/11	3788.24	61.63	62.39	0.76	3726.50
MW - 8	03/16/11	3788.24	61.67	62.22	0.55	3726.49
MW - 8	03/21/11	3788.24	61.65	62.30	0.65	3726.49
MW - 8	03/23/11	3788.24	61.66	62.25	0.59	3726.49
MW - 8	03/28/11	3788.24	61.66	62.24	0.58	3726.49
MW - 8	03/30/11	3788.24	61.63	63.04	1.41	3726.40
MW - 8	04/05/11	3788.24	61.58	62.77	1.19	3726.48
MW - 8	04/11/11	3788.24	61.55	62.77	1.22	3726.51
MW - 8	04/13/11	3788.24	61.60	62.70	1.10	3726.48
MW - 8	04/19/11	3788.24	61.68	62.73	1.05	3726.40
MW - 8	04/25/11	3788.24	61.62	62.63	1.01	3726.47
MW - 9	03/02/11	3788.33	61.88	61.91	0.03	3726.45
MW - 9	*03/03/11*	3788.33	61.88	61.91	0.03	3726.45
MW - 10	01/04/11	3788.46	62.12	62.95	0.83	3726.22
MW - 10	01/11/11	3788.46	62.02	62.96	0.94	3726.30
MW - 10	01/17/11	3788.46	62.04	62.91	0.87	3726.29
MW - 10	03/02/11	3788.46	61.65	66.21	4.56	3726.13
MW - 10	*03/03/11*	3788.46	61.65	67.21	5.56	3725.98
MW - 10	03/08/11	3788.46	62.15	63.86	1.71	3726.05
MW - 10	03/14/11	3788.46	62.26	63.52	1.26	3726.01
MW - 10	03/16/11	3788.46	62.32	62.55	0.23	3726.11
MW - 10	03/21/11	3788.46	62.30	63.70	1.40	3725.95
MW - 10	03/23/11	3788.46	62.14	63.79	1.65	3726.07
MW - 10	03/28/11	3788.46	62.12	63.78	1.66	3726.09
MW - 10	03/30/11	3788.46	62.20	63.78	1.58	3726.02
MW - 10	04/05/11	3788.46	62.10	63.78	1.68	3726.11
MW - 10	04/11/11	3788.46	62.10	63.70	1.60	3726.12
MW - 10	04/13/11	3788.46	62.12	63.70	1.58	3726.10
MW - 10	04/19/11	3788.46	62.18	63.68	1.50	3726.06
MW - 10	04/25/11	3788.46	62.15	63.49	1.34	3726.11
MW - 11	05/15/00	3786.32	-	58.45	0.00	3727.87

TABLE 1

GROUNDWATER ELEVATION DATA

Plains Marketing, L.P.
Darr Angel #1
Lea County, New Mexico

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 11	06/27/00	3786.32	-	58.05	0.00	3728.27
MW - 11	09/13/00	3786.32	-	58.17	0.00	3728.15
MW - 11	11/15/00	3786.32	-	58.17	0.00	3728.15
MW - 11	02/23/01	3786.32	-	58.31	0.00	3728.01
MW - 11	08/07/01	3786.32	-	58.57	0.00	3727.75
MW - 11	11/01/01	3786.32	-	58.70	0.00	3727.62
MW - 11	02/19/02	3786.32	-	58.80	0.00	3727.52
MW - 11	06/19/02	3786.32	-	59.02	0.00	3727.30
MW - 11	09/23/02	3786.32	-	59.16	0.00	3727.16
MW - 11	12/20/02	3786.32	-	59.28	0.00	3727.04
MW - 11	03/19/03	3789.55	-	59.41	0.00	3730.14
MW - 11	06/11/03	3789.55	-	59.52	0.00	3730.03
MW - 11	09/09/03	3789.55	-	59.66	0.00	3729.89
MW - 11	12/09/03	3789.55	-	59.54	0.00	3730.01
MW - 11	03/10/04	3789.55	-	59.95	0.00	3729.60
MW - 11	08/03/04	3789.55	-	60.90	0.00	3728.65
MW - 11	09/01/04	3789.55	-	60.13	0.00	3729.42
MW - 11	12/20/04	3789.55	-	60.14	0.00	3729.41
MW - 11	*03/21/05*	3789.55	-	60.18	0.00	3729.37
MW - 11	*06/20/05*	3789.55	-	60.29	0.00	3729.26
MW - 11	*09/19/05*	3789.55	-	60.41	0.00	3729.14
MW - 11	*12/21/05*	3789.55	-	60.51	0.00	3729.04
MW - 11	*03/22/06*	3789.55	-	60.61	0.00	3728.94
MW - 11	*06/19/06*	3789.55	-	60.71	0.00	3728.84
MW - 11	*09/19/06*	3789.55	-	60.84	0.00	3728.71
MW - 11	*12/07/06*	3789.55	-	60.93	0.00	3728.62
MW - 11	*02/28/07*	3789.55	-	61.01	0.00	3728.54
MW - 11	*06/06/07*	3789.55	-	61.15	0.00	3728.40
MW - 11	*09/05/07*	3789.55	-	61.26	0.00	3728.29
MW - 11	*11/20/07*	3789.55	-	61.36	0.00	3728.19
MW - 11	*02/27/08*	3789.55	-	61.52	0.00	3728.03
MW - 11	*06/03/08*	3789.55	-	61.64	0.00	3727.91
MW - 11	*09/04/08*	3789.55	-	61.76	0.00	3727.79
MW - 11	*11/24/08*	3789.55	-	61.89	0.00	3727.66
MW - 11	*02/23/09*	3789.55	-	61.99	0.00	3727.56
MW - 11	*05/27/09*	3789.55	-	62.13	0.00	3727.42
MW - 11	*08/20/09*	3789.55	-	62.26	0.00	3727.29
MW - 11	*12/07/09*	3789.55	-	62.41	0.00	3727.14
MW - 11	*01/11/10*	3789.55	-	62.45	0.00	3727.10
MW - 11	*02/16/10*	3789.55	-	62.52	0.00	3727.03
MW - 11	*05/26/10*	3789.55	-	62.49	0.00	3727.06
MW - 11	*08/23/10*	3789.55	-	62.48	0.00	3727.07
MW - 11	*11/22/10*	3789.55	**WELL IS DRY**			
MW - 12	*03/03/11*	3787.81	-	61.66	0.00	3726.15
MW - 13	01/04/11	3788.55	61.51	ND	0.00	#VALUE!
MW - 13	01/11/11	3788.55	61.45	ND	0.00	#VALUE!
MW - 13	01/17/11	3788.55	61.45	ND	0.00	#VALUE!
MW - 13	03/02/11	3788.55	61.58	63.30	1.72	3726.71
MW - 13	*03/03/11*	3788.55	61.58	63.32	1.74	3726.71
MW - 13	03/08/11	3788.55	61.60	63.30	1.70	3726.70

TABLE 1

GROUNDWATER ELEVATION DATA

Plains Marketing, L.P.
Darr Angel #1
Lea County, New Mexico

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 13	03/14/11	3788.55	61.61	63.30	1.69	3726.69
MW - 13	03/16/11	3788.55	61.77	63.30	1.53	3726.55
MW - 13	03/21/11	3788.55	61.72	63.30	1.58	3726.59
MW - 13	03/23/11	3788.55	61.62	63.30	1.68	3726.68
MW - 13	03/28/11	3788.55	61.60	63.30	1.70	3726.70
MW - 13	03/30/11	3788.55	61.65	63.30	1.65	3726.65
MW - 13	04/05/11	3788.55	61.66	63.30	1.64	3726.64
MW - 13	04/11/11	3788.55	61.65	63.30	1.65	3726.65
MW - 13	04/13/11	3788.55	61.78	63.30	1.52	3726.54
MW - 13	04/19/11	3788.55	61.86	63.30	1.44	3726.47
MW - 13	04/25/11	3788.55	61.80	63.30	1.50	3726.53
MW - 14	01/04/11	3788.72	61.07	ND	0.00	#VALUE!
MW - 14	01/11/11	3788.72	60.81	ND	0.00	#VALUE!
MW - 14	01/17/11	3788.72	61.80	ND	0.00	#VALUE!
MW - 14	03/02/11	3788.72	61.16	63.40	2.24	3727.22
MW - 14	*03/03/11*	3788.72	61.15	63.38	2.23	3727.24
MW - 14	03/08/11	3788.72	61.16	63.40	2.24	3727.22
MW - 14	03/14/11	3788.72	61.18	63.40	2.22	3727.21
MW - 14	03/16/11	3788.72	61.31	63.40	2.09	3727.10
MW - 14	03/21/11	3788.72	61.28	63.40	2.12	3727.12
MW - 14	03/23/11	3788.72	61.17	63.40	2.23	3727.22
MW - 14	03/28/11	3788.72	61.18	63.40	2.22	3727.21
MW - 14	03/30/11	3788.72	61.21	63.40	2.19	3727.18
MW - 14	04/05/11	3788.72	61.20	63.40	2.20	3727.19
MW - 14	04/11/11	3788.72	61.15	63.40	2.25	3727.23
MW - 14	04/13/11	3788.72	61.15	63.40	2.25	3727.23
MW - 14	04/19/11	3788.72	61.17	63.40	2.23	3727.22
MW - 14	04/25/11	3788.72	61.16	63.40	2.24	3727.22
MW - 15	*03/03/11*	3788.95	-	61.92	0.00	3727.03
MW - 16	*03/03/11*	3789.61	-	62.36	0.00	3727.25
MW - 17	*03/03/11*	3787.95	-	61.62	0.00	3726.33
MW - 18	*03/03/11*	3788.82	-	62.10	0.00	3726.72
MW - 19	*03/03/11*	3787.51	-	61.60	0.00	3725.91
MW - 20	*03/03/11*	3788.53	-	61.81	0.00	3726.72
MW - 21	*03/03/11*	3786.46	-	61.59	0.00	3724.87
RW - 1	*03/03/11*	3788.33	59.80	ND	3.51	#VALUE!
RW - 2	03/02/11	3788.98	SHEEN	63.80	0.00	3725.18
RW - 2	*03/03/11*	3788.98	SHEEN	63.79	0.00	3725.19
RW - 3	01/04/11	3788.95	62.04	63.51	1.47	3726.69
RW - 3	01/11/11	3788.95	62.06	62.91	0.85	3726.76
RW - 3	01/17/11	3788.95	62.01	62.94	0.93	3726.80

TABLE 1

GROUNDWATER ELEVATION DATA

Plains Marketing, L.P.
Darr Angel #1
Lea County, New Mexico

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
RW - 3	03/02/11	3788.95	61.09	67.61	6.52	3726.88
RW - 3	*03/03/11*	3788.95	61.09	67.61	6.52	3726.88
RW - 3	03/08/11	3788.95	62.30	63.51	1.21	3726.47
RW - 3	03/14/11	3788.95	62.28	63.25	0.97	3726.52
RW - 3	03/16/11	3788.95	62.41	63.10	0.69	3726.44
RW - 3	03/21/11	3788.95	62.29	63.12	0.83	3726.54
RW - 3	03/23/11	3788.95	62.32	63.52	1.20	3726.45
RW - 3	03/28/11	3788.95	62.30	63.53	1.23	3726.47
RW - 3	03/30/11	3788.95	62.30	63.20	0.90	3726.52
RW - 3	04/05/11	3788.95	62.05	63.80	1.75	3726.64
RW - 3	04/11/11	3788.95	62.04	63.84	1.80	3726.64
RW - 3	04/14/11	3788.95	62.00	63.75	1.75	3726.69
RW - 3	04/19/11	3788.95	62.05	63.77	1.72	3726.64
RW - 3	04/25/11	3788.95	62.10	63.68	1.58	3726.61
RW - 4	03/02/11	3788.15	62.21	62.43	0.22	3725.91
RW - 4	*03/03/11*	3788.15	62.21	62.41	0.20	3725.91
RW - 5	*03/03/11*	3788.83	**PUMP STUCK IN WELL**			
RW - 6	03/02/11	3788.93	62.45	64.03	1.58	3726.24
RW - 6	*03/03/11*	3788.93	62.45	64.03	1.58	3726.24
RW - 7	03/02/11	3789.07	64.19	64.30	0.11	3724.86
RW - 7	*03/03/11*	3789.07	64.19	64.31	0.12	3724.86
RW - 8	03/02/11	3788.48	61.21	61.33	0.12	3727.25
RW - 8	*03/03/11*	3788.48	61.20	61.35	0.15	3727.26
RW - 9	03/02/11	3788.92	62.41	63.10	0.69	3726.41
RW - 9	*03/03/11*	3788.92	62.41	63.10	0.69	3726.41
RW - 10	03/02/11	3788.72	61.22	67.83	6.61	3726.51
RW - 10	*03/03/11*	3788.72	61.22	67.83	6.61	3726.51
RW - 11	03/02/11	3788.43	62.14	63.55	1.41	3726.08
RW - 11	*03/03/11*	3788.43	62.14	63.53	1.39	3726.08

Elevations based on the North American Vertical Datum of 1929

* denotes change in Top of Casing Elevation due to site resurvey.

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Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Jason Henry
Plains All American Houston

P.O. Box 4648
Houston, Tx, 77210-4648

Report Date: March 14, 2011

Work Order: 11030722

Project Location: Lovington, NM
Project Name: Darr Angel #1
Project Number: Darr Angel #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
259742	MW-17	water	2011-03-03	10:45	2011-03-03
259743	MW-19	water	2011-03-03	11:30	2011-03-03
259744	MW-21	water	2011-03-03	12:15	2011-03-03
259745	MW-3	water	2011-03-03	13:15	2011-03-03
259746	MW-12	water	2011-03-03	14:00	2011-03-03
259747	MW-6	water	2011-03-03	15:00	2011-03-03

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 11 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Darr Angel #1 were received by TraceAnalysis, Inc. on 2011-03-03 and assigned to work order 11030722. Samples for work order 11030722 were received intact without headspace and at a temperature of 3.3 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	67107	2011-03-09 at 08:39	79089	2011-03-09 at 09:06
BTEX	S 8021B	67220	2011-03-11 at 14:52	79235	2011-03-12 at 03:58

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 11030722 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 259742 - MW-17

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	79089	Date Analyzed:	2011-03-09	Analyzed By:	ME
Prep Batch:	67107	Sample Preparation:	2011-03-09	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0977	mg/L	1	0.100	98	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.0711	mg/L	1	0.100	71	51.1 - 128

Sample: 259743 - MW-19

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	79089	Date Analyzed:	2011-03-09	Analyzed By:	ME
Prep Batch:	67107	Sample Preparation:	2011-03-09	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.106	mg/L	1	0.100	106	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.0766	mg/L	1	0.100	77	51.1 - 128

Sample: 259744 - MW-21

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	79089	Date Analyzed:	2011-03-09	Analyzed By:	ME
Prep Batch:	67107	Sample Preparation:	2011-03-09	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.103	mg/L	1	0.100	103	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.0728	mg/L	1	0.100	73	51.1 - 128

Sample: 259745 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	79089	Date Analyzed:	2011-03-09	Analyzed By:	ME
Prep Batch:	67107	Sample Preparation:	2011-03-09	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		**0.0924**	mg/L	10	0.00100
Toluene		<0.0100	mg/L	10	0.00100
Ethylbenzene		**0.256**	mg/L	10	0.00100
Xylene		**0.668**	mg/L	10	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.00	mg/L	10	1.00	100	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.792	mg/L	10	1.00	79	51.1 - 128

Sample: 259746 - MW-12

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	79235	Date Analyzed:	2011-03-12	Analyzed By:	ME
Prep Batch:	67220	Sample Preparation:	2011-03-11	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.100	mg/L	1	0.100	100	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.105	mg/L	1	0.100	105	51.1 - 128

Sample: 259747 - MW-6

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	79235	Date Analyzed:	2011-03-12	Analyzed By:	ME
Prep Batch:	67220	Sample Preparation:	2011-03-11	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		**0.849**	mg/L	10	0.00100
Toluene		<0.0100	mg/L	10	0.00100
Ethylbenzene		<0.0100	mg/L	10	0.00100
Xylene		**0.198**	mg/L	10	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.962	mg/L	10	1.00	96	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.985	mg/L	10	1.00	98	51.1 - 128

Method Blank (1) QC Batch: 79089

QC Batch:	79089	Date Analyzed:	2011-03-09	Analyzed By:	ME
Prep Batch:	67107	QC Preparation:	2011-03-09	Prepared By:	ME

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.000400	mg/L	0.001
Toluene		<0.000300	mg/L	0.001
Ethylbenzene		<0.000300	mg/L	0.001
Xylene		<0.000333	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0948	mg/L	1	0.100	95	70.2 - 118
4-Bromofluorobenzene (4-BFB)		0.0918	mg/L	1	0.100	92	47.3 - 116

Method Blank (1) QC Batch: 79235

QC Batch: 79235 | Date Analyzed: 2011-03-12 | Analyzed By: ME
Prep Batch: 67220 | QC Preparation: 2011-03-11 | Prepared By: ME

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.000400	mg/L	0.001
Toluene		<0.000300	mg/L	0.001
Ethylbenzene		<0.000300	mg/L	0.001
Xylene		<0.000333	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0791	mg/L	1	0.100	79	70.2 - 118
4-Bromofluorobenzene (4-BFB)		0.0886	mg/L	1	0.100	89	47.3 - 116

Laboratory Control Spike (LCS-1)

QC Batch: 79089 | Date Analyzed: 2011-03-09 | Analyzed By: ME
Prep Batch: 67107 | QC Preparation: 2011-03-09 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.0888	mg/L	1	0.100	<0.000400	89	82.9 - 108
Toluene	0.0876	mg/L	1	0.100	<0.000300	88	82.7 - 107
Ethylbenzene	0.0874	mg/L	1	0.100	<0.000300	87	78.8 - 106
Xylene	0.262	mg/L	1	0.300	<0.000333	87	79.3 - 106

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.0939	mg/L	1	0.100	<0.000400	94	82.9 - 108	6	20
Toluene	0.0926	mg/L	1	0.100	<0.000300	93	82.7 - 107	6	20
Ethylbenzene	0.0909	mg/L	1	0.100	<0.000300	91	78.8 - 106	4	20
Xylene	0.275	mg/L	1	0.300	<0.000333	92	79.3 - 106	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0956	0.0978	mg/L	1	0.100	96	98	67.3 - 113
4-Bromofluorobenzene (4-BFB)	0.0948	0.0993	mg/L	1	0.100	95	99	68.2 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 79235 | Date Analyzed: 2011-03-12 | Analyzed By: ME
Prep Batch: 67220 | QC Preparation: 2011-03-11 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.102	mg/L	1	0.100	<0.000400	102	82.9 - 108
Toluene	0.103	mg/L	1	0.100	<0.000300	103	82.7 - 107
Ethylbenzene	0.101	mg/L	1	0.100	<0.000300	101	78.8 - 106
Xylene	0.306	mg/L	1	0.300	<0.000333	102	79.3 - 106

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.102	mg/L	1	0.100	<0.000400	102	82.9 - 108	0	20
Toluene	0.102	mg/L	1	0.100	<0.000300	102	82.7 - 107	1	20
Ethylbenzene	0.102	mg/L	1	0.100	<0.000300	102	78.8 - 106	1	20
Xylene	0.306	mg/L	1	0.300	<0.000333	102	79.3 - 106	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0907	0.100	mg/L	1	0.100	91	100	67.3 - 113
4-Bromofluorobenzene (4-BFB)	0.105	0.113	mg/L	1	0.100	105	113	68.2 - 124

Matrix Spike (MS-1) Spiked Sample: 259745

QC Batch: 79089 | Date Analyzed: 2011-03-09 | Analyzed By: ME
Prep Batch: 67107 | QC Preparation: 2011-03-09 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.926	mg/L	10	1.00	0.0924	83	77.9 - 114
Toluene	0.883	mg/L	10	1.00	<0.00300	88	78.3 - 111
Ethylbenzene	1.04	mg/L	10	1.00	0.02564	101	75.3 - 110
Xylene	2.96	mg/L	10	3.00	0.6685	76	75.7 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.948	mg/L	10	1.00	0.0924	86	77.9 - 114	2	20
Toluene	0.906	mg/L	10	1.00	<0.00300	91	78.3 - 111	3	20
Ethylbenzene	1.06	mg/L	10	1.00	0.02564	80	75.3 - 110	2	20
Xylene	3.05	mg/L	10	3.00	0.6685	79	75.7 - 109	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.980	0.992	mg/L	10	1	98	99	68.3 - 107
4-Bromofluorobenzene (4-BFB)	0.815	0.819	mg/L	10	1	82	82	60.1 - 135

Matrix Spike (MS-1) Spiked Sample: 259747

QC Batch: 79235 | Date Analyzed: 2011-03-12 | Analyzed By: ME
Prep Batch: 67220 | QC Preparation: 2011-03-11 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.80	mg/L	10	1.00	0.8487	95	77.9 - 114
Toluene	0.948	mg/L	10	1.00	<0.00300	95	78.3 - 111
Ethylbenzene	0.916	mg/L	10	1.00	<0.00300	92	75.3 - 110
Xylene	2.73	mg/L	10	3.00	0.1985	84	75.7 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.82	mg/L	10	1.00	0.8487	97	77.9 - 114	1	20
Toluene	0.972	mg/L	10	1.00	<0.00300	97	78.3 - 111	2	20
Ethylbenzene	0.949	mg/L	10	1.00	<0.00300	95	75.3 - 110	4	20
Xylene	2.83	mg/L	10	3.00	0.1985	88	75.7 - 109	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.927	0.886	mg/L	10	1	93	89	68.3 - 107
4-Bromofluorobenzene (4-BFB)	0.937	0.898	mg/L	10	1	94	90	60.1 - 135

Standard (CCV-2)

QC Batch: 79089 | Date Analyzed: 2011-03-09 | Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0921	92	80 - 120	2011-03-09
Toluene		mg/L	0.100	0.0898	90	80 - 120	2011-03-09
Ethylbenzene		mg/L	0.100	0.0880	88	80 - 120	2011-03-09
Xylene		mg/L	0.300	0.255	85	80 - 120	2011-03-09

Standard (CCV-3)

QC Batch: 79089 Date Analyzed: 2011-03-09 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0917	92	80 - 120	2011-03-09
Toluene		mg/L	0.100	0.0906	91	80 - 120	2011-03-09
Ethylbenzene		mg/L	0.100	0.0870	87	80 - 120	2011-03-09
Xylene		mg/L	0.300	0.256	85	80 - 120	2011-03-09

Standard (CCV-1)

QC Batch: 79235 Date Analyzed: 2011-03-12 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.104	104	80 - 120	2011-03-12
Toluene		mg/L	0.100	0.104	104	80 - 120	2011-03-12
Ethylbenzene		mg/L	0.100	0.103	103	80 - 120	2011-03-12
Xylene		mg/L	0.300	0.312	104	80 - 120	2011-03-12

Standard (CCV-2)

QC Batch: 79235 Date Analyzed: 2011-03-12 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.100	100	80 - 120	2011-03-12
Toluene		mg/L	0.100	0.0982	98	80 - 120	2011-03-12
Ethylbenzene		mg/L	0.100	0.0932	93	80 - 120	2011-03-12
Xylene		mg/L	0.300	0.279	93	80 - 120	2011-03-12

Standard (CCV-3)

QC Batch: 79235 Date Analyzed: 2011-03-12 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0959	96	80 - 120	2011-03-12
Toluene		mg/L	0.100	0.0945	94	80 - 120	2011-03-12
Ethylbenzene		mg/L	0.100	0.0927	93	80 - 120	2011-03-12

continued ...

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Xylene		mg/L	0.300	0.276	92	80 - 120	2011-03-12

Summary Report

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX 79703

Report Date: June 27, 2011

Work Order: 11061715

Project Location: Lea Co., NM
Project Name: Darr Angell #1
Project Number: 074683

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
269708	Dup-2 061511	water	2011-06-15	00:00	2011-06-17
269709	MW-21 061511	water	2011-06-15	16:15	2011-06-17
269710	MW-7 061511	water	2011-06-15	16:30	2011-06-17
269711	MW-19 061511	water	2011-06-15	16:45	2011-06-17
269712	MW-17 061511	water	2011-06-15	17:00	2011-06-17
269713	MW-12 061511	water	2011-06-15	17:15	2011-06-17
269714	MW-6 061511	water	2011-06-15	17:30	2011-06-17

	BTEX			
Sample - Field Code	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)
269708 - Dup-2 061511	**1.06**	<0.0500	<0.0500	<0.0500
269709 - MW-21 061511	<0.00100	<0.00100	<0.00100	<0.00100
269710 - MW-7 061511	<0.00100	<0.00100	<0.00100	<0.00100
269711 - MW-19 061511	<0.00100	<0.00100	<0.00100	<0.00100
269712 - MW-17 061511	<0.00100	<0.00100	<0.00100	<0.00100
269713 - MW-12 061511	**0.0372**	<0.00100	<0.00100	<0.00100
269714 - MW-6 061511	**0.760**	<0.0100	<0.0100	<0.0100

TRACEANALYSIS, INC.

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200 East Sunset Road, Suite E | El Paso, Texas 79922 | 888•588•3443 | 915•585•3443 | FAX 915•585•4944
5002 Basin Street, Suite A1 | Midland, Texas 79703 | | 432•689•6301 | FAX 432•689•6313
6015 Harris Parkway, Suite 110 | Ft. Worth, Texas 76132 | | 817•201•5260 |
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX, 79703

Report Date: June 27, 2011

Work Order: 11061715

Project Location: Lea Co., NM
Project Name: Darr Angell #1
Project Number: 074683

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
269708	Dup-2 061511	water	2011-06-15	00:00	2011-06-17
269709	MW-21 061511	water	2011-06-15	16:15	2011-06-17
269710	MW-7 061511	water	2011-06-15	16:30	2011-06-17
269711	MW-19 061511	water	2011-06-15	16:45	2011-06-17
269712	MW-17 061511	water	2011-06-15	17:00	2011-06-17
269713	MW-12 061511	water	2011-06-15	17:15	2011-06-17
269714	MW-6 061511	water	2011-06-15	17:30	2011-06-17

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Darr Angell #1 were received by TraceAnalysis, Inc. on 2011-06-17 and assigned to work order 11061715. Samples for work order 11061715 were received intact without headspace and at a temperature of 3.7 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	69993	2011-06-22 at 08:33	82424	2011-06-22 at 08:33
BTEX	S 8021B	69994	2011-06-22 at 13:18	82425	2011-06-22 at 23:56
BTEX	S 8021B	70083	2011-06-24 at 15:14	82512	2011-06-24 at 18:30

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 11061715 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 269708 - Dup-2 061511

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	82512	Date Analyzed:	2011-06-24	Analyzed By:	ME
Prep Batch:	70083	Sample Preparation:	2011-06-24	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**1.06**	mg/L	50	0.00100
Toluene		1	<0.0500	mg/L	50	0.00100
Ethylbenzene		1	<0.0500	mg/L	50	0.00100
Xylene		1	<0.0500	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.94	mg/L	50	5.00	79	67.8 - 129
4-Bromofluorobenzene (4-BFB)			3.67	mg/L	50	5.00	73	51.1 - 128

Sample: 269709 - MW-21 061511

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	82424	Date Analyzed:	2011-06-22	Analyzed By:	ME
Prep Batch:	69993	Sample Preparation:	2011-06-22	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	<0.00100	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0929	mg/L	1	0.100	93	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0862	mg/L	1	0.100	86	51.1 - 128

Sample: 269710 - MW-7 061511

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	82424	Date Analyzed:	2011-06-22	Analyzed By:	ME
Prep Batch:	69993	Sample Preparation:	2011-06-22	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	<0.00100	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0927	mg/L	1	0.100	93	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0855	mg/L	1	0.100	86	51.1 - 128

Sample: 269711 - MW-19 061511

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	82425	Date Analyzed:	2011-06-22	Analyzed By:	ME
Prep Batch:	69994	Sample Preparation:	2011-06-22	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	<0.00100	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0914	mg/L	1	0.100	91	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0793	mg/L	1	0.100	79	51.1 - 128

Sample: 269712 - MW-17 061511

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	82425	Date Analyzed:	2011-06-22	Analyzed By:	ME
Prep Batch:	69994	Sample Preparation:	2011-06-22	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	<0.00100	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0860	mg/L	1	0.100	86	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0739	mg/L	1	0.100	74	51.1 - 128

Sample: 269713 - MW-12 061511

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	82425	Date Analyzed:	2011-06-22	Analyzed By:	ME
Prep Batch:	69994	Sample Preparation:	2011-06-22	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.0372**	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0804	mg/L	1	0.100	80	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0722	mg/L	1	0.100	72	51.1 - 128

Sample: 269714 - MW-6 061511

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	82425	Date Analyzed:	2011-06-22	Analyzed By:	ME
Prep Batch:	69994	Sample Preparation:	2011-06-22	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.760**	mg/L	10	0.00100
Toluene		1	<0.0100	mg/L	10	0.00100
Ethylbenzene		1	<0.0100	mg/L	10	0.00100
Xylene		1	<0.0100	mg/L	10	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.890	mg/L	10	1.00	89	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.789	mg/L	10	1.00	79	51.1 - 128

Method Blanks

Method Blank (1) QC Batch: 82424

QC Batch: 82424 | Date Analyzed: 2011-06-22 | Analyzed By: ME
Prep Batch: 69993 | QC Preparation: 2011-06-22 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0898	mg/L	1	0.100	90	70.2 - 118
4-Bromofluorobenzene (4-BFB)			0.0782	mg/L	1	0.100	78	47.3 - 116

Method Blank (1) QC Batch: 82425

QC Batch: 82425 | Date Analyzed: 2011-06-22 | Analyzed By: ME
Prep Batch: 69994 | QC Preparation: 2011-06-22 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0787	mg/L	1	0.100	79	70.2 - 118
4-Bromofluorobenzene (4-BFB)			0.0670	mg/L	1	0.100	67	47.3 - 116

Method Blank (1) QC Batch: 82512

QC Batch: 82512 | Date Analyzed: 2011-06-24 | Analyzed By: ME
Prep Batch: 70083 | QC Preparation: 2011-06-24 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0820	mg/L	1	0.100	82	70.2 - 118
4-Bromofluorobenzene (4-BFB)			0.0778	mg/L	1	0.100	78	47.3 - 116

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 82424 | Date Analyzed: 2011-06-22 | Analyzed By: ME
Prep Batch: 69993 | QC Preparation: 2011-06-22 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0999	mg/L	1	0.100	<0.000400	100	76.8 - 110
Toluene		1	0.107	mg/L	1	0.100	<0.000300	107	81 - 118
Ethylbenzene		1	0.0906	mg/L	1	0.100	<0.000300	91	78.8 - 118
Xylene		1	0.270	mg/L	1	0.300	<0.000333	90	80.3 - 119

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.106	mg/L	1	0.100	<0.000400	106	76.8 - 110	6	20
Toluene		1	0.115	mg/L	1	0.100	<0.000300	115	81 - 118	7	20
Ethylbenzene		1	0.0981	mg/L	1	0.100	<0.000300	98	78.8 - 118	8	20
Xylene		1	0.292	mg/L	1	0.300	<0.000333	97	80.3 - 119	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0918	0.0901	mg/L	1	0.100	92	90	66.6 - 114
4-Bromofluorobenzene (4-BFB)	0.0877	0.0873	mg/L	1	0.100	88	87	68.2 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 82425 | Date Analyzed: 2011-06-22 | Analyzed By: ME
Prep Batch: 69994 | QC Preparation: 2011-06-22 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.101	mg/L	1	0.100	<0.000400	101	76.8 - 110
Toluene		1	0.108	mg/L	1	0.100	<0.000300	108	81 - 118
Ethylbenzene		1	0.0912	mg/L	1	0.100	<0.000300	91	78.8 - 118
Xylene		1	0.272	mg/L	1	0.300	<0.000333	91	80.3 - 119

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.104	mg/L	1	0.100	<0.000400	104	76.8 - 110	3	20
Toluene		1	0.112	mg/L	1	0.100	<0.000300	112	81 - 118	4	20
Ethylbenzene		1	0.0960	mg/L	1	0.100	<0.000300	96	78.8 - 118	5	20
Xylene		1	0.286	mg/L	1	0.300	<0.000333	95	80.3 - 119	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0875	0.0800	mg/L	1	0.100	88	80	66.6 - 114
4-Bromofluorobenzene (4-BFB)	0.0828	0.0768	mg/L	1	0.100	83	77	68.2 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 82512 | Date Analyzed: 2011-06-24 | Analyzed By: ME
Prep Batch: 70083 | QC Preparation: 2011-06-24 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.106	mg/L	1	0.100	<0.000400	106	76.8 - 110
Toluene		1	0.110	mg/L	1	0.100	<0.000300	110	81 - 118
Ethylbenzene		1	0.0926	mg/L	1	0.100	<0.000300	93	78.8 - 118
Xylene		1	0.277	mg/L	1	0.300	<0.000333	92	80.3 - 119

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.108	mg/L	1	0.100	<0.000400	108	76.8 - 110	2	20
Toluene		1	0.112	mg/L	1	0.100	<0.000300	112	81 - 118	2	20
Ethylbenzene		1	0.0938	mg/L	1	0.100	<0.000300	94	78.8 - 118	1	20
Xylene		1	0.281	mg/L	1	0.300	<0.000333	94	80.3 - 119	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0858	0.0830	mg/L	1	0.100	86	83	66.6 - 114
4-Bromofluorobenzene (4-BFB)	0.0898	0.0860	mg/L	1	0.100	90	86	68.2 - 124

Matrix Spike (MS-1) Spiked Sample: 269706

QC Batch: 82424 | Date Analyzed: 2011-06-22 | Analyzed By: ME
Prep Batch: 69993 | QC Preparation: 2011-06-22 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	6.05	mg/L	50	5.00	1.3048	95	77.9 - 114
Toluene		1	5.43	mg/L	50	5.00	<0.0150	109	78.3 - 111
Ethylbenzene		1	4.55	mg/L	50	5.00	<0.0150	91	75.3 - 110
Xylene		1	13.7	mg/L	50	15.0	<0.0166	91	75.7 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	6.00	mg/L	50	5.00	1.3048	94	77.9 - 114	1	20
Toluene		1	5.42	mg/L	50	5.00	<0.0150	108	78.3 - 111	0	20
Ethylbenzene		1	4.68	mg/L	50	5.00	<0.0150	94	75.3 - 110	3	20
Xylene		1	13.9	mg/L	50	15.0	<0.0166	93	75.7 - 109	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	4.52	4.35	mg/L	50	5	90	87	68.3 - 107
4-Bromofluorobenzene (4-BFB)	4.46	4.22	mg/L	50	5	89	84	60.1 - 135

Matrix Spike (MS-1) Spiked Sample: 269864

QC Batch: 82425 | Date Analyzed: 2011-06-22 | Analyzed By: ME
Prep Batch: 69994 | QC Preparation: 2011-06-22 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	32.7	mg/L	200	20.0	13.3925	96	77.9 - 114
Toluene		1	21.5	mg/L	200	20.0	1.2613	101	78.3 - 111
Ethylbenzene		1	18.5	mg/L	200	20.0	<0.0600	92	75.3 - 110
Xylene		1	54.4	mg/L	200	60.0	<0.0666	91	75.7 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	33.5	mg/L	200	20.0	13.3925	100	77.9 - 114	2	20
Toluene		1	22.2	mg/L	200	20.0	1.2613	105	78.3 - 111	3	20

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		1	19.1	mg/L	200	20.0	<0.0600	96	75.3 - 110	3	20
Xylene		1	56.2	mg/L	200	60.0	<0.0666	94	75.7 - 109	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	15.8	17.0	mg/L	200	20	79	85	68.3 - 107
4-Bromofluorobenzene (4-BFB)	15.6	16.9	mg/L	200	20	78	84	60.1 - 135

Matrix Spike (MS-1) Spiked Sample: 269869

QC Batch: 82512 | Date Analyzed: 2011-06-24 | Analyzed By: ME
Prep Batch: 70083 | QC Preparation: 2011-06-24 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	24.5	mg/L	100	10.0	15.0602	94	77.9 - 114
Toluene		1	10.8	mg/L	100	10.0	<0.0300	108	78.3 - 111
Ethylbenzene		1	9.03	mg/L	100	10.0	0.7019	83	75.3 - 110
Xylene		1	26.4	mg/L	100	30.0	<0.0333	88	75.7 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	24.6	mg/L	100	10.0	15.0602	95	77.9 - 114	0	20
Toluene		1	10.9	mg/L	100	10.0	<0.0300	109	78.3 - 111	1	20
Ethylbenzene		1	9.07	mg/L	100	10.0	0.7019	84	75.3 - 110	0	20
Xylene		1	26.5	mg/L	100	30.0	<0.0333	88	75.7 - 109	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	7.80	8.31	mg/L	100	10	78	83	68.3 - 107
4-Bromofluorobenzene (4-BFB)	7.89	8.22	mg/L	100	10	79	82	60.1 - 135

Calibration Standards

Standard (CCV-2)

QC Batch: 82424 | Date Analyzed: 2011-06-22 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.108	108	80 - 120	2011-06-22
Toluene		1	mg/L	0.100	0.114	114	80 - 120	2011-06-22
Ethylbenzene		1	mg/L	0.100	0.0958	96	80 - 120	2011-06-22
Xylene		1	mg/L	0.300	0.287	96	80 - 120	2011-06-22

Standard (CCV-3)

QC Batch: 82424 | Date Analyzed: 2011-06-22 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.105	105	80 - 120	2011-06-22
Toluene		1	mg/L	0.100	0.112	112	80 - 120	2011-06-22
Ethylbenzene		1	mg/L	0.100	0.0950	95	80 - 120	2011-06-22
Xylene		1	mg/L	0.300	0.283	94	80 - 120	2011-06-22

Standard (CCV-1)

QC Batch: 82425 | Date Analyzed: 2011-06-22 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.105	105	80 - 120	2011-06-22
Toluene		1	mg/L	0.100	0.114	114	80 - 120	2011-06-22
Ethylbenzene		1	mg/L	0.100	0.0972	97	80 - 120	2011-06-22
Xylene		1	mg/L	0.300	0.291	97	80 - 120	2011-06-22

Standard (CCV-2)

QC Batch: 82425 | Date Analyzed: 2011-06-22 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2011-06-22
Toluene		1	mg/L	0.100	0.110	110	80 - 120	2011-06-22
Ethylbenzene		1	mg/L	0.100	0.0920	92	80 - 120	2011-06-22
Xylene		1	mg/L	0.300	0.275	92	80 - 120	2011-06-22

Standard (CCV-3)

QC Batch: 82425 | Date Analyzed: 2011-06-22 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.104	104	80 - 120	2011-06-22
Toluene		1	mg/L	0.100	0.114	114	80 - 120	2011-06-22
Ethylbenzene		1	mg/L	0.100	0.0950	95	80 - 120	2011-06-22
Xylene		1	mg/L	0.300	0.287	96	80 - 120	2011-06-22

Standard (CCV-2)

QC Batch: 82512 | Date Analyzed: 2011-06-24 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.106	106	80 - 120	2011-06-24
Toluene		1	mg/L	0.100	0.108	108	80 - 120	2011-06-24
Ethylbenzene		1	mg/L	0.100	0.0901	90	80 - 120	2011-06-24
Xylene		1	mg/L	0.300	0.268	89	80 - 120	2011-06-24

Standard (CCV-3)

QC Batch: 82512 | Date Analyzed: 2011-06-24 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.107	107	80 - 120	2011-06-24
Toluene		1	mg/L	0.100	0.110	110	80 - 120	2011-06-24
Ethylbenzene		1	mg/L	0.100	0.0925	92	80 - 120	2011-06-24
Xylene		1	mg/L	0.300	0.276	92	80 - 120	2011-06-24

Appendix

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-10-TX	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 1106715

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: CRA

Phone #: 432-686-0086

Address: (Street, City, Zip) 2135 S. Loop 250 West Midland, Tx

Fax #: 686-0186

Contact Person: Todd Wells

E-mail: Twells@CRAworld.com

Invoice to: (If different from above) Jason Henry - Plains

SRS # Darr Angell #1

Project #: 074683

Project Name: Darr Angell #1

Project Location (including state): Lea County, NM

Sampler Signature:

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
269708	Dup-2 061511	3		✓				✓						6-15-11	
709	MW-21 061511	3		✓				✓						6-15-11	1615
710	MW-7 061511	3		✓				✓						6-15-11	1630
711	MW-19 061511	3		✓				✓						6-15-11	1645
712	MW-17 061511	3		✓				✓						6-15-11	1700
713	MW-12 061511	3		✓				✓						6-15-11	1715
714	MW-6 061511	3		✓				✓						6-15-11	1730

ANALYSIS REQUEST (Circle or Specify Method No.)	Turn Around Time if different from standard	Hold
MTBE 8021 / 602 / 8260 / 624		
BTEX 8021 / 602 / 8260 / 624		
TPH 418.1 / TX1005 / TX1005 Ext(C35)		
TPH 8015 GRO / DRO / TVHC		
PAH 8270 / 625		
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7		
TCLP Metals Ag As Ba Cd Cr Pb Se Hg		
TCLP Volatiles		
TCLP Semi Volatiles		
TCLP Pesticides		
RCI		
GC/MS Vol. 8260 / 624		
GC/MS Semi. Vol. 8270 / 625		
PCB's 8082 / 608		
Pesticides 8081 / 608		
BOD, TSS, pH		
Moisture Content		
Cl, Fl, S04, NO3, NO2, Alkalinity		
Na, Ca, Mg, K, TDS, EC		

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Todd Wells	CRA	6-17-11	0910		TA	6.17.11	9:10	INST ___ OBS 3.7 °C COR 3.7 °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ___ OBS ___ °C COR ___ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ___ OBS ___ °C COR ___ °C

LAB USE ONLY

Intact (Y) N

Headspace Y (N) NA

Log-In-Review

REMARKS:

All tests Midland

- [ ] Dry Weight Basis Required
- [ ] TRRP Report Required
- [ ] Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier #

ORIGINAL COPY

Summary Report

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX 79703

Report Date: September 20, 2011

Work Order: 11091510

Project Location: Lea Co., NM
Project Name: Darr Angel #1
Project Number: 074683

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
277185	DUP-4 091311	water	2011-09-13	00:00	2011-09-14
277186	MW-21 091311	water	2011-09-13	11:20	2011-09-14
277187	MW-19 091311	water	2011-09-13	11:30	2011-09-14
277188	MW-17 091311	water	2011-09-13	11:40	2011-09-14
277189	MW-12 091311	water	2011-09-13	11:50	2011-09-14
277190	MW-6 091311	water	2011-09-13	12:00	2011-09-14

	BTEX			
Sample - Field Code	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)
277185 - DUP-4 091311	**0.498**	<0.0100	<0.0100	<0.0100
277186 - MW-21 091311	<0.00100	<0.00100	<0.00100	<0.00100
277187 - MW-19 091311	<0.00100	<0.00100	<0.00100	<0.00100
277188 - MW-17 091311	<0.00100	<0.00100	<0.00100	<0.00100
277189 - MW-12 091311	**0.00770**	<0.00100	<0.00100	<0.00100
277190 - MW-6 091311	**0.530**	<0.0100	<0.0100	<0.0100

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 | Lubbock, Texas 79424 | 800•378•1296 | 806•794•1296 | FAX 806•794•1298
200 East Sunset Road, Suite E | El Paso, Texas 79922 | 888•588•3443 | 915•585•3443 | FAX 915•585•4944
5002 Basin Street, Suite A1 | Midland, Texas 79703 | | 432•689•6301 | FAX 432•689•6313
6015 Harris Parkway, Suite 110 | Ft. Worth, Texas 76132 | | 817•201•5260 |
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX, 79703

Report Date: September 20, 2011

Work Order: 11091510

Project Location: Lea Co., NM
Project Name: Darr Angel #1
Project Number: 074683

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
277185	DUP-4 091311	water	2011-09-13	00:00	2011-09-14
277186	MW-21 091311	water	2011-09-13	11:20	2011-09-14
277187	MW-19 091311	water	2011-09-13	11:30	2011-09-14
277188	MW-17 091311	water	2011-09-13	11:40	2011-09-14
277189	MW-12 091311	water	2011-09-13	11:50	2011-09-14
277190	MW-6 091311	water	2011-09-13	12:00	2011-09-14

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Darr Angel #1 were received by TraceAnalysis, Inc. on 2011-09-14 and assigned to work order 11091510. Samples for work order 11091510 were received intact without headspace and at a temperature of 4.0 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	72009	2011-09-18 at 17:00	84788	2011-09-19 at 01:44

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 11091510 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 277185 - DUP-4 091311

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	84788	Date Analyzed:	2011-09-19	Analyzed By:	AG
Prep Batch:	72009	Sample Preparation:	2011-09-18	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.498**	mg/L	10	0.00100
Toluene	U	1	<0.0100	mg/L	10	0.00100
Ethylbenzene	U	1	<0.0100	mg/L	10	0.00100
Xylene	U	1	<0.0100	mg/L	10	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.979	mg/L	10	1.00	98	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.814	mg/L	10	1.00	81	67.5 - 140.8

Sample: 277186 - MW-21 091311

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	84788	Date Analyzed:	2011-09-19	Analyzed By:	AG
Prep Batch:	72009	Sample Preparation:	2011-09-18	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.105	mg/L	1	0.100	105	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0822	mg/L	1	0.100	82	67.5 - 140.8

Sample: 277187 - MW-19 091311

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	84788	Date Analyzed:	2011-09-19	Analyzed By:	AG
Prep Batch:	72009	Sample Preparation:	2011-09-18	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.103	mg/L	1	0.100	103	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0759	mg/L	1	0.100	76	67.5 - 140.8

Sample: 277188 - MW-17 091311

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	84788	Date Analyzed:	2011-09-19	Analyzed By:	AG
Prep Batch:	72009	Sample Preparation:	2011-09-18	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0999	mg/L	1	0.100	100	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0746	mg/L	1	0.100	75	67.5 - 140.8

Sample: 277189 - MW-12 091311

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	84788	Date Analyzed:	2011-09-19	Analyzed By:	AG
Prep Batch:	72009	Sample Preparation:	2011-09-18	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.00770**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.111	mg/L	1	0.100	111	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0883	mg/L	1	0.100	88	67.5 - 140.8

Sample: 277190 - MW-6 091311

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	84788	Date Analyzed:	2011-09-19	Analyzed By:	AG
Prep Batch:	72009	Sample Preparation:	2011-09-18	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.530**	mg/L	10	0.00100
Toluene	U	1	<0.0100	mg/L	10	0.00100
Ethylbenzene	U	1	<0.0100	mg/L	10	0.00100
Xylene	U	1	<0.0100	mg/L	10	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.943	mg/L	10	1.00	94	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.775	mg/L	10	1.00	78	67.5 - 140.8

Method Blanks

Method Blank (1) QC Batch: 84788

QC Batch: 84788 | Date Analyzed: 2011-09-19 | Analyzed By: AG
Prep Batch: 72009 | QC Preparation: 2011-09-18 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0813	mg/L	1	0.100	81	45.9 - 126.4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 84788 | Date Analyzed: 2011-09-19 | Analyzed By: AG
Prep Batch: 72009 | QC Preparation: 2011-09-18 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.108	mg/L	1	0.100	<0.000400	108	76.8 - 120.3
Toluene		1	0.104	mg/L	1	0.100	<0.000300	104	90.9 - 122.2
Ethylbenzene		1	0.0999	mg/L	1	0.100	<0.000300	100	72.7 - 120.2
Xylene		1	0.291	mg/L	1	0.300	<0.000333	97	72.1 - 121.5

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.107	mg/L	1	0.100	<0.000400	107	76.8 - 120.3	7	20
Toluene		1	0.0997	mg/L	1	0.100	<0.000300	100	90.9 - 122.2	7	20
Ethylbenzene		1	0.0967	mg/L	1	0.100	<0.000300	97	72.7 - 120.2	5	20
Xylene		1	0.286	mg/L	1	0.300	<0.000333	95	72.1 - 121.5	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0967	0.0989	mg/L	1	0.100	97	99	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0894	0.0936	mg/L	1	0.100	89	94	56.4 - 127.9

Matrix Spike (MS-1) Spiked Sample: 277190

QC Batch: 84788 | Date Analyzed: 2011-09-19 | Analyzed By: AG
Prep Batch: 72009 | QC Preparation: 2011-09-18 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.71	mg/L	10	1.00	0.5298	118	66.9 - 128.2
Toluene		1	1.08	mg/L	10	1.00	<0.00300	108	81.6 - 122.9
Ethylbenzene		1	1.06	mg/L	10	1.00	<0.00300	106	62.7 - 117.9
Xylene		1	3.04	mg/L	10	3.00	<0.00333	101	62.9 - 118.2

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.75	mg/L	10	1.00	0.5298	122	66.9 - 128.2	2	20
Toluene		1	1.09	mg/L	10	1.00	<0.00300	109	81.6 - 122.9	1	20
Ethylbenzene		1	1.08	mg/L	10	1.00	<0.00300	108	62.7 - 117.9	2	20
Xylene		1	3.13	mg/L	10	3.00	<0.00333	104	62.9 - 118.2	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.00	1.02	mg/L	10	1	100	102	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	0.944	0.968	mg/L	10	1	94	97	52.2 - 135.8

Calibration Standards

Standard (CCV-2)

QC Batch: 84788 | Date Analyzed: 2011-09-19 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.112	112	80 - 120	2011-09-19
Toluene		1	mg/L	0.100	0.101	101	80 - 120	2011-09-19
Ethylbenzene		1	mg/L	0.100	0.0963	96	80 - 120	2011-09-19
Xylene		1	mg/L	0.300	0.281	94	80 - 120	2011-09-19

Standard (CCV-3)

QC Batch: 84788 | Date Analyzed: 2011-09-19 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.118	118	80 - 120	2011-09-19
Toluene		1	mg/L	0.100	0.110	110	80 - 120	2011-09-19
Ethylbenzene		1	mg/L	0.100	0.106	106	80 - 120	2011-09-19
Xylene		1	mg/L	0.300	0.314	105	80 - 120	2011-09-19

Appendix

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-10-TX	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 11091510

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: CRA

Phone #: (432) 686-0086

Address: (Street, City, Zip) 2135 S Loop 250 W

Fax #: (432) 686-0186

Contact Person: Todd Wells

E-mail:

Invoice to: (If different from above) Jason Henry w/ plains All American SKS# Darr Angell #1

Project #: 07468

Project Name: Darr Angell #1

Project Location (including state): Darr Angell #1

Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE		SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021B / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, Fl, SO4, NO3, NO2, Alkalinity	Na, Ca, Mg, K, TDS, EC					Turn Around Time if different from standard	Hold
27185	Dup-4 091311	3	VOA	X					X							9-13-11			X																					
186	MW-21 091311	3	VOA	X					X							9-13-11	1120		X																					
187	MW-19 091311	3	VOA	X					X							9-13-11	1130		X																					
188	MW-17 091311	3	VOA	X					X							9-13-11	1140		X																					
189	MW2-091311	3	VOA	X					X							9-13-11	1150		X																					
190	MW-6 091311	3	VOA	X					X							9-13-11	1200		X																					

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	CRA	9-14-11	940	Ken Hatton	CRA	9/14/11	940	INST ___ OBS ___ °C COR ___ °C
Ken Hatton	CRA	9/14/11	1406		CRA	9-14-11	1406	INST ___ OBS ___ °C COR ___ °C
	CRA	9-14-11	1428		CRA	9-14-11	14:30	INST ___ OBS 4.0 °C COR 4.0 °C

LAB USE ONLY

Intact Y / N

Headspace Y / N / NA

Log-In-Review

REMARKS:

all tests-Midland

- Dry Weight Basis Required
- TRRP Report Required
- Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier #

SEP 21 2011

ORIGINAL COPY

Summary Report

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX 79703

Report Date: December 14, 2011

Work Order: 11120506

Project Location: Lea Co., NM
Project Name: Darr Angel #1
Project Number: 074683

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
283676	MW 4 120111	water	2011-12-01	10:40	2011-12-02
283677	MW 6 120111	water	2011-12-01	12:55	2011-12-02
283678	MW 7 120111	water	2011-12-01	10:55	2011-12-02
283679	MW 15 120111	water	2011-12-01	11:30	2011-12-02
283680	MW 20 120111	water	2011-12-01	12:10	2011-12-02
283681	MW 21 120111	water	2011-12-01	12:25	2011-12-02
283697	MW 12 120111	water	2011-12-01	12:40	2011-12-02

	BTEX				MTBE
Sample - Field Code	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	MTBE (mg/L)
283676 - MW 4 120111	<0.00100	<0.00100	<0.00100	<0.00100	
283677 - MW 6 120111	**0.206**	**0.00110**	**0.0356**	**0.0430**	
283678 - MW 7 120111	<0.00100	<0.00100	<0.00100	<0.00100	
283679 - MW 15 120111	<0.00100	<0.00100	<0.00100	<0.00100	
283680 - MW 20 120111	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	
283681 - MW 21 120111	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	
283697 - MW 12 120111	**0.0763** Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	

Sample: 283677 - MW 6 120111

Param	Flag	Result	Units	RL
Naphthalene		**0.00345**	mg/L	0.0002
2-Methylnaphthalene		**0.00328**	mg/L	0.0002
1-Methylnaphthalene		**0.00676**	mg/L	0.0002
Acenaphthylene		<0.000186	mg/L	0.0002
Acenaphthene		<0.000186	mg/L	0.0002
Dibenzofuran		**0.00152**	mg/L	0.0002

continued ...

sample 283677 continued ...

Param	Flag	Result	Units	RL
Fluorene		**0.000962**	mg/L	0.0002
Anthracene	Qs	<0.000186	mg/L	0.0002
Phenanthrene	Qs	**0.00131**	mg/L	0.0002
Fluoranthene		<0.000186	mg/L	0.0002
Pyrene		<0.000186	mg/L	0.0002
Benzo(a)anthracene	Qs	<0.000186	mg/L	0.0002
Chrysene		<0.000186	mg/L	0.0002
Benzo(b)fluoranthene		<0.000186	mg/L	0.0002
Benzo(k)fluoranthene		<0.000186	mg/L	0.0002
Benzo(a)pyrene		<0.000186	mg/L	0.0002
Indeno(1,2,3-cd)pyrene		<0.000186	mg/L	0.0002
Dibenzo(a,h)anthracene		<0.000186	mg/L	0.0002
Benzo(g,h,i)perylene		<0.000186	mg/L	0.0002

Sample: 283697 - MW 12 120111

Param	Flag	Result	Units	RL
Naphthalene		<0.000183	mg/L	0.0002
2-Methylnaphthalene		<0.000183	mg/L	0.0002
1-Methylnaphthalene		**0.000302**	mg/L	0.0002
Acenaphthylene		<0.000183	mg/L	0.0002
Acenaphthene		<0.000183	mg/L	0.0002
Dibenzofuran		**0.000228**	mg/L	0.0002
Fluorene		<0.000183	mg/L	0.0002
Anthracene	Qs	<0.000183	mg/L	0.0002
Phenanthrene	Qs	<0.000183	mg/L	0.0002
Fluoranthene		<0.000183	mg/L	0.0002
Pyrene		<0.000183	mg/L	0.0002
Benzo(a)anthracene	Qs	<0.000183	mg/L	0.0002
Chrysene		<0.000183	mg/L	0.0002
Benzo(b)fluoranthene		<0.000183	mg/L	0.0002
Benzo(k)fluoranthene		<0.000183	mg/L	0.0002
Benzo(a)pyrene		<0.000183	mg/L	0.0002
Indeno(1,2,3-cd)pyrene		<0.000183	mg/L	0.0002
Dibenzo(a,h)anthracene		<0.000183	mg/L	0.0002
Benzo(g,h,i)perylene		<0.000183	mg/L	0.0002

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 | Lubbock, Texas 79424 | 800•378•1296 | 806•794•1296 | FAX 806•794•1298
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5002 Basin Street, Suite A1 | Midland, Texas 79703 | | 432•689•6301 | FAX 432•689•6313
6015 Harris Parkway, Suite 110 | Ft. Worth, Texas 76132 | | 817•201•5260 |
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX, 79703

Report Date: December 14, 2011

Work Order: 11120506

Project Location: Lea Co., NM
Project Name: Darr Angel #1
Project Number: 074683

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
283676	MW 4 120111	water	2011-12-01	10:40	2011-12-02
283677	MW 6 120111	water	2011-12-01	12:55	2011-12-02
283678	MW 7 120111	water	2011-12-01	10:55	2011-12-02
283679	MW 15 120111	water	2011-12-01	11:30	2011-12-02
283680	MW 20 120111	water	2011-12-01	12:10	2011-12-02
283681	MW 21 120111	water	2011-12-01	12:25	2011-12-02
283697	MW 12 120111	water	2011-12-01	12:40	2011-12-02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Michael Abel

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Darr Angel #1 were received by TraceAnalysis, Inc. on 2011-12-02 and assigned to work order 11120506. Samples for work order 11120506 were received intact without headspace and at a temperature of 1.0 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	73835	2011-12-06 at 13:11	86958	2011-12-06 at 13:11
BTEX	S 8021B	73836	2011-12-06 at 13:11	86959	2011-12-06 at 13:11
PAH	S 8270D	73942	2011-12-07 at 15:00	87077	2011-12-12 at 11:05

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 11120506 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 283676 - MW 4 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86958	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73835	Sample Preparation:	2011-12-06	Prepared By:	ZLM

Parameter		Flag		Cert	RL Result	Units	Dilution	RL
Benzene	U		U	1	<0.00100	mg/L	1	0.00100
Toluene	U		U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U		U	1	<0.00100	mg/L	1	0.00100
Xylene	U		U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0970	mg/L	1	0.100	97	70 - 130
4-Bromofluorobenzene (4-BFB)			0.100	mg/L	1	0.100	100	70 - 130

Sample: 283677 - MW 6 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86958	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73835	Sample Preparation:	2011-12-06	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.206**	mg/L	1	0.00100
Toluene		1	**0.00110**	mg/L	1	0.00100
Ethylbenzene		1	**0.0356**	mg/L	1	0.00100
Xylene		1	**0.0430**	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0873	mg/L	1	0.100	87	70 - 130
4-Bromofluorobenzene (4-BFB)			0.118	mg/L	1	0.100	118	70 - 130

Sample: 283677 - MW 6 120111

Laboratory:	Lubbock				
Analysis:	PAH	Analytical Method:	S 8270D	Prep Method:	S 3510C
QC Batch:	87077	Date Analyzed:	2011-12-12	Analyzed By:	MN
Prep Batch:	73942	Sample Preparation:	2011-12-07	Prepared By:	MN

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Naphthalene			1	**0.00345**	mg/L	0.93	0.000200
2-Methylnaphthalene			1	**0.00328**	mg/L	0.93	0.000200
1-Methylnaphthalene				**0.00676**	mg/L	0.93	0.000200
Acenaphthylene	U	U	1	<0.000186	mg/L	0.93	0.000200
Acenaphthene	U	U	1	<0.000186	mg/L	0.93	0.000200
Dibenzofuran			1	**0.00152**	mg/L	0.93	0.000200
Fluorene			1	**0.000962**	mg/L	0.93	0.000200
Anthracene	Qs,U	Qs,U	1	<0.000186	mg/L	0.93	0.000200
Phenanthrene	Qs	Qs		**0.00131**	mg/L	0.93	0.000200
Fluoranthene	U	U		<0.000186	mg/L	0.93	0.000200
Pyrene	U	U	1	<0.000186	mg/L	0.93	0.000200
Benzo(a)anthracene	Qs,U	Qs,U		<0.000186	mg/L	0.93	0.000200
Chrysene	U	U	1	<0.000186	mg/L	0.93	0.000200
Benzo(b)fluoranthene	U	U		<0.000186	mg/L	0.93	0.000200
Benzo(k)fluoranthene	U	U	1	<0.000186	mg/L	0.93	0.000200
Benzo(a)pyrene	U	U	1	<0.000186	mg/L	0.93	0.000200
Indeno(1,2,3-cd)pyrene	U	U	1	<0.000186	mg/L	0.93	0.000200
Dibenzo(a,h)anthracene	U	U	1	<0.000186	mg/L	0.93	0.000200
Benzo(g,h,i)perylene	U	U		<0.000186	mg/L	0.93	0.000200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0547	mg/L	0.93	0.0800	68	10 - 117
2-Fluorobiphenyl			0.0526	mg/L	0.93	0.0800	66	10 - 99
Terphenyl-d14			0.0583	mg/L	0.93	0.0800	73	22.6 - 115

Sample: 283678 - MW 7 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86958	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73835	Sample Preparation:	2011-12-06	Prepared By:	ZLM

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	U	1	<0.00100	mg/L	1	0.00100

continued ...

sample 283678 continued ...

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Toluene	U	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0982	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.102	mg/L	1	0.100	102	70 - 130

Sample: 283679 - MW 15 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86958	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73835	Sample Preparation:	2011-12-06	Prepared By:	ZLM

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.106	mg/L	1	0.100	106	70 - 130
4-Bromofluorobenzene (4-BFB)			0.110	mg/L	1	0.100	110	70 - 130

Sample: 283680 - MW 20 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

continued ...

sample 283680 continued ...

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100
Toluene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100
Xylene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0968	mg/L	1	0.100	97	70 - 130
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	70 - 130

Sample: 283681 - MW 21 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100
Toluene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100
Xylene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0976	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	70 - 130

Sample: 283697 - MW 12 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qs	Qs	1	**0.0763**	mg/L	1	0.00100
Toluene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100
Xylene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0860	mg/L	1	0.100	86	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0966	mg/L	1	0.100	97	70 - 130

Sample: 283697 - MW 12 120111

Laboratory:	Lubbock				
Analysis:	PAH	Analytical Method:	S 8270D	Prep Method:	S 3510C
QC Batch:	87077	Date Analyzed:	2011-12-12	Analyzed By:	MN
Prep Batch:	73942	Sample Preparation:	2011-12-07	Prepared By:	MN

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Naphthalene	U	U	1	<0.000183	mg/L	0.917	0.000200
2-Methylnaphthalene	U	U	1	<0.000183	mg/L	0.917	0.000200
1-Methylnaphthalene				**0.000302**	mg/L	0.917	0.000200
Acenaphthylene	U	U	1	<0.000183	mg/L	0.917	0.000200
Acenaphthene	U	U	1	<0.000183	mg/L	0.917	0.000200
Dibenzofuran			1	**0.000228**	mg/L	0.917	0.000200
Fluorene	U	U	1	<0.000183	mg/L	0.917	0.000200
Anthracene	Qs,U	Qs,U	1	<0.000183	mg/L	0.917	0.000200
Phenanthrene	Qs,U	Qs,U		<0.000183	mg/L	0.917	0.000200
Fluoranthene	U	U		<0.000183	mg/L	0.917	0.000200
Pyrene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(a)anthracene	Qs,U	Qs,U		<0.000183	mg/L	0.917	0.000200
Chrysene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(b)fluoranthene	U	U		<0.000183	mg/L	0.917	0.000200
Benzo(k)fluoranthene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(a)pyrene	U	U	1	<0.000183	mg/L	0.917	0.000200
Indeno(1,2,3-cd)pyrene	U	U	1	<0.000183	mg/L	0.917	0.000200
Dibenzo(a,h)anthracene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(g,h,i)perylene	U	U		<0.000183	mg/L	0.917	0.000200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0755	mg/L	0.917	0.0800	94	10 - 117
2-Fluorobiphenyl			0.0716	mg/L	0.917	0.0800	90	10 - 99
Terphenyl-d14			0.0789	mg/L	0.917	0.0800	99	22.6 - 115

Method Blanks

Method Blank (1) QC Batch: 86958

QC Batch: 86958 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM
Prep Batch: 73835 | QC Preparation: 2011-12-06 | Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000765	mg/L	0.001
Toluene		1	<0.000719	mg/L	0.001
Ethylbenzene		1	<0.000860	mg/L	0.001
Xylene		1	<0.000942	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0995	mg/L	1	0.100	100	70 - 130
4-Bromofluorobenzene (4-BFB)			0.103	mg/L	1	0.100	103	70 - 130

Method Blank (1) QC Batch: 86959

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM
Prep Batch: 73836 | QC Preparation: 2011-12-06 | Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000765	mg/L	0.001
Toluene		1	<0.000719	mg/L	0.001
Ethylbenzene		1	<0.000860	mg/L	0.001
Xylene		1	<0.000942	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0948	mg/L	1	0.100	95	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0981	mg/L	1	0.100	98	70 - 130

Method Blank (1) QC Batch: 87077

QC Batch: 87077 | Date Analyzed: 2011-12-12 | Analyzed By: MN
Prep Batch: 73942 | QC Preparation: 2011-12-07 | Prepared By: MN

Parameter	Flag	Cert	MDL Result	Units	RL
Naphthalene		1	<0.0000904	mg/L	0.0002
2-Methylnaphthalene		1	<0.000184	mg/L	0.0002
1-Methylnaphthalene			<0.000120	mg/L	0.0002
Acenaphthylene		1	<0.000101	mg/L	0.0002
Acenaphthene		1	<0.000122	mg/L	0.0002
Dibenzofuran		1	<0.000119	mg/L	0.0002
Fluorene		1	<0.000198	mg/L	0.0002
Anthracene		1	<0.000190	mg/L	0.0002
Phenanthrene			<0.000190	mg/L	0.0002
Fluoranthene			<0.000122	mg/L	0.0002
Pyrene		1	<0.000142	mg/L	0.0002
Benzo(a)anthracene			<0.000138	mg/L	0.0002
Chrysene		1	<0.000155	mg/L	0.0002
Benzo(b)fluoranthene			<0.000179	mg/L	0.0002
Benzo(k)fluoranthene		1	<0.000185	mg/L	0.0002
Benzo(a)pyrene		1	<0.000169	mg/L	0.0002
Indeno(1,2,3-cd)pyrene		1	0.000511	mg/L	0.0002
Dibenzo(a,h)anthracene		1	0.000474	mg/L	0.0002
Benzo(g,h,i)perylene			0.000653	mg/L	0.0002

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0549	mg/L	1	0.0800	69	10 - 117
2-Fluorobiphenyl			0.0432	mg/L	1	0.0800	54	10 - 99
Terphenyl-d14			0.0530	mg/L	1	0.0800	66	22.6 - 115

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 86958 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM
Prep Batch: 73835 | QC Preparation: 2011-12-06 | Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0987	mg/L	1	0.100	<0.000765	99	70 - 130
Toluene		1	0.0960	mg/L	1	0.100	<0.000719	96	70 - 130
Ethylbenzene		1	0.0957	mg/L	1	0.100	<0.000860	96	70 - 130
Xylene		1	0.286	mg/L	1	0.300	<0.000942	95	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0997	mg/L	1	0.100	<0.000765	100	70 - 130	1	20
Toluene		1	0.0973	mg/L	1	0.100	<0.000719	97	70 - 130	1	20
Ethylbenzene		1	0.0971	mg/L	1	0.100	<0.000860	97	70 - 130	1	20
Xylene		1	0.291	mg/L	1	0.300	<0.000942	97	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0946	0.0934	mg/L	1	0.100	95	93	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0945	0.0943	mg/L	1	0.100	94	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM
Prep Batch: 73836 | QC Preparation: 2011-12-06 | Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0975	mg/L	1	0.100	<0.000765	98	70 - 130
Toluene		1	0.0945	mg/L	1	0.100	<0.000719	94	70 - 130
Ethylbenzene		1	0.0939	mg/L	1	0.100	<0.000860	94	70 - 130
Xylene		1	0.280	mg/L	1	0.300	<0.000942	93	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0981	mg/L	1	0.100	<0.000765	98	70 - 130	1	20
Toluene		1	0.0954	mg/L	1	0.100	<0.000719	95	70 - 130	1	20
Ethylbenzene		1	0.0955	mg/L	1	0.100	<0.000860	96	70 - 130	2	20
Xylene		1	0.285	mg/L	1	0.300	<0.000942	95	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0971	0.0981	mg/L	1	0.100	97	98	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0961	0.0988	mg/L	1	0.100	96	99	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 87077 | Date Analyzed: 2011-12-12 | Analyzed By: MN
Prep Batch: 73942 | QC Preparation: 2011-12-07 | Prepared By: MN

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene		1	0.0411	mg/L	1	0.0800	<0.0000904	51	10 - 89.9
2-Methylnaphthalene		1	0.0462	mg/L	1	0.0800	<0.000184	58	13.8 - 98.4
1-Methylnaphthalene			0.0529	mg/L	1	0.0800	<0.000120	66	13.1 - 103
Acenaphthylene		1	0.0576	mg/L	1	0.0800	<0.000101	72	20 - 104
Acenaphthene		1	0.0561	mg/L	1	0.0800	<0.000122	70	21.6 - 94.6
Dibenzofuran		1	0.0425	mg/L	1	0.0800	<0.000119	53	22.9 - 74.9
Fluorene		1	0.0646	mg/L	1	0.0800	<0.000198	81	30.8 - 109
Anthracene		1	0.0759	mg/L	1	0.0800	<0.000190	95	37.6 - 96.4
Phenanthrene			0.0793	mg/L	1	0.0800	<0.000190	99	42.4 - 99.8
Fluoranthene			0.0806	mg/L	1	0.0800	<0.000122	101	48 - 118
Pyrene		1	0.0752	mg/L	1	0.0800	<0.000142	94	45.3 - 109
Benzo(a)anthracene			0.0866	mg/L	1	0.0800	<0.000138	108	48 - 113
Chrysene		1	0.0692	mg/L	1	0.0800	<0.000155	86	35.2 - 175
Benzo(b)fluoranthene			0.0658	mg/L	1	0.0800	<0.000179	82	16.6 - 106
Benzo(k)fluoranthene		1	0.0673	mg/L	1	0.0800	<0.000185	84	36.8 - 99.4
Benzo(a)pyrene		1	0.0698	mg/L	1	0.0800	<0.000169	87	32.3 - 99.7
Indeno(1,2,3-cd)pyrene		1	0.0681	mg/L	1	0.0800	0.000511	84	34.1 - 106
Dibenzo(a,h)anthracene		1	0.0584	mg/L	1	0.0800	0.000474	72	47.1 - 103
Benzo(g,h,i)perylene			0.0719	mg/L	1	0.0800	0.000653	89	21.9 - 112

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Naphthalene		1	0.0468	mg/L	1	0.0800	<0.0000904	58	10 - 89.9	13	20

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
2-Methylnaphthalene		1	0.0526	mg/L	1	0.0800	<0.000184	66	13.8 - 98.4	13	20
1-Methylnaphthalene			0.0600	mg/L	1	0.0800	<0.000120	75	13.1 - 103	13	20
Acenaphthylene		1	0.0670	mg/L	1	0.0800	<0.000101	84	20 - 104	15	20
Acenaphthene		1	0.0651	mg/L	1	0.0800	<0.000122	81	21.6 - 94.6	15	20
Dibenzofuran		1	0.0483	mg/L	1	0.0800	<0.000119	60	22.9 - 74.9	13	20
Fluorene		1	0.0708	mg/L	1	0.0800	<0.000198	88	30.8 - 109	9	20
Anthracene	Qs	Qs 1	0.0863	mg/L	1	0.0800	<0.000190	108	37.6 - 96.4	13	20
Phenanthrene	Qs	Qs	0.0904	mg/L	1	0.0800	<0.000190	113	42.4 - 99.8	13	20
Fluoranthene			0.0944	mg/L	1	0.0800	<0.000122	118	48 - 118	16	20
Pyrene		1	0.0836	mg/L	1	0.0800	<0.000142	104	45.3 - 109	11	20
Benzo(a)anthracene	Qs	Qs	0.0985	mg/L	1	0.0800	<0.000138	123	48 - 113	13	20
Chrysene		1	0.0792	mg/L	1	0.0800	<0.000155	99	35.2 - 175	14	20
Benzo(b)fluoranthene			0.0760	mg/L	1	0.0800	<0.000179	95	16.6 - 106	14	20
Benzo(k)fluoranthene		1	0.0765	mg/L	1	0.0800	<0.000185	96	36.8 - 99.4	13	20
Benzo(a)pyrene		1	0.0786	mg/L	1	0.0800	<0.000169	98	32.3 - 99.7	12	20
Indeno(1,2,3-cd)pyrene		1	0.0755	mg/L	1	0.0800	0.000511	94	34.1 - 106	10	20
Dibenzo(a,h)anthracene		1	0.0649	mg/L	1	0.0800	0.000474	80	47.1 - 103	10	20
Benzo(g,h,i)perylene			0.0796	mg/L	1	0.0800	0.000653	99	21.9 - 112	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Nitrobenzene-d5	0.0517	0.0579	mg/L	1	0.0800	65	72	10 - 117
2-Fluorobiphenyl	0.0488	0.0584	mg/L	1	0.0800	61	73	10 - 99
Terphenyl-d14	0.0804	0.0896	mg/L	1	0.0800	100	112	22.6 - 115

Matrix Spike (MS-1) Spiked Sample: 283664

QC Batch: 86958 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM
Prep Batch: 73835 | QC Preparation: 2011-12-06 | Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0987	mg/L	1	0.100	<0.000765	99	70 - 130
Toluene		1	0.0949	mg/L	1	0.100	<0.000719	95	70 - 130
Ethylbenzene		1	0.0951	mg/L	1	0.100	<0.000860	95	70 - 130
Xylene		1	0.282	mg/L	1	0.300	<0.000942	94	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.103	mg/L	1	0.100	<0.000765	103	70 - 130	4	20
Toluene		1	0.0996	mg/L	1	0.100	<0.000719	100	70 - 130	5	20
Ethylbenzene		1	0.0992	mg/L	1	0.100	<0.000860	99	70 - 130	4	20
Xylene		1	0.296	mg/L	1	0.300	<0.000942	99	70 - 130	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.105	0.102	mg/L	1	0.1	105	102	70 - 130
4-Bromofluorobenzene (4-BFB)	0.105	0.102	mg/L	1	0.1	105	102	70 - 130

Matrix Spike (MS-1) Spiked Sample: 283681

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM
Prep Batch: 73836 | QC Preparation: 2011-12-06 | Prepared By: ZLM

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs	1	0.0561	mg/L	1	0.100	<0.000765	56	70 - 130
Toluene	Qs	Qs	1	0.0523	mg/L	1	0.100	<0.000719	52	70 - 130
Ethylbenzene	Qs	Qs	1	0.0519	mg/L	1	0.100	<0.000860	52	70 - 130
Xylene	Qs	Qs	1	0.155	mg/L	1	0.300	<0.000942	52	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	Qs	Qs	1	0.0639	mg/L	1	0.100	<0.000765	64	70 - 130	13	20
Toluene	Qs	Qs	1	0.0601	mg/L	1	0.100	<0.000719	60	70 - 130	14	20
Ethylbenzene	Qs	Qs	1	0.0587	mg/L	1	0.100	<0.000860	59	70 - 130	12	20
Xylene	Qs	Qs	1	0.175	mg/L	1	0.300	<0.000942	58	70 - 130	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.102	0.0929	mg/L	1	0.1	102	93	70 - 130
4-Bromofluorobenzene (4-BFB)	0.101	0.0942	mg/L	1	0.1	101	94	70 - 130

Calibration Standards

Standard (CCV-2)

QC Batch: 86958 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0951	95	80 - 120	2011-12-06
Toluene		1	mg/L	0.100	0.0921	92	80 - 120	2011-12-06
Ethylbenzene		1	mg/L	0.100	0.0919	92	80 - 120	2011-12-06
Xylene		1	mg/L	0.300	0.272	90	80 - 120	2011-12-06

Standard (CCV-3)

QC Batch: 86958 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2011-12-06
Toluene		1	mg/L	0.100	0.0970	97	80 - 120	2011-12-06
Ethylbenzene		1	mg/L	0.100	0.0962	96	80 - 120	2011-12-06
Xylene		1	mg/L	0.300	0.287	96	80 - 120	2011-12-06

Standard (CCV-1)

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0998	100	80 - 120	2011-12-06
Toluene		1	mg/L	0.100	0.0963	96	80 - 120	2011-12-06
Ethylbenzene		1	mg/L	0.100	0.0956	96	80 - 120	2011-12-06
Xylene		1	mg/L	0.300	0.286	95	80 - 120	2011-12-06

Standard (CCV-2)

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.100	100	80 - 120	2011-12-06
Toluene		1	mg/L	0.100	0.0965	96	80 - 120	2011-12-06
Ethylbenzene		1	mg/L	0.100	0.0959	96	80 - 120	2011-12-06
Xylene		1	mg/L	0.300	0.286	95	80 - 120	2011-12-06

Standard (CCV-3)

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0988	99	80 - 120	2011-12-06
Toluene		1	mg/L	0.100	0.0965	96	80 - 120	2011-12-06
Ethylbenzene		1	mg/L	0.100	0.0980	98	80 - 120	2011-12-06
Xylene		1	mg/L	0.300	0.289	96	80 - 120	2011-12-06

Standard (CCV-1)

QC Batch: 87077 | Date Analyzed: 2011-12-12 | Analyzed By: MN

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		1	mg/L	60.0	50.4	84	80 - 120	2011-12-12
2-Methylnaphthalene		1	mg/L	60.0	51.3	86	80 - 120	2011-12-12
1-Methylnaphthalene			mg/L	60.0	58.7	98	80 - 120	2011-12-12
Acenaphthylene		1	mg/L	60.0	51.0	85	80 - 120	2011-12-12
Acenaphthene		1	mg/L	60.0	50.4	84	80 - 120	2011-12-12
Dibenzofuran		1	mg/L	60.0	50.3	84	80 - 120	2011-12-12
Fluorene		1	mg/L	60.0	49.5	82	80 - 120	2011-12-12
Anthracene		1	mg/L	60.0	59.7	100	80 - 120	2011-12-12
Phenanthrene			mg/L	60.0	59.6	99	80 - 120	2011-12-12
Fluoranthene			mg/L	60.0	60.7	101	80 - 120	2011-12-12
Pyrene		1	mg/L	60.0	55.1	92	80 - 120	2011-12-12
Benzo(a)anthracene			mg/L	60.0	60.6	101	80 - 120	2011-12-12

continued ...

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chrysene		1	mg/L	60.0	52.8	88	80 - 120	2011-12-12
Benzo(b)fluoranthene			mg/L	60.0	59.2	99	80 - 120	2011-12-12
Benzo(k)fluoranthene		1	mg/L	60.0	49.2	82	80 - 120	2011-12-12
Benzo(a)pyrene		1	mg/L	60.0	52.9	88	80 - 120	2011-12-12
Indeno(1,2,3-cd)pyrene		1	mg/L	60.0	52.8	88	80 - 120	2011-12-12
Dibenzo(a,h)anthracene		1	mg/L	60.0	54.2	90	80 - 120	2011-12-12
Benzo(g,h,i)perylene			mg/L	60.0	51.1	85	80 - 120	2011-12-12

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5			58.1	mg/L	1	60.0	97	-
2-Fluorobiphenyl			53.6	mg/L	1	60.0	89	-
Terphenyl-d14			58.6	mg/L	1	60.0	98	-

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-11-5	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 111205C6

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: CRA	**Phone #:** 432-686-0086
Address: (Street, City, Zip) 2135 S Loop 250 west, Midland 79703	**Fax #:** 432-686-0186
Contact Person: Todd Wells	**E-mail:** TWells@craworld.com
Invoice to: (If different from above) Jason Henry	
Project #: 074683	**Project Name:** Oasis Angell #1
Project Location (including state): Lovington, NM	**Sampler Signature:**

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, Fl, S04, NO3, NO2, Alkalinity	Na, Ca, Mg, K, TDS, EC			Turn Around Time if different from standard	Hold
283676	MW4 120111	3	120 ml	X				X						12-1	1040		X																						
677	MW6 120111	4	1 L	X				X						12-1	1255		X			X																				
678	MW7 120111	3	120 ml	X				X						12-1	1055		X																							
679	MW15 120111	3	120 ml	X				X						12-1	1130		X																							
680	MW20 120111	3	120 ml	X				X						12-1	1210		X																							
681	MW21 120111	3	120 ml	X				X						12-1	1225		X																							
283697	MW12- 120111	4		X				X						12-1	12:40		X			X																				

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	CRA	12-2-11	1538					INST ___ °C OBS ___ °C COR ___ °C
								INST ___ °C OBS ___ °C COR ___ °C
				Brenda Ward	Traces Lubbock	12/2/11	15:38	INST I R °C OBS 0.9 °C COR 1.0 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review MF

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Caraplo

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