Griswold, Jim, EMNRD

From: Joshua.Morrissette@bjservices.com
Sent: Thursday, February 04, 2010 2:11 PM
To: Griswold, Jim, EMNRD
Subject: Re: Former FracMaster Facility in Hobbs (1RP-2)
Attachments: Hobbs Fracmaster Boring Logs.PDF

Here you go Jim. Sorry about that.

Josh

BJ Services Company, USA
J. Morrissette
HSE Specialist
11211 FM 2920
Tomball, TX 77375
Office: 281.357.2573
Mobile: 713.705.4875
Fax: 281.357.2585

"Griswold, Jim, EMNRD" <Jim.Griswold@state.nm.us>

02/01/2010 11:36 AM

To <joshua.morrissette@bjservices.com>
cc
Subject Former FracMaster Facility in Hobbs (1RP-2)

Josh,

I received a letter from Brown & Caldwell dated 1/15/10 providing responses to my questions regarding the May 2009 field work (report dated 8/24/09) at the Hobbs facility. The letter refers to corrected boring logs as attachments. These corrected logs were not included in the FedEx package I received. Could you have Richard Rexroad please forward them to me. Thank you.

Jim Griswold
Senior Hydrologist
Environmental Bureau
ENMRD/Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

direct: 505.476.3465
email: jim.griswold@state.nm.us

BROWN AND CALDWELL
1415 Louisiana St.
Suite 2500
Houston, Texas 77002

Monitoring Well: **MW-4**

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: **128125** Sheet 1 of 2

Project Location: **Hobbs, NM**		Logged By: **R. Banda**	Checked By: **R.Rexroad**
Drilling Contractor: **TSS**		Date Started: **5/1/09**	Date Finished: **5/1/09**
Drilling Equipment: **B-59**	Driller: **C. Perryman**	Total Boring Depth: (feet) **61.0**	Depth to Static Water: (feet)
Drilling Method: **Hollow Stem Auger**	Borehole Diameter: **8"**	TOC Elevation:	Ground Elevation: **102.21**
Sampling Method: **Split Spoon**		Diameter and Type of Well Casing: **2 Schedule 40 PVC**	
Comments:		Slot Size: **0.010**	Filter Material: **20/40**
		Development Method: **Submersible Pump**	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
0				Gravel, Sand, Silt, etc.	0				3X3 Above-grade completion.
2									
4									
6		SP		SAND (SP); Tan; dry; 1/4" gravels	0		2		
8									
10					0				
12									
14									
16				Pinkish tan; very fine to medium grained, <1/4" lithified sandstone nodules, few gravel	0		2		
18									
20				Pinkish brown; moist	0				Bentonite Seal
22									
24									
26					0		2		
28									

This log should not be used separately from the original report.

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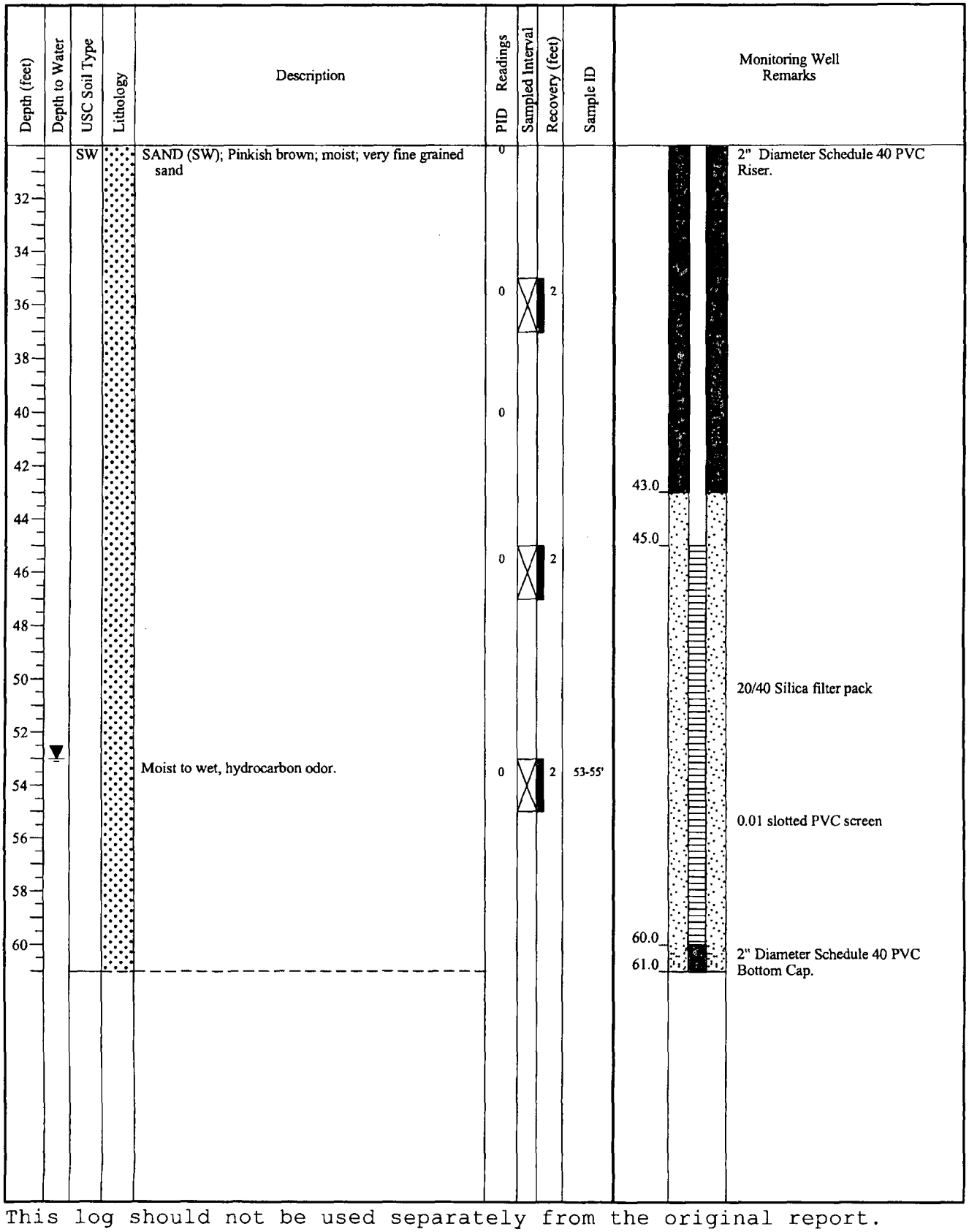
Houston, Texas 77002

Monitoring Well: MW-4

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: 128125 Sheet 2 of 2



This log should not be used separately from the original report.

BROWN AND CALDWELL
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Suite 2500
Houston, Texas 77002

Monitoring Well: **MW-5**

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: **128125** Sheet **1** of **2**

Project Location: **Hobbs, NM**		Logged By: **R. Rexroad**	Checked By: **L. Teague**
Drilling Contractor: **Geoprojects International**		Date Started: **4/7/09**	Date Finished: **4/7/09**
Drilling Equipment: **B-59**	Driller: **C. Perryman**	Total Boring Depth: (feet) **61.0**	Depth to Static Water: (feet)
Drilling Method: **Hollow Stem Auger**	Borehole Diameter: **8"**	TOC Elevation:	Ground Elevation: **102.41**
Sampling Method: **Split Spoon**		Diameter and Type of Well Casing: **2 Schedule 40**	
Comments:		Slot Size: **0.010**	Filter Material: **20/40**
		Development Method: **Submersible Pump**	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
0		SM		SILTY SAND (SM); Light brown; dry; very fine to fine grained sand	0				3X3 Above-grade completion.
2									
4									
6					0		.5		
8									
10		SP		SAND (SP); Light tan; very fine to fine grained sand; poorly sorted	0		.25		
12									
14									
16				Sand is mostly quartz with <5% feldspar(pink, fine to medium grained)	0		1		
18									
20				Pinkish mostly fine to (40%) medium quartz sand; scattered (<1%) dark materials; slightly moist; 1-2% feldspars	0		.5		Bentonite Seal
22									
24									
26					0		.75		
28				SANDSTONE					
		SP		SAND (SP); very fine to fine grained sand					

This log should not be used separately from the original report.

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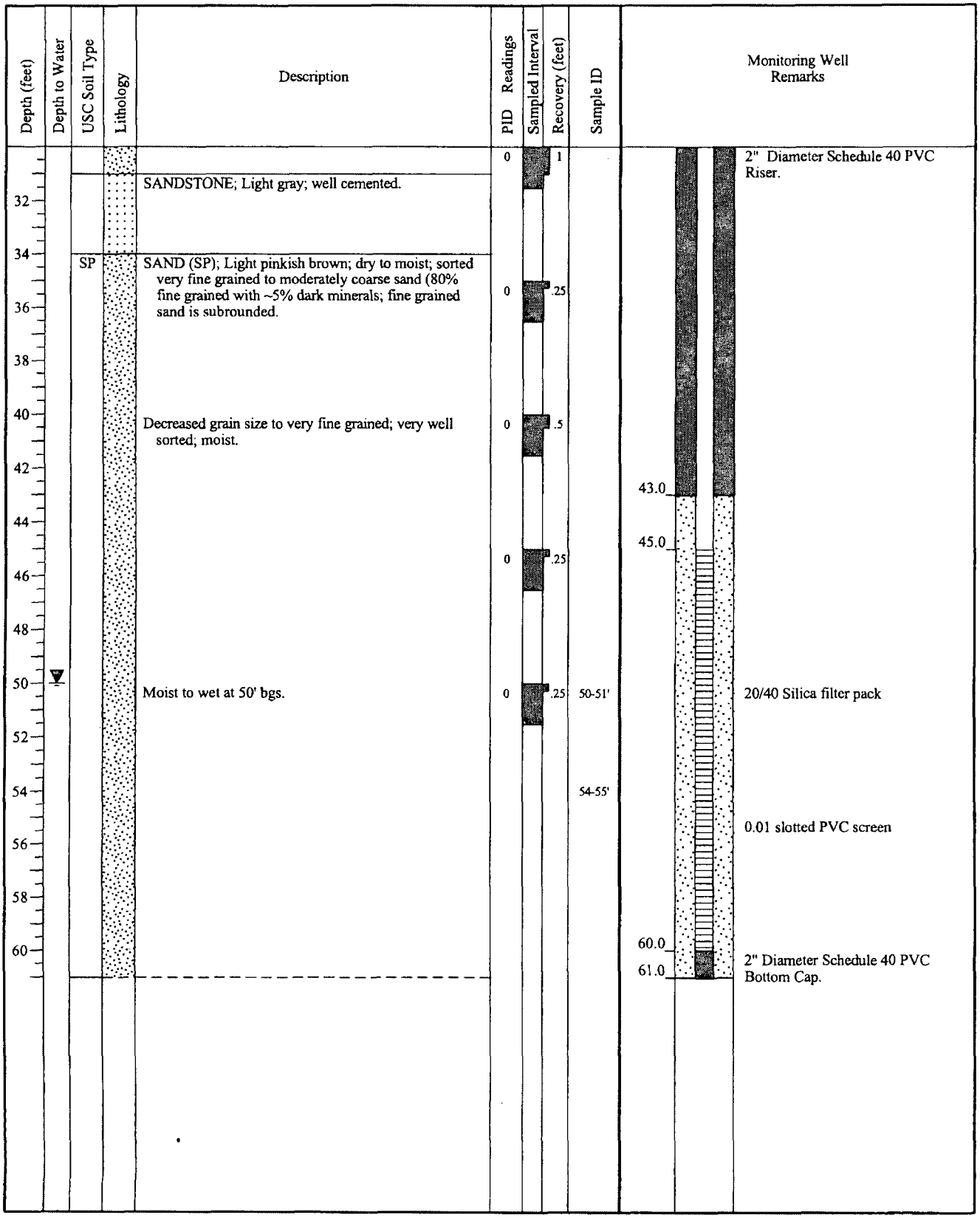
Houston, Texas 77002

Monitoring Well: **MW-5**

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: **128125** Sheet 2 of 2



This log should not be used separately from the original report.

BROWN AND CALDWELL
1415 Louisiana St.
Suite 2500
Houston, Texas 77002

Monitoring Well: **MW-6**

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: **128125** Sheet **1** of **2**

Project Location: **Hobbs, NM**		Logged By: **R. Banda**	Checked By: **R.Rexroad**
Drilling Contractor: **TSS**		Date Started: **4/30/09**	Date Finished: **4/30/09**
Drilling Equipment: **B-59**	Driller: **C. Perryman**	Total Boring Depth: (feet) **65.0**	Depth to Static Water: (feet) **55.00**
Drilling Method: **Air Rotary**	Borehole Diameter: **8"**	TOC Elevation:	Ground Elevation: **102.48**
Sampling Method: **Corebarrel**		Diameter and Type of Well Casing: **2 Schedule 40**	
Comments:		Slot Size: **0.010**	Filter Material: **20/40**
		Development Method: **Submersible Pump**	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
2		SM		SILTY SAND; Gray; dry	0				3X3 Above-grade completion.
4				Tan; dry; Limestone, very dense, strong reaction to acid test.					
6					0		0		
8									
10					0				
12				Pinkish white; Med. density; dry; Caliche, 1/4" gravels					
14		SP		SAND (SP); Pinkish tan; dry to moist; .25-.5" gravels(sandstone), fine to medium grained sand					
16					0		0		
18									
20					0				Bentonite Seal
22									
24									
26					0		0		
28									

This log should not be used separately from the original report.

BROWN AND CALDWELL
1415 Louisiana St.
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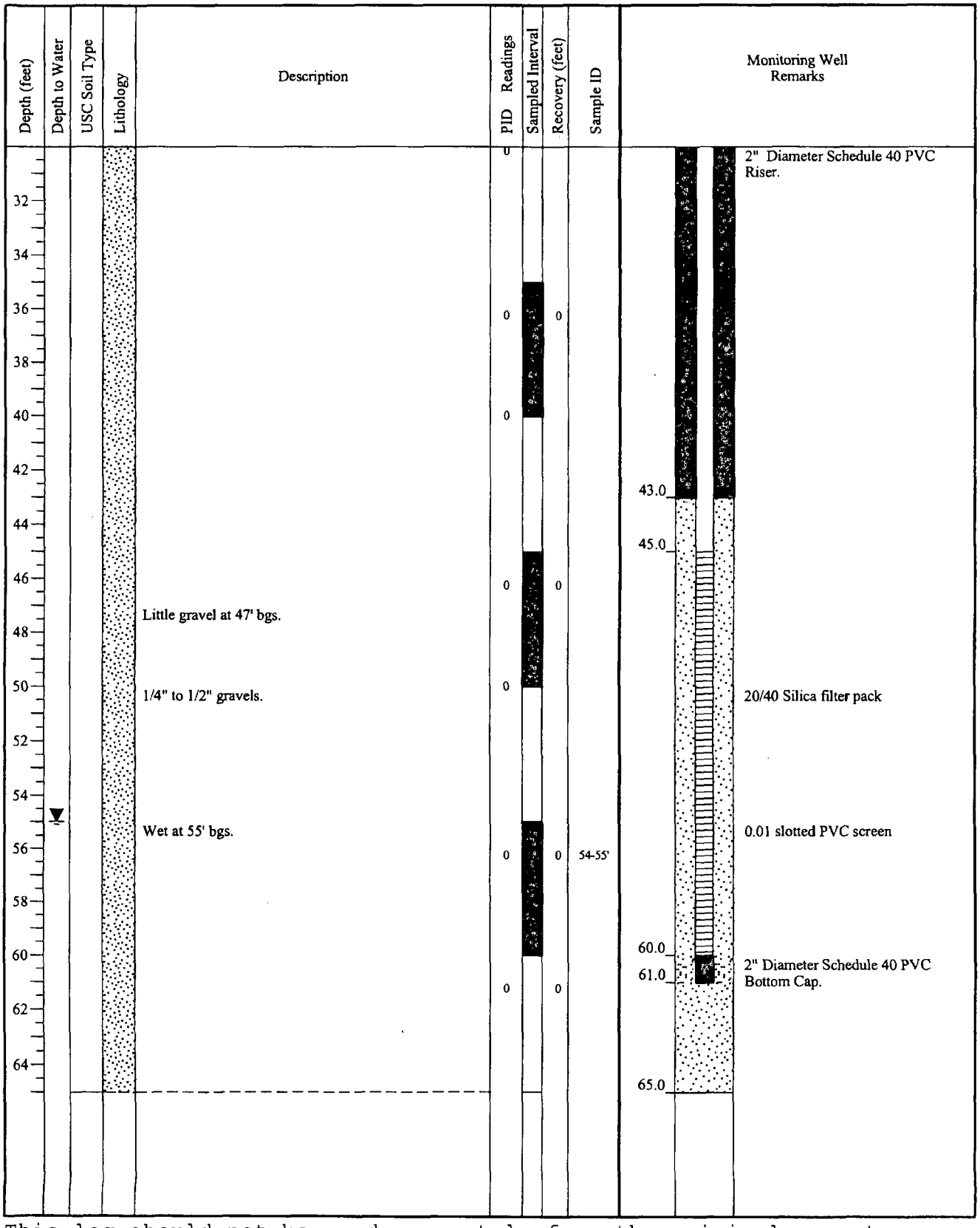
Houston, Texas 77002

Monitoring Well: MW-6

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: 128125 Sheet 2 of 2



This log should not be used separately from the original report.

1RP-2

Former Fracmaster Facility

April-May 2009 Soil and Groundwater Sampling Report

August, 2009

Griswold, Jim, EMNRD

From: Griswold, Jim, EMNRD
Sent: Monday, February 01, 2010 10:36 AM
To: 'joshua.morrissette@bjservices.com'
Subject: Former FracMaster Facility in Hobbs (1RP-2)

Josh,

I received a letter from Brown & Caldwell dated 1/15/10 providing responses to my questions regarding the May 2009 field work (report dated 8/24/09) at the Hobbs facility. The letter refers to corrected boring logs as attachments. These corrected logs were not included in the FedEx package I received. Could you have Richard Rexroad please forward them to me. Thank you.

Jim Griswold
Senior Hydrologist
Environmental Bureau
ENMRD/Oil Conservation Division
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January 15, 2010

BROWN AND CALDWELL

Mr. Jim Griswold
State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Subject: **Responses to NMOCD Comments Pertaining to April-May 2009 Soil and Groundwater Sampling Report**
BJ Services (Former FracMaster Facility, Hobbs, New Mexico)
1RP-2

Dear Mr. Griswold:

Brown and Caldwell, on behalf of BJ Services Company, U.S.A. (BJ Services), offers the following responses to verbal comments provided to BJ Services by the New Mexico Oil Conservation Division (NMOCD) pertaining to the subject report, as reported to Brown and Caldwell. For ease of review, the NMOCD comments are listed in italicized font, followed by Brown and Caldwell's response in normal font.

1. *Elaborate on the specific difficulties encountered during drilling of MW-4.*

On May 1, 2009, air rotary methods were used to attempt the installation of MW-4 in the previously excavated area. Two attempts were made to drill to the required depth but, in both instances, the borehole sidewall collapsed into the drill pipe and bit, almost locking the drill string into the hole. This was attributed to the apparently underconsolidated nature of the backfill materials. It was decided that hollow stem auger technology would be the best approach for installing MW-4, so hollow stem augers were delivered to the site. Even when hollow stem augers were used, gravels in the apparently underconsolidated fill materials tended to accumulate around the outside of the augers and caused them to bind in the hole. After describing the above verbally to NMOCD, approval to move the monitor well location immediately outside and downgradient of the excavated area was granted by NMOCD.

2. *Clarify the drilling method for MW-4 and MW-6, the text in the first paragraph of Section 2.0 and the boring logs do not match.*

Monitor well MW-4 was drilled using hollow stem augers. Monitor well MW-6 was installed using air rotary. The boring logs (attached) have been amended accordingly.

3. *The PID data was not provided on the boring logs as indicated in the first paragraph of Section 2.1.*

The PID data had been entered into the boring log program, but it had failed to print out. The attached boring logs now show the PID data.

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4. *Clarify that soil samples from each monitor well were collected immediately above the saturated zone. Based on the logs they were collected in the saturated zone, but the text indicates just above. The logs for monitor wells MW-5 and MW-6 indicate sample depths of 50 to 51' bgs and 55 to 60' bgs, respectively. In the text, Section 2.1 paragraph 2, it states that a sample was collected from monitor well MW-5 at the 50' to 51' interval first, which was not enough volume, and an additional sample was collected from 54' to 55' bgs. For monitor well MW-6 it states that the sample interval was 54' to 55' bgs.*

It is not always possible to pinpoint the top of the saturated zone during the initial stages of drilling activities at a given drilling location. Only after a monitor well is installed can the depth to the top of the saturated zone be measured to a precision of 0.01 foot. During drilling activities for monitor wells MW-4 through MW-6, field personnel relied on data from boring logs and depth-to-groundwater measurements at existing site monitor wells MW-1 through MW-3, and accordingly attempted to collect soil samples from the interval above where the top of the saturated zone was anticipated. In monitor well MW-4, the soil sample was collected from 53-55 feet, and the depth to water was subsequently recorded at 53 feet (note that the core barrel used for collecting a soil core must be advanced ahead of the drill bit; hence, soil coring within a given interval must be conducted prior to determining whether the top of the saturated zone is actually present within that interval). In monitor well MW-6, the soil sample was collected at 54-55 feet, and the depth to water was subsequently recorded at 55 feet. In monitor well MW-5, soil sampling was performed using a 5-foot core barrel; a soil sample was collected from 50-51 feet, and the depth to water was subsequently recorded at 50 feet. As stated in the report, an insufficient volume of soil was recovered from the 50-51 foot depth interval for all of the required analyses, so a soil core was recovered from the next 5-foot interval at 54-55 feet and submitted for the analyses that could not be performed on the soil recovered from 50-51 feet due to insufficient recovery volume.

5. *Confirm that the accuracy of the survey is 0.01 ft on the vertical plane.*

The wells were field-surveyed by Brown and Caldwell to a vertical accuracy of 0.01 foot.

6. *Based on review the contours on Figure 3, the gradient appears to be more steep from monitor well MW-6 to monitor well MW-4 than it is from monitor well MW-4 to monitor well MW-5.*

Based strictly on well-to-well groundwater elevation differences between monitor wells MW-6 and MW-4 versus between monitor wells MW-4 and MW-5, the calculated gradient from monitor well MW-6 to monitor well MW-4 is slightly less (0.0093 ft/ft) than the calculated gradient from monitor well MW-4 to monitor well MW-5 (0.0109 ft/ft).

However, when taking into account the groundwater elevation data from all six wells at the site, the groundwater elevation contours are more closely spaced between 48.0' and 48.6' than between 47.4' and 48.0'.

7. *Has BJ Services looked into any Salt Water Disposal wells that may be to the south of the property or a pumping water well located to the north of the property? The gradient appears steep for this area and we could be observing the effects of an injection well or an extraction well. A Salt Water Disposal well operating nearby could also be the source of the chlorides.*

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BJ Services has not performed a survey to locate salt water disposal wells and pumping wells in the area of the facility.

BROWN AND CALDWELL

8. Expand on why the volatile organic compound (VOC) samples were collected with a bailer. Per the work plan, a field reading of above 2.5 millligrams per liter (mg/L) for dissolved oxygen (DO) would be indicative of aspirated and therefore invalid groundwater samples. Please explain the logic behind the field determination to collect the VOC samples via bailer. Was it because the DO readings were too high using the low flow?

NMOCD comments pertaining to the February 2006 report submitted by Brown and Caldwell for the subject facility stated that "comparison of the dissolved oxygen levels from the three wells (*i.e.*, monitor wells MW-1, MW-2, and MW-3) potentially indicates the MW-2 sample was improperly aspirated during pumping which could have resulted in the volatilization or degradation of hydrocarbons from the sample".

In response to this NMOCD comment, the work plan for the April-May 2009 site activities stated that "Use of a flow cell in the presence of hydrocarbons may degrade the membrane of the DO probe, resulting in erroneous data. An observed DO level greater than 2.5 mg/L may be considered as indicative of a potentially aspirated (and thus invalid) groundwater sample. If a stabilized groundwater DO level greater than 2.5 mg/L is observed, then the DO measurement will be confirmed through the following procedure:

a. A dedicated, previously unused, or properly decontaminated bailer will be gently lowered into the well no more than 1 foot below the water table and gently removed from the well.
b. The DO content of the water will be measured using a HACH Test Kit ampule.
c. If the HACH Test Kit ampule DO reading is greater than or equal to 2.5 mg/L, then the flow cell DO reading will be considered valid and all sample aliquots will be collected from the monitor well discharge tubing after it is disconnected from the flow cell as described in Section 3.6 *(of the work plan).*
d. If the HACH Test Kit ampule DO reading is less than 2.5 mg/L, then the flow cell DO reading will be considered invalid (*i.e.,* aspirated) and the sample aliquot designated for VOCs analysis will be collected by gently lowering a dedicated, previously unused, or properly decontaminated bailer into the well no more than 1 foot below the water table, then gently removing the bailer from the well, then gently filling the VOC sample containers."

This work plan was submitted to and approved by NMOCD prior to implementation of field activities. It was followed during field activities. This is the reason that a bailer was used to collect VOC aliquots from selected wells. The work plan did not indicate that a field reading exceeding 2.5 mg/L was indicative of an invalid groundwater sample. The work plan stated that a confirmatory sample would be collected for DO testing if the flow cell DO reading exceeded 2.5 mg/L, and that the VOC sample aliquot would be collected using a bailer if the DO test on the groundwater recovered using a bailer confirmed (based on a substantially lower DO value in the bailer sample) that use of the pump had aspirated the groundwater.

9. Since monitor well MW-4 was installed on May 1, 2009 and sampled on May 2, 2009, 24 hours did not actually elapse between well development and sampling. Based upon the Groundwater Sampling

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Field Data Sheet for monitor well MW-4, sampling was started at 11 AM on May 2, 2009. Was development of monitor well MW-4 completed by 11 AM on May 1, 2009?

BROWN AND CALDWELL

The interval of time that elapsed between the development and sampling of MW-4 was less than 24 hours. Based on the amount of time and resources that were expended in the initial two attempts to install MW-4 at a location within the formerly excavated area using air rotary drilling (and including the subsequent wait for delivery of hollow stem augers to the site for the third unsuccessful attempt to install the well within the formerly excavated area using hollow stem augers), it was necessary to compress the timeframe for development and sampling of MW-4 in order to complete field activities within the allocated timeframe for this phase of the project.

Review of the data pertaining to development and sampling of monitor well MW-4 indicates that the well was properly developed, the groundwater produced at the conclusion of purging was of low turbidity (*i.e.,* 1.5 nephelometric turbidity units), and groundwater geochemical parameters (*i.e.,* pH, temperature, specific conductivity, oxidation-reduction potential, and DO) had stabilized at the conclusion of the purging process prior to groundwater sample collection. Therefore, Brown and Caldwell believes that the data from monitor well MW-4 are representative of groundwater conditions at the site.

If you have any questions pertaining to the information presented herein, please contact Mr. Josh Morrissette of BJ Services at 281-357-2573.

Sincerely,

BROWN AND CALDWELL

Richard Rexroad
Project Manager

Les Teague
Principal

Attachments (3)

cc: Josh Morrissette (BJ Services)
File: 128125

1RP-2

Notes upon review of 8/24/09 Report from Brown & Caldwell *April-May 2009 Soil and Groundwater Sampling Report Hobbs (Fracmaster), New Mexico Facility.*

•Did not install monitoring well (MW-4) within margins of former excavation as explicitly directed in my approval of 10/22/08. The reason provided in the report was "Substantial drilling difficulties..." and we did have a phone call in this regard. However, those explicit difficulties need to be affirmed in writing.

•Report text states soil borings for MW-4 and 6 were advanced using air rotary and the boring for MW-5 was advanced via hollow stem auger. Boring/well logs (Appendix A) indicate all borings were advanced via HSA.

•Text also states the soil headspace data was gathered and is presented as part of the well logs. This is not the case, and furthermore the headspace data is not provided anywhere in the report.

•The report states the wells were completed with approximately 2.5 feet of casing remaining above grade (page 5). Depth to water from top of casing measured on May 2nd varied from 53.69 to 55.05 ft. That would place the water table at 51 to 52.5 ft below ground surface. This would mean the soil samples submitted for lab analysis from all wells would have been water-saturated.

•What was the accuracy of the survey? Should be at least 0.1 ft laterally and 0.01 ft vertically.

•Hydraulic gradients (Figure 3)

MW-6 to MW-5: i = (48.79 – 47.36)/142 = 0.0101 = 53.2 ft/mile
MW-6 to MW-4: i = (48.79 – 47.95)/88 = 0.0096 = 50.4 ft/mile
MW-4 to MW-5: i = (47.95 – 47.36)/53 = 0.0111 = 58.8 ft/mile
The steeper gradient, by 17%, is between MW-4 and MW-5, but the contouring reflects the opposite.

MW-6 to MW-1: i = (48.79 – 47.81)/56 = 0.0175 = 92.4 ft/mile
MW-6 to MW-2: i = (48.79 – 47.55)/118 = 0.0105 = 55.5 ft/mile

MW-4 to MW-3: i = (47.95 – 47.46)/49 = 0.0100 = 52.8 ft/mile
MW-4 to MW-2: i = (47.95 – 47.55)/51 = 0.0078 = 41.4 ft/mile
MW-4 to MW-1: i = (47.95 – 47.81)/50 = 0.0028 = 15.8 ft/mile

Direction of groundwater flow based on this data is more toward the NW rather than north. The gradients are quite large, 1 to 2% in the downgradient direction, which is perhaps an order of magnitude higher that one might expect unless there is a point of recharge to the south, or someone pumping to the north and the site resides within the drawdown cone. If so, then this could be affecting the dissolved-phase concentrations by not only dilution, but also dissociation from the overlying adsorbed soil contamination.

•Change in DTWs

	2/23/06	5/2/09	delta
MW-1	53.64	55.40	1.76
MW-2	52.78	54.50	1.72
MW-3	53.22	54.95	1.73

•Observed increase in dissolved-phase concentrations in MW-2 in spite of a drop in water levels

• Change in gradient over time

2/23/06

MW-1 to MW-3: i = (49.57 – 49.19)/70 = 0.0054 = 28.7 ft/mile
MW-2 to MW-3: i = (49.27 – 49.19)/88 = 0.0009 = 4.8 ft/mile
MW-1 to MW-2: i = (49.57 – 49.27)/97 = 0.0031 = 16.3 ft/mile

5/2/09

MW-1 to MW-3: i = (47.81 – 47.46)/70 = 0.0050= 26.4 ft/mile (decrease of 9%)
MW-2 to MW-3: i = (47.55 – 47.46)/88 = 0.0010 = 5.4 ft/mile (increase of 13%)
MW-1 to MW-2: i = (47.81 – 47.55)/97 = 0.0027 = 14.2 ft/mile (decrease of 15%)

•Explain the reason for using bailed samples when testing for VOCs, but pumped samples for everything else.

•Change in DOs

	2/23/06	2009 meter	2009 kit
MW-1	0.6	4.73	1.4
MW-2	4.3	3.78	0.8
MW-3	0.6	1.92	0.6
MW-4		0.54	0.4
MW-5		3.46	0
MW-6		8.79	9.2

It appears MW-4 was sampled the same day it was installed; 5/2/09.

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August 24, 2009

BROWN AND CALDWELL

Mr. Jim Griswold
State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Subject: **Transmittal of April-May 2009 Soil and Groundwater Sampling Report**
BJ Services (Former FracMaster Facility, Hobbs, New Mexico)
1RP-2

Dear Mr. Griswold:

Attached please find a report summarizing soil and groundwater sampling conducted at the BJ Services Company, U.S.A. (BJ Services) former FracMaster facility in Hobbs, New Mexico in April-May 2009.

Based on the results presented herewith, BJ Services proposes an aggressive remedial approach involving use of Oxygen-Release Compound® to address hydrocarbon-impacted groundwater at the site.

Chloride impact to groundwater is present at the site, but is confined to wells that are upgradient of or lateral to the former field waste station and appears to be related to an upgradient off-site source. Wells located downgradient of the former field waste station are not chloride-impacted. On this basis, no further action with regard to chloride at the site appears to be warranted.

After completion of your review of the enclosed report, BJ Services and Brown and Caldwell would like to meet with you to discuss BJ Services' proposed remedial approach for the site. We will contact you shortly to discuss your availability.

Thank you for your attention to this matter.

Sincerely,

BROWN AND CALDWELL

Richard Rexroad for
Project Manager

Les Teague
Principal

cc: Josh Morrissette (BJ Services)
File: 128125

APRIL-MAY 2009 SOIL AND GROUNDWATER SAMPLING REPORT
HOBBS (FRACMASTER), NEW MEXICO FACILITY

1RP-2

BJ SERVICES COMPANY, U.S.A.

August 24, 2009

APRIL-MAY 2009 SOIL AND GROUNDWATER SAMPLING REPORT
HOBBS (FRACMASTER), NEW MEXICO FACILITY

1RP-2

Prepared for

BJ Services Company, U.S.A.
11211 FM 2920
Tomball, Texas 77375

BC Project Number: 128125

Richard L. Rexroad
Project Manager

August 24, 2009

Brown and Caldwell
1415 Louisiana, Suite 2500
Houston, Texas 77002 - (713) 759-0999

CONTENTS

1.0 INTRODUCTION

Brown and Caldwell conducted monitor well installation and soil and groundwater sampling activities at the BJ Services Company, U.S.A. (BJ Services) FracMaster facility located at 1329 N. West County Road in Hobbs, New Mexico in April-May 2009. Figure 1 shows the location of the BJ Services FracMaster facility. This report presents a description of the field activities and a summary and evaluation of the analytical results. A site map depicting the locations of the new and previously existing monitor wells at the facility is provided as Figure 2.

A former field waste tank and approximately 1,400 tons of soil were previously removed at the inactive BJ Services FracMaster facility in Hobbs, New Mexico. Post-excavation samples reportedly indicated impacts to soil by gasoline- and diesel-range total petroleum hydrocarbons (TPH-G and TPH-D). Volatile and semivolatile organic compounds (VOCs and SVOCs) were reportedly detected in the post-excavation floor sample; the post-excavation sidewall samples were not analyzed for VOCs and SVOCs. The approximately 25-foot deep excavated area was subsequently backfilled. Subsurface sampling conducted by Brown and Caldwell in July 2005 indicated impacts to vadose zone soils by benzene, toluene, ethylbenzene and xylenes (BTEX) and total petroleum hydrocarbons (TPH) at the Sample ES and WS locations to the east and west of the former field waste tank area, as well as impacts to underlying groundwater by benzene, naphthalene, and xylenes.

Three monitor wells were installed in the area of the former field waste tank in February 2006 to determine the direction of groundwater flow and to more fully evaluate impact to groundwater at the site. Soil samples were collected from two of the monitor well soil borings installed in February 2006 to delineate the extent of soil impact determined on the basis of the July 2005 sampling event. Data from monitor wells MW-1, MW-2, and MW-3 indicated that groundwater was present at approximately 49 feet to 50 feet below grade under unconfined conditions in the uppermost aquifer at the formerly excavated area, and that groundwater flow direction is in a generally northward direction. Chloride concentrations measured in cross-gradient monitor well MW-1 and downgradient MW-2 in February 2006 exceeded the New Mexico Water Quality Control Commission (NMWQCC) standard of 250 milligrams per liter (mg/L). TPH-G,

naphthalene, 1,2,4,-trimethylbenzene, and m,p-xylenes were detected in the groundwater sample collected from monitor well MW-2, but concentrations of these constituents were less than applicable NMWQCC criteria.

On August 21, 2008, the New Mexico Oil and Gas Conservation Commission (NMOCD) requested that BJ Services submit a work plan for installation and sampling of three additional monitor wells to further assess soil and groundwater impact in the vicinity of the formerly excavated area. This work plan was submitted on November 13, 2008 and subsequently approved by NMOCD. This report presents the results of the investigation performed per the requirements of the November 13, 2008 work plan.

2.0 FIELD ACTIVITIES

Brown and Caldwell installed three monitor wells in the vicinity of the formerly excavated area using hollow stem auger and air rotary drilling techniques in April-May 2009. Monitor well MW-5 was installed on April 7, 2009 using hollow stem augers. The hollow stem auger drilling rig met refusal at approximately 10 feet below grade at the monitor well MW-6 location, so this boring was plugged and abandoned. Brown and Caldwell remobilized to the site on April 30, 2009 with air rotary drilling and completed the installation of monitor wells MW-4 and MW-6. The following subsections describe the field activities conducted by Brown and Caldwell during the groundwater sampling and soil sampling event. Section 3.0 presents an evaluation of these data.

2.1 Soil Sampling Activities

The soil borings for monitor wells MW-4, MW-5, and MW-6 were sampled at 5-foot intervals from ground surface to the top of the saturated zone. Recovered soil cores were classified in accordance with the Unified Soil Classification System (USCS) and scanned with a calibrated photoionization detector (PID). PID screening was performed by placing a portion of each recovered core in a previously unused zip-lock plastic bag, sealing the bag, allowing the bag to set in sunlight for approximately 5 minutes, then inserting the PID probe into the bag. PID response was measured and recorded on the soil boring and monitor well installation logs presented in Appendix A.

No elevated PID responses were measured, so soil samples were collected for laboratory analysis from the interval immediately above the top of the saturated zone. Samples were collected from the 53- to 55-foot interval in the monitor well MW-4 boring and from the 54- to 55-foot interval in the monitor well MW-6 boring. A soil sample was collected from the 50- to 51-foot interval of the monitor well MW-5 soil boring. The volume of soil recovered from this interval was insufficient for all of the required analyses, so an additional soil sample was collected from the 54- to 55-foot interval of monitor well MW-5 soil boring.

The monitor well MW-4, MW-5, and MW-6 soil samples were analyzed for the following parameters:

- TPH-G, TPH-D, and mineral spirits-range total petroleum hydrocarbons (TPH-M) by Method 8015M;
- VOCs by Method 8260B; and
- SVOCs by Method 8270C.

The soil sample collected from the soil boring installed for the installation of the upgradient monitor well, MW-6, was analyzed for chloride by Method 300.0. Chloride analysis of soil samples collected from the soil borings installed for downgradient monitor wells MW-4 and MW-5 was inadvertently omitted. The effects of this omission on the assessment appear to be minimal because chloride concentrations in the groundwater samples collected from monitor wells MW-5 and MW-5 are less than the NMWQCC standard of 250 mg/L (see Section 3.2).

The soil sample collected from the upgradient monitor well MW-6 location was also analyzed for the following additional parameters:

- RCRA metals;
- Major Anions (*i.e.,* chloride, fluoride, sulfate, nitrate); and
- Major Cations (*i.e.,* calcium, magnesium, potassium, sodium).

The laboratory analytical reports and chain-of-custody documentation for the soil samples are provided in Appendix B.

2.2 Monitor Well Installation and Development Activities

Monitor wells MW-4, MW-5, and MW-6 were installed in the area of the former field waste tank to determine the extent of groundwater impact at the site. Monitor well MW-4 was originally intended to be installed within the lateral boundaries of the formerly excavated area. Substantial drilling difficulties were encountered at the original MW-4 location within the formerly excavated area, so

after discussion with Mr. Jim Griswold of NMOCD, monitor well MW-4 was installed immediately north of the former field waste tank excavation. Monitor well MW-5 was installed further north at a location further downgradient of the former field waste tank excavation, between existing monitor wells MW-2 and MW-3. Monitor well MW-6 was installed approximately 60 feet south of the former field waste tank excavation at an upgradient location.

The monitor well soil borings were advanced to an approximate depth of 61 feet to 65 feet below ground surface, and approximately 10 feet below the observed top of the uppermost saturated zone. The wells were constructed with 15 feet of 2-inch diameter 0.010-inch slotted Schedule 40 PVC screen, a 1-foot Schedule 40 PVC sediment sump, and sufficient 2-inch diameter Schedule 40 PVC riser to extend the top of the riser to approximately 2.5 feet above grade. The well screens were placed to straddle the saturated zone with approximately 5 feet of screen above the apparent top of the saturated zone and approximately 10 feet of screen below the apparent top of the saturated zone. The annular area of each well was backfilled with 20/40-grade filter sand installed from the total depth of the well to approximately 2 feet above the top of the screen. An approximate 2-foot hydrated bentonite seal was placed atop the filter pack, and the remaining annular area was backfilled with bentonite. The wells were constructed with a concrete surface pad measuring approximately 2 feet by 2 feet by 4 inches thick, with an above-grade locking steel protective cover. Construction diagrams for monitor wells MW-4, MW-5, and MW-6 are presented in Appendix A.

The monitor wells were developed with a submersible pump until produced groundwater was clear and reasonably free of suspended sediment. The top-of-casing elevation of each of the six monitor wells at the site was surveyed relative to an arbitrary benchmark of 100.00 feet, located on the concrete surface near the warehouse, using field surveying techniques. The horizontal locations of the wells were measured relative to existing features at the facility.

2.3 Groundwater Sampling Activities

The static depth-to-water from the top-of-casing of each monitor well was measured using a decontaminated oil-water interface probe on May 2, 2009, prior to any purging and sampling activities conducted on that date. Groundwater elevation data for the wells are presented in Table 1.

A groundwater elevation map for May 2, 2009 is presented in Figure 3. The groundwater elevation data indicate that the general direction of groundwater flow is to the north.

The monitor wells were purged with a submersible pump and previously unused down-hole tubing until groundwater stabilization occurred. Low flow/low stress purging was performed to maintain the water level at or near the static water level. Field parameter measurements for pH, temperature, specific conductivity, dissolved oxygen, and redox potential were collected during purging activities. Each well was purged until variability of less than 10 percent for specific conductivity, less than 0.1 standard pH units, and less than 0.5°C for temperature was achieved. Groundwater dissolved oxygen and ferrous iron concentrations were measured in each monitor well upon conclusion of purging activities. Field parameter readings were recorded on the groundwater sampling forms included in Appendix C. Table 2 summarizes groundwater geochemical data for the April-May 2009 sampling event.

Groundwater sample aliquots designated for VOCs analysis were collected using a previously unused disposable bailer. Groundwater sample aliquots for all other analytical parameters were obtained directly from the discharge line of the submersible pump. The groundwater samples were placed in laboratory-prepared, clean glass containers, sealed with Teflon®-lined lids, labeled, and placed on ice in an insulated cooler for delivery to Southern Petroleum Laboratory in Houston, Texas for analysis using standard chain-of-custody procedures. The laboratory analytical reports and chain-of-custody documentation for groundwater samples collected during the current sampling event are provided in Appendix B.

Groundwater samples were analyzed for the following parameters:

- TPH-G, TPH-D, and TPH-M by Method 8015M;
- VOCs by Method 8260B;
- SVOCs by Method 8270C;
- Chloride by Method 300;
- Nitrate by Method 300;
- Sulfate by Method 300;
- Methane by Method RSK 147/175; and
- Alkalinity by Method 310.1.

2.4 Quality Assurance / Quality Control (QA/QC) Samples

QA/QC samples were collected throughout the duration of field activities for the project. Trip blanks were submitted at a rate of one trip blank per cooler containing one or more soil or groundwater samples designated for VOCs analysis. Trip blanks were analyzed for VOCs. Field blanks were collected at a rate of one field blank per day on any day during which a soil or groundwater sample designated for VOCs analysis was collected. Field blanks were analyzed for VOCs.

One equipment rinsate blank pertaining to soil sampling equipment and one equipment rinsate blank pertaining to groundwater sampling equipment were collected. The equipment rinsate blank pertaining to soil sampling equipment was collected by pouring distilled water over a decontaminated split spoon sampling device and collecting the runoff in appropriate sample containers. The equipment rinsate blank pertaining to groundwater sampling equipment was collected by pumping distilled water through the decontaminated pump and unused polyethylene tubing used for collection of groundwater samples and collecting the discharged water runoff in appropriate sample containers. The equipment rinsate blanks were analyzed for VOCs, SVOCs, and TPH-D, TPH-G, and TPH-M.

A duplicate groundwater sample, designated as MW-99, was collected from monitor well MW-3 and analyzed for VOCs, SVOCs, and TPH-D, TPH-G, and TPH-M.

2.5 Decontamination and Waste Management

Heavy drilling equipment was decontaminated by washing with high-pressure potable water. Small-scale sampling equipment was decontaminated using distilled water and a non-phosphate detergent. Soil cuttings, decontamination fluids, and produced groundwater were containerized in DOT-approved 55-gallon drums that were moved to a central drum storage area at the site, pending disposal by BJ Services.

3.0 ANALYTICAL RESULTS

The following subsections present the analytical results for soil and groundwater samples collected during the April-May 2009 sampling event.

3.1 Soil Samples

The soil samples collected from the monitor well MW-4, MW-5, and MW-6 borings were analyzed for the parameters listed in Section 2.1. Soil sample analytical results are summarized in Table 3.

TPH and BTEX analysis results were compared to NMOCD criteria listed in "Guidelines for Remediation of Leaks, Spills, and Releases (NMOCD, August 13, 1993). The NMOCD soil remediation action levels for unsaturated contaminated soils (for a NMOCD hazard ranking of >19, based on groundwater occurrence at <50 feet) are benzene at 10 milligrams per kilogram (mg/kg), total benzene, toluene, ethylbenzene, and xylenes (BTEX) at 50 mg/kg, and TPH at 100 mg/kg. The concentrations for TPH and BTEX from the soil samples collected from the monitor well MW-4, MW-5, and MW-6 borings were below the applicable NMOCD remediation action levels.

3.2 Groundwater Samples

The groundwater samples from monitor wells MW-1 through MW-6 were analyzed for the parameters listed in Section 2.3. Table 4 presents analytical results for these groundwater samples.

With the following exceptions, concentrations of TPH-G, TPH-D, TPH-M, and all VOCs and SVOCs are less than applicable NMWQCC standards:

- Benzene in monitor wells MW-2 and MW-4;
- Naphthalene in monitor well MW-4; and
- Chloride in monitor wells MW-1, MW-2, and MW-6.

The detections of benzene in monitor wells MW-2 and MW-4 at respective concentrations of 0.018 mg/L and 0.081 mg/L exceed the NMWQCC standard of 0.010 mg/L for benzene. The downgradient extent of benzene impact in monitor well MW-4 is generally defined by monitor wells MW-3 and MW-5. Benzene concentrations are shown in Figure 4.

Naphthalene was detected in monitor well MW-4 at concentrations of 0.086 mg/L (by Method 8260B analysis) and 0.044 mg/L (by Method 8270C analysis). A NMWQCC standard of 0.03 mg/L exists for naphthalene plus total monomethylnaphthalenes. 2-Methylnaphthalene was detected at a concentration of 0.027 mg/L (Method 8270C analysis) in monitor well MW-4, but was not detected in any other wells at the site. The concentrations of naphthalene and of naphthalene plus monomethylnaphthalene in monitor well MW-4 thus exceed the applicable NMWQCC standard. The downgradient extent of naphthalene plus monomethylnaphthalene impact in monitor well MW-4 is generally defined by monitor wells MW-3 and MW-5. Naphthalene concentrations are shown in Figure 5.

The NMWQCC standard of 250 mg/L for chloride was exceeded in monitor wells MW-1, MW-2, and MW-6 at respective concentrations of 456 mg/L, 452 mg/L, and 624 mg/L. Chloride concentrations are shown in Figure 6. The fact that the highest chloride concentration was measured in upgradient monitor well MW-6 and that chloride concentrations less than the NMWQCC standard of 250 mg/L were measured in monitor wells MW-3, MW-4, and MW-5, which are located directly downgradient of the former field waste tank area, indicates that chloride impact at the site is associated with an upgradient, off-site source. Substantial decreases in chloride concentrations from 1,070 mg/L to 456 mg/L in monitor well MW-1 and from 512 mg/L to 452 mg/L in monitor well MW-2 have occurred between 2006 and 2009.

Naphthalene, 1,2,4,-trimethylbenzene, ethylbenzene, and xylenes were also detected in monitor well MW-2, but at concentrations less than the applicable NMWQCC criteria. TPH-G and TPH-D were also detected in the MW-2 groundwater sample.

3.3 Natural Attenuation Evaluation

Natural attenuation causes the mass of contaminants in a groundwater plume to be reduced through naturally occurring subsurface processes. These processes include sorption, volatilization, advection, diffusion, abiotic degradation, and biotic degradation. Of these mechanisms, biotic and abiotic degradation are destructive, whereas the other processes are non-destructive. Biotic degradation is also known as "Intrinsic Bioremediation" or "Passive Bioremediation".

Intrinsic bioremediation uses indigenous electron acceptors (dissolved oxygen, nitrate, ferric iron, sulfate, and carbon dioxide) to transform contaminants to innocuous end products (carbon dioxide, methane, and water) through biologically mediated oxidation-reduction reactions. To verify that natural attenuation of dissolved contaminants is occurring, contaminant loss as well as the relationship between contaminant concentration and the concentration of electron acceptors and/or reduction products are evaluated.

The primary evidence for the occurrence of natural attenuation is loss of contaminant mass from a plume such that the size or concentration of the plume is stable or decreasing. This may be evidenced by decreases in contaminant concentrations over distance from a source area or by decreases in contaminant concentrations in individual monitor wells over time.

Geochemical data may provide secondary supporting evidence of natural attenuation. During natural attenuation, dissolved oxygen levels decrease as oxygen is consumed by microbial activity. After dissolved oxygen is depleted, nitrate serves as the next available electron acceptor, causing nitrate concentrations to decrease. Ferric iron is the next electron acceptor used during microbial activity. Ferric iron concentrations are not easily measured, so the concentration of ferrous iron, a product of ferric iron reduction during hydrocarbon biodegradation, is measured instead. Thus, concentrations of ferrous iron are expected to increase in areas where natural attenuation of hydrocarbons is occurring. Utilization of sulfate as an electron acceptor may occur after consumption of dissolved oxygen, nitrate, and ferric iron. Therefore, sulfate concentrations may also decrease in areas where natural biodegradation of hydrocarbons is occurring. Methane forms

when carbon dioxide is utilized as an electron acceptor during natural attenuation of hydrocarbons. The oxidation-reduction potential (ORP) of groundwater is often decreased in areas where biodegradation of hydrocarbons is occurring. Fatty acids formed by microbial organisms as metabolic by-products during degradation of hydrocarbons may dissolve carbonates in saturated zone soils, causing alkalinity of groundwater to increase where biodegradation is occurring.

The following subsections present an analysis of site-specific data pertinent to the evaluation of natural attenuation of hydrocarbons at the facility.

3.3.1 Primary Evidence

Table 5 presents current and historic VOCs, SVOCs, TPH, and chloride concentration data for groundwater samples collected from monitor wells MW-1, MW-2, and MW-3. Groundwater concentration data from monitor wells MW-4, MW-5, and MW-6 are not included in Table 5 because these wells have been sampled only once.

Concentrations of VOCs, naphthalene, TPH-D and TPH-G have increased in monitor well MW-2 between 2006 and 2009. It is unclear at present if these concentration increases are due to source area loading or whether they may be related to differences in groundwater elevations between the two groundwater sampling events.

Chloride concentrations in monitor wells MW-1, MW-2, and MW-3 have decreased between 2006 and 2009.

3.3.2 Secondary Evidence

Groundwater geochemical data pertinent to evaluation of the potential for natural attenuation of hydrocarbons in groundwater at the site are presented in Table 2. Indicator-specific discussions of secondary evidence of natural attenuation of hydrocarbons are presented below.

Dissolved Oxygen

Dissolved oxygen concentrations as measured by Hach Test methodology range from 0 mg/L to 0.8 mg/L in monitor wells MW-2, MW-3, MW-4, and MW-5, which are situated at locations generally downgradient of the former field waste station. Corresponding dissolved oxygen concentrations were measured at 1.4 mg/L in cross-gradient monitor well MW-1 and at 9.2 mg/L in upgradient monitor well MW-6.

The decreased dissolved oxygen concentrations measured in groundwater downgradient of the former field waste station suggest that natural attenuation of hydrocarbons is occurring in this area of the site.

Nitrate

Nitrate concentrations ranged from 0.564 mg/L to less than 0.5 mg/L in monitor wells MW-2, MW-3, MW-4, and MW-5, which are situated at locations generally downgradient of the former field waste station. Nitrate was measured at a concentration of 4 mg/L in cross-gradient monitor well MW-1 and less than 0.5 mg/L in upgradient monitor well MW-6.

The depletion of nitrate in wells located downgradient of the former field waste station suggests that nitrate is being used as an electron acceptor during natural attenuation of hydrocarbons at the site.

Nitrate was not detected in upgradient well MW-6; this measurement should be confirmed in future groundwater sampling events.

Ferrous Iron

The elevated ferrous iron concentration of 2.2 mg/L in monitor well MW-2, which had the highest concentration of VOCs during the April-May 2009 sampling event, provides further indication of natural attenuation of hydrocarbons in this portion of the site. Ferrous iron concentrations in

monitor wells MW-3, MW-5, and MW-6 were substantially lower, ranging from 0 mg/L to 0.2 mg/L. The concentration of ferrous iron was not measured in monitor well MW-4.

Sulfate

Sulfate concentrations in downgradient monitor wells MW-2, MW-3, MW-4 and MW-5 ranged from 5.25 mg/L to 89 mg/L, with the lowest sulfate concentration measured in monitor well MW-2, which had the highest concentration of VOCs during the April-May 2009 sampling event. In contrast, sulfate concentrations ranged from 128 mg/L in cross-gradient well MW-1 to 91.9 mg/L in upgradient well MW-6.

The depletion of sulfate in wells located downgradient of the former field waste station suggests that sulfate is being used as an electron acceptor during natural attenuation of hydrocarbons at the site.

Methane

Methane was measured at a concentration of 0.23 mg/L in monitor well MW-2, which had the highest concentration of VOCs measured during the April-May 2009 groundwater sampling event. This methane concentration is two orders of magnitude greater than in any other monitor well at the site.

The elevated methane concentration in hydrocarbon-impacted monitor well MW-2 provides further secondary evidence of natural attenuation of hydrocarbons in the area downgradient of the former field waste station.

Alkalinity

The alkalinity of groundwater in hydrocarbon-impacted monitor wells MW-2 and MW-4 is substantially elevated relative to groundwater in other wells at the site, providing additional secondary evidence of natural attenuation of hydrocarbons at the site.

3.3.3 Summary

Concentrations of chloride in monitor wells MW-1, MW-2, and MW-3 have decreased by 12 percent to 57 percent between 2006 and 2009.

Additional chemical concentration and groundwater elevation data will be needed to determine whether the increases in VOCs concentrations in this well between 2006 and 2009 are a function of source area loading or changes in groundwater elevation.

Data from each of the groundwater geochemical indicators provide evidence that natural attenuation of hydrocarbons is occurring at the site.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on information obtained during the April-May 2009 sampling event at the BJ Services FracMaster Hobbs, New Mexico facility.

4.1 Conclusions

- Groundwater elevation data indicate an overall northward direction of groundwater flow at the site.
- Chloride impact to groundwater appears to be related to an upgradient, off-site source. The highest chloride concentration is present in the upgradient monitor well at the site. Chloride concentrations less than the NMWQCC standard of 250 mg/L were measured in wells directly downgradient of the former field waste station, thus defining the downgradient extent of this chloride impact. On this basis, no further action is warranted with respect to chloride at the site.
- Benzene was measured at concentrations exceeding the applicable NMWQCC standard in the groundwater samples collected from monitor wells MW-2 and MW-4 during the current sampling event. The downgradient extent of benzene impact in monitor well MW-4 is defined by monitor wells MW-3 and MW-5, but the downgradient extent of benzene impact to groundwater at the monitor well MW-2 location is not defined.
- The concentration of naphthalene and the concentration of naphthalene plus monomethylnaphthalenes in monitor well MW-4 exceed the applicable NMWQCC standard of 0.03 mg/L. The downgradient extent of this impact is defined by monitor wells MW-2, MW-3, and MW-5.

4.2 Recommendations

- Add Oxygen-Release Compound® (ORC) to hydrocarbon-impacted monitor wells MW-2 and MW-4.

- Conduct follow-up gauging and sampling of site monitor wells to assess concentration trends in these wells. If hydrocarbon concentrations decrease in monitor wells MW-2 and MW-4 following addition of ORC to these wells, then inject ORC directly to the aquifer in the area of the former field waste station and downgradient to the area of monitor wells MW-2 and MW-4.

DISTRIBUTION

April-May 2009 Soil and Groundwater Sampling Report
BJ Services Company, U.S.A.
Hobbs (Fracmaster), New Mexico Facility

August 24, 2009

Final Distribution as follows:

1 copy to: State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. Jim Griswold

1 copy to: State of New Mexico
Oil Conservation Division, Hobbs District Office
1625 N. French Dr.
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Hobbs, New Mexico 88240

Attention: Mr. Chris Williams

1 copy to: BJ Services Company, U.S.A.
2708 West County Road
Hobbs, New Mexico 88240

Attention: Mr. John Adcock

1 copy to: BJ Services Company, U.S.A.
11211 FM 2920
Tomball, Texas 77375

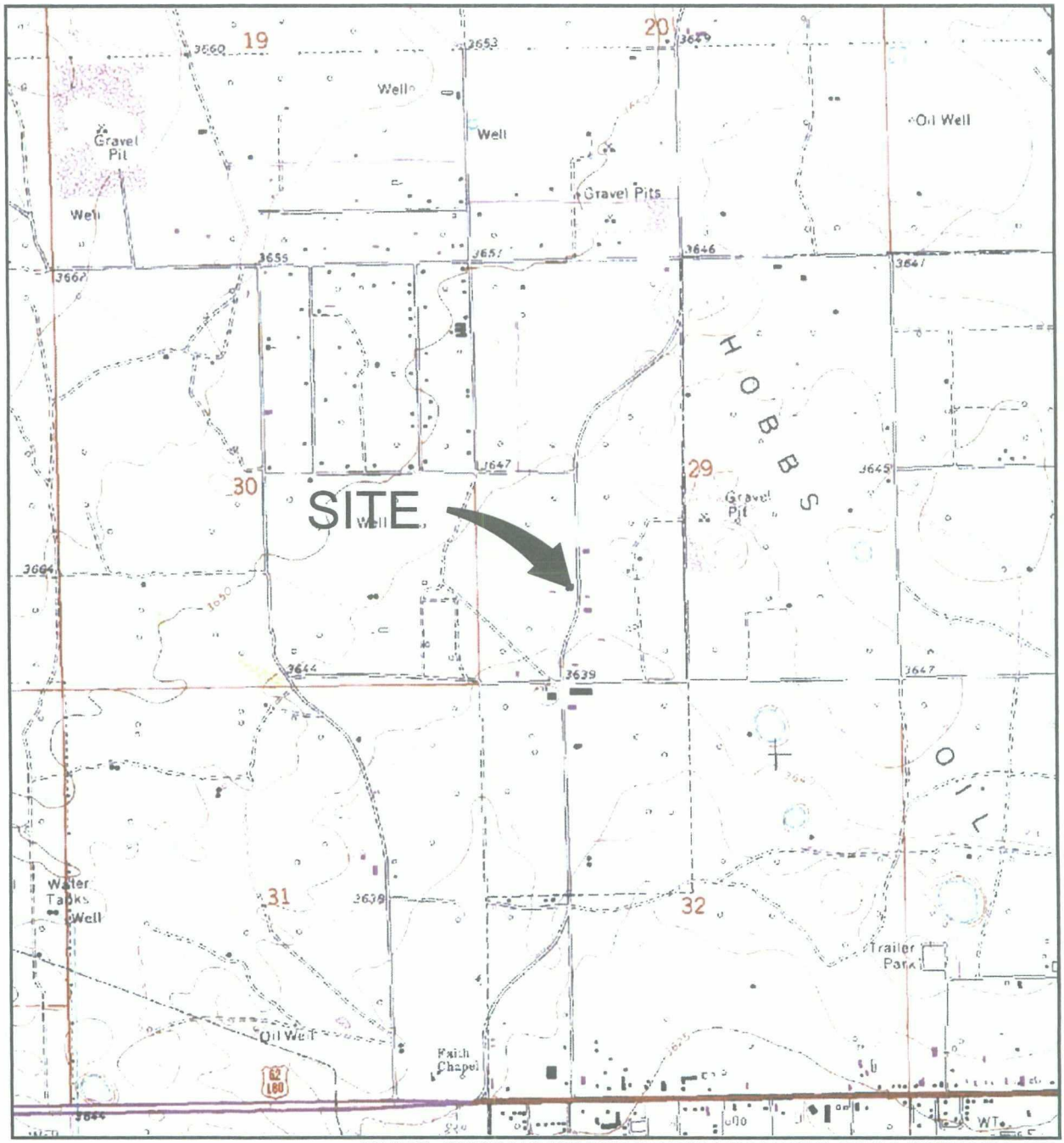
Attention: Ms. Jo Ann Cobb

1 copy to: Brown and Caldwell Project File

QUALITY CONTROL REVIEWER

Les Teague
Principal

FIGURES



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE - HOBBS, NEW MEXICO; 1979

N

SCALE: 1" = 2000'

Figure 1

SITE LOCATION MAP
BJ SERVICES FRACMASTER
BJ SERVICES COMPANY, U.S.A.

1329 N. WEST COUNTY ROAD
HOBBS, NEW MEXICO

BROWN AND CALDWELL

Jun 12, 2009 - 8:57am bmason

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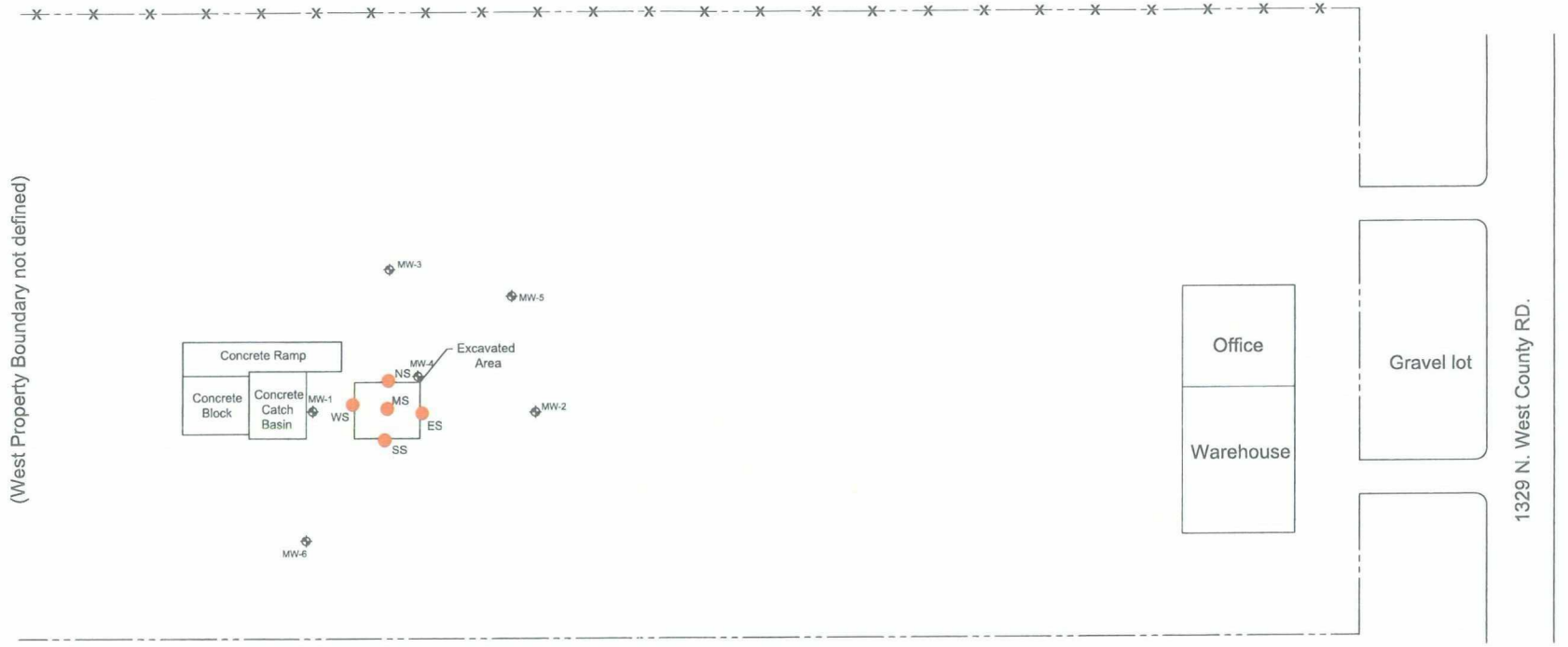

0 25 50

SCALE IN FEET

SITE PLAN LEGEND

MONITOR WELL LOCATIONS

NS SOIL BORING LOCATIONS

FENCE LINE

PROPERTY BOUNDARY

BROWN AND CALDWELL

Figure 2

SITE MAP

BJ SERVICES FRACMASTER

BJ SERVICES COMPANY, U.S.A.

1329 N. WEST COUNTY ROAD

HOBBS, NEW MEXICO

Jun 12, 2009 - 10:49am

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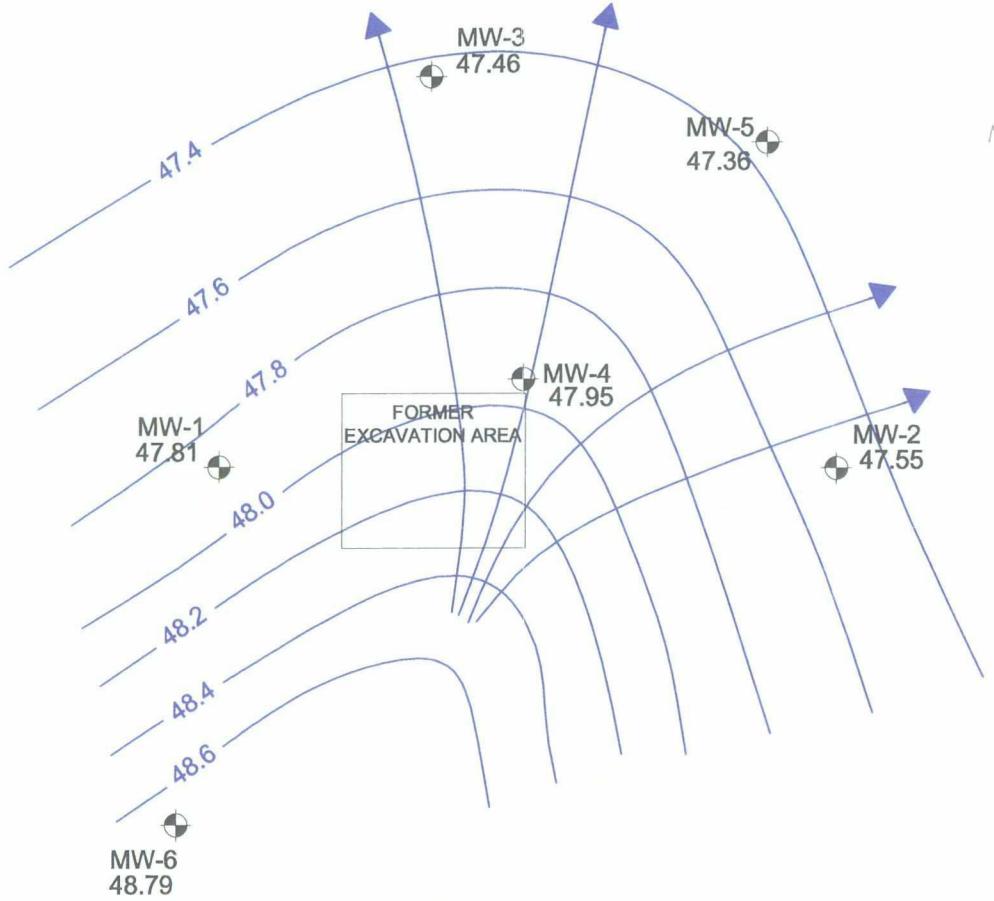


MW-5 to MW-6

$\Delta = 48.79 - 47.36 = 1.43'$

$i = 1.43/142 = 0.0101$

$= 53$ ft/mile

MW-4 to MW-6

$\Delta = 48.79 - 47.95 = 0.84$

$i = 0.84/88 = 0.0095$

$= 50$ ft/mile

MW-5 to MW-4

$\Delta = 47.55 - 47.36 = 0.59$

$i = 0.59/53 = 0.0111$

$= 59$ ft/mile

0 15 30

SCALE IN FEET

LEGEND

MW-1 47.81 — MONITOR WELL LOCATION AND GROUNDWATER ELEVATION (FEET)

GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

MW-1 to MW-6

$48.79 - 47.81 = 0.98 = \Delta$

$i = 0.98/56 = 0.0175 = 92$ ft/mile

MW-2 to MW-6

$\Delta = 48.79 - 47.55 = 1.24$

$i = 1.24/119 = 0.0104 = 55$ ft/mile

DATE	PROJECT NUMBER
6/10/2009	128125

BROWN AND CALDWELL
HOUSTON

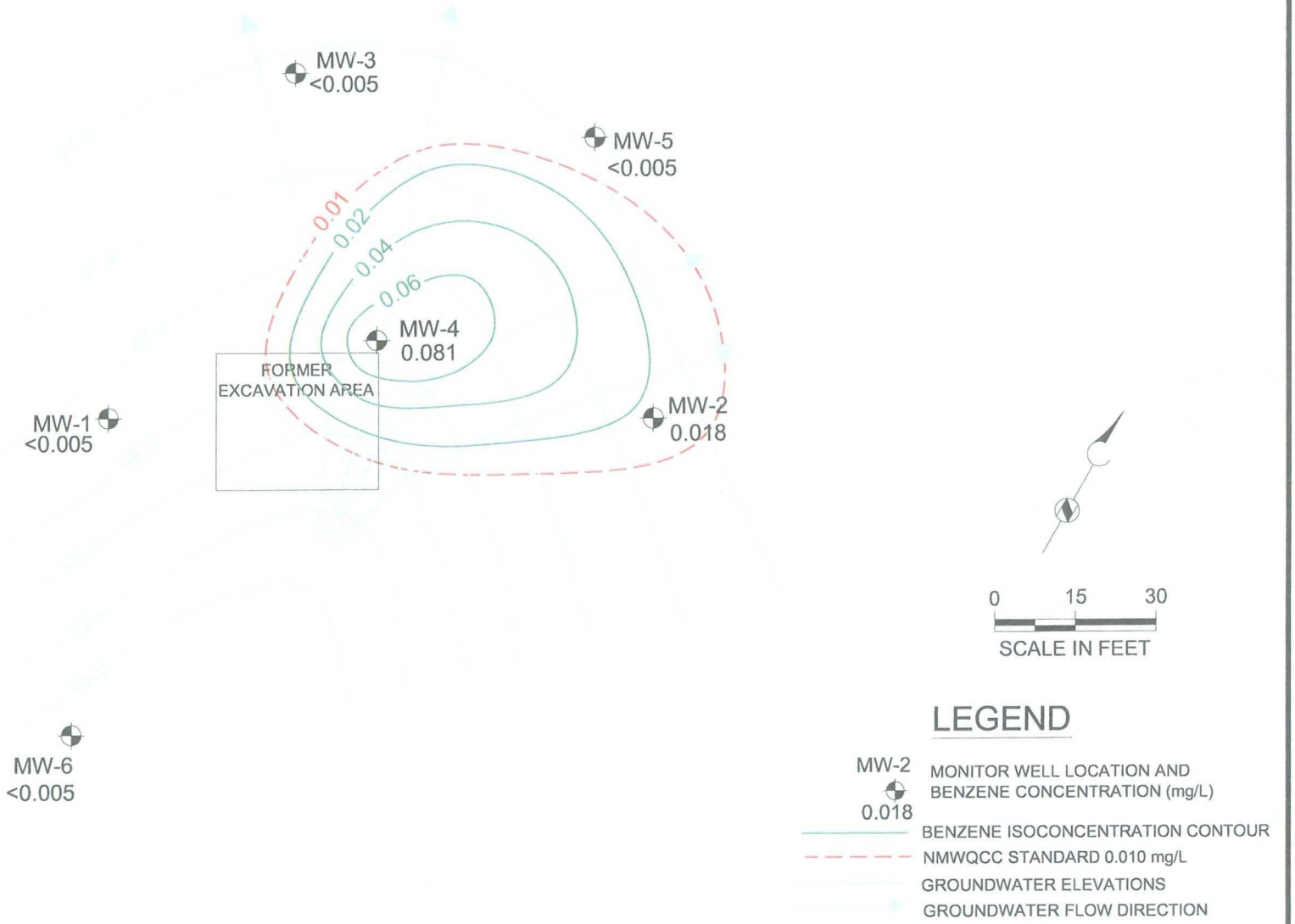
GROUNDWATER ELEVATION MAP: MAY 2, 2009 BJ SERVICES FRACMASTER-FACILITY

PROJECT LOCATION

BJ SERVICES COMPANY, U.S.A.
1329 N. WEST COUNTY ROAD
HOBBS, NEW MEXICO

0 15 30
SCALE IN FEET

FIGURE 3



DATE	PROJECT NUMBER
6/10/2009	128125

BROWN AND CALDWELL
HOUSTON

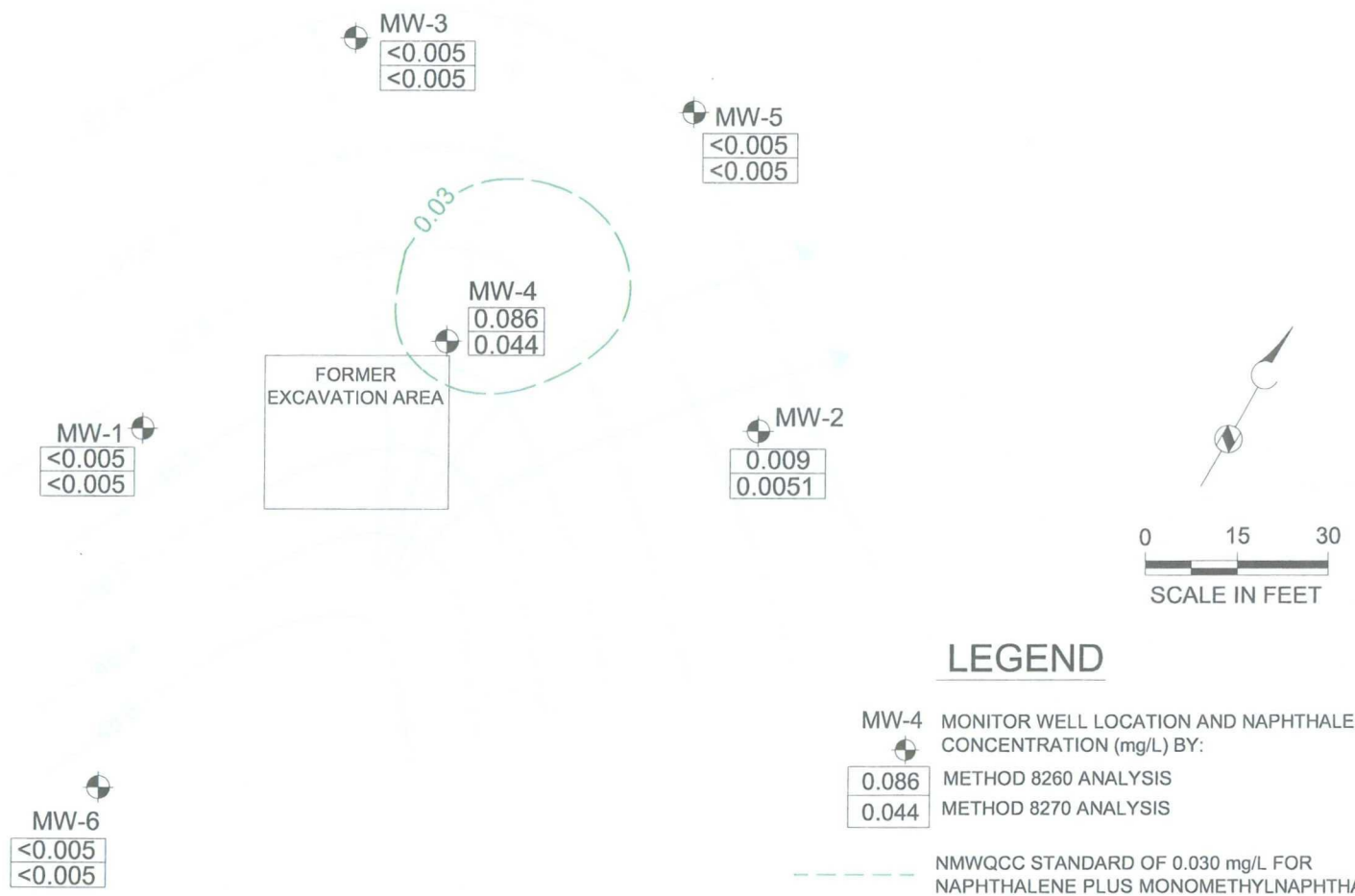
BENZENE CONCENTRATIONS IN GROUNDWATER: APRIL-MAY, 2009 BJ SERVICES FRACMASTER-FACILITY

PROJECT LOCATION

BJ SERVICES COMPANY, U.S.A.
1329 N. WEST COUNTY ROAD
HOBBS, NEW MEXICO

0 15 30
SCALE IN FEET

FIGURE 4



LEGEND

MW-4 MONITOR WELL LOCATION AND NAPHTHALENE CONCENTRATION (mg/L) BY:

0.086 METHOD 8260 ANALYSIS

0.044 METHOD 8270 ANALYSIS

NMWQCC STANDARD OF 0.030 mg/L FOR NAPHTHALENE PLUS MONOMETHYLNAPHTHALENES

GROUNDWATER ELEVATIONS

GROUNDWATER FLOW DIRECTION

NOTES:
2-METHYLNAPHTHALENE DETECTED AT 0.027 mg/L IN MW-4;
NO OTHER DETECTIONS OF MONOMETHYLNAPHTHALENES.

DATE	PROJECT NUMBER
6/10/2009	128125

BROWN AND CALDWELL
HOUSTON

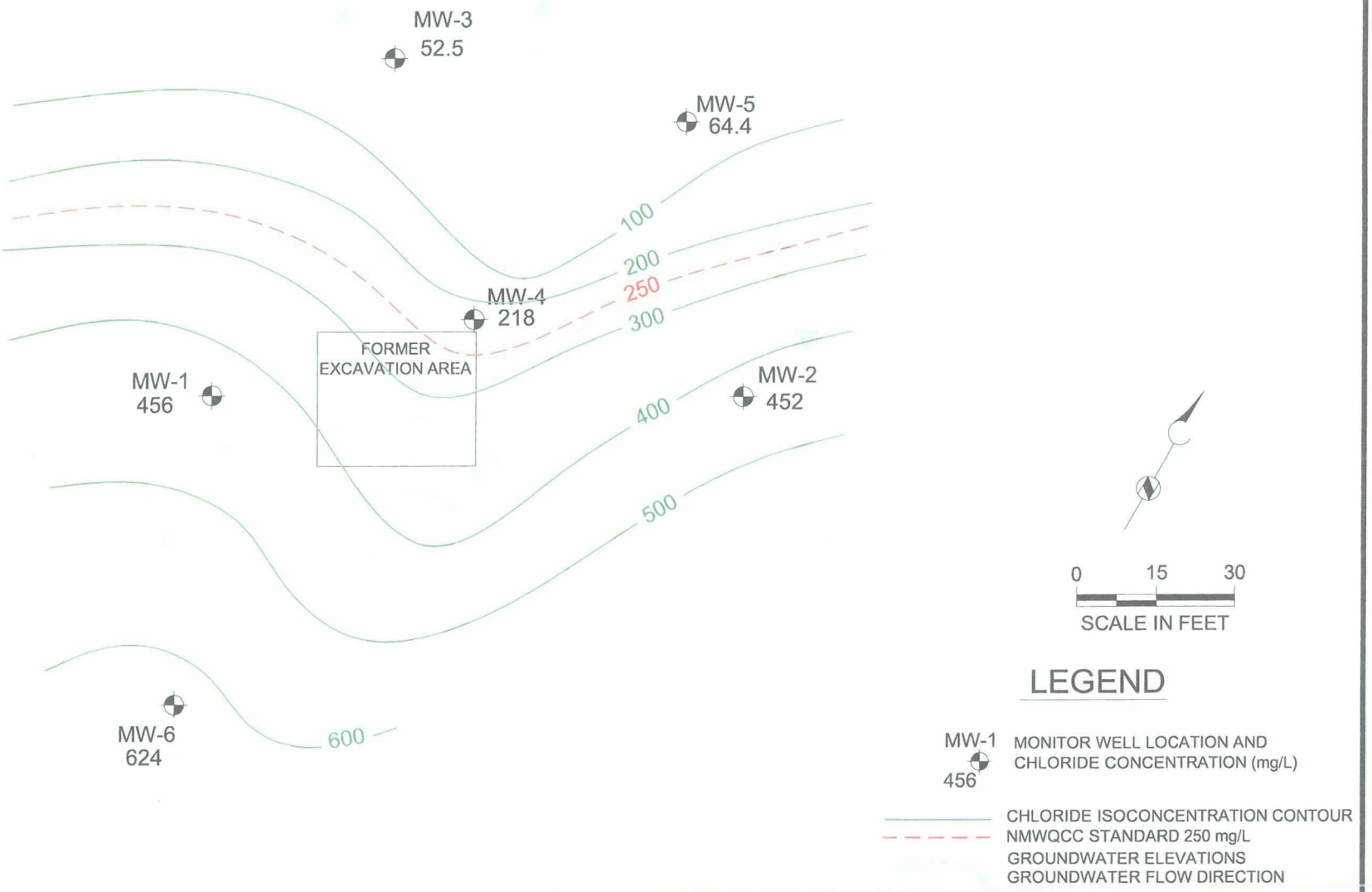
NAPHTHALENE CONCENTRATIONS IN GROUNDWATER: APRIL-MAY, 2009 BJ SERVICES FRACMASTER-FACILITY

PROJECT LOCATION

BJ SERVICES COMPANY, U.S.A.
1329 N. WEST COUNTY ROAD
HOBBS, NEW MEXICO

0 15 30
SCALE IN FEET

FIGURE 5



DATE	PROJECT NUMBER
6/26/2009	128125

BROWN AND CALDWELL
HOUSTON

CHLORIDE CONCENTRATIONS IN GROUNDWATER: APRIL-MAY, 2009 BJ SERVICES FRACMASTER-FACILITY

PROJECT LOCATION
BJ SERVICES COMPANY, U.S.A.
1329 N. WEST COUNTY ROAD
HOBBS, NEW MEXICO

0 15 30
SCALE IN FEET

FIGURE
6

TABLES

Table 1
Groundwater Elevation Data
BJ Services FracMaster Facility
Hobbs, New Mexico

Well Number	Date	Top-of-Casing Elevation (ft)[1]	Depth to Groundwater (ft)	Groundwater Elevation (ft)[1]	Depth to Product	Product Thickness
MW-1	5/2/09	103.21	55.40	47.81	-	-
MW-2	5/2/09	102.05	54.50	47.55	-	-
MW-3	5/2/09	102.41	54.95	47.46	-	-
MW-4	5/2/09	102.21	54.26	47.95	-	-
MW-5	5/2/09	102.41	55.05	47.36	-	-
MW-6	5/2/09	102.48	53.69	48.79	-	-

[1] - Relative to an arbitrary site datum of 100.00 feet

Table 2
Groundwater Geochemical Data
BJ Services FracMaster Facility
Hobbs, New Mexico

Well Number	Sample Date	pH (std. units)	Specific Conductivity (µs/cm)	Oxidation-Reduction Potential (mv)	Dissolved Oxygen (mg/L)		Ferrous Iron (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Methane (mg/L)	Alkalinity (mg/L)
					YSI Meter	Hach Test					
MW-1	4/7/09	7.15	2.059	-4.7	4.73	1.4	2.2	4	128	0.0014	198
MW-2	4/7/09	6.69	2.057	-72.1	3.78	0.8	2.2	0.564	5.25	0.23	585
MW-3	4/8/09	7.80	0.547	14.0	1.92	0.6	0	<0.5	83.6	<0.0012	174
MW-4	5/2/09	6.72	1.938	-128	0.54	0.4	0.0	0.553	46.4	<0.0012	477
MW-5	4/9/09	8.04	0.583	-56.9	3.46	0	NM[(1)]	<0.5	89	0.0039	195
MW-6	5/1/09	6.77	2.330	72	8.79	9.2	0.0	<0.5	91.9	<0.0012	192

[(1)] - NM = Not Measured

Table 3
Analytical Results[1] for Soil Samples
April-May 2009 Sampling Event
BJ Services FracMaster Facility
Hobbs, New Mexico

Parameter	Sample ID / Sample Depth (ft. below grade)			
	MW4-52-55	MW-5-50-51	MW-5-54-55	MW-6-54-55
	52-55	50-51	54-55	54-55
VOCs	ND[2]	ND	NA	ND
SVOCs	ND	NA[3]	ND	ND
TPH-D	6.3	NA	36	12
TPH-G	<0.1	<0.1	NA	<0.1
TPH-M	<10	NA	<10	<10
Alkalinity[4]	NA	NA	NA	190
Chloride	NA	NA	NA	61.1
Fluoride	NA	NA	NA	<5
Nitrate	NA	NA	NA	<5
Nitrite	NA	NA	NA	<5
Sulfate	NA	NA	NA	20.2
Arsenic	NA	NA	NA	1.2
Barium	NA	NA	NA	85.7
Cadmium	NA	NA	NA	<0.5
Calcium	NA	NA	NA	39600
Chromium	NA	NA	NA	4.03
Lead	NA	NA	NA	1.51
Magnesium	NA	NA	NA	1520
Mercury	NA	NA	NA	<0.03
Selenium	NA	NA	NA	<0.5
Silver	NA	NA	NA	<0.5
Sodium	NA	NA	NA	125

[1] - in milligrams per kilogram (mg/kg).
[2] - ND indicates none detected.
[3] - NA indicates not analyzed.
[4] - Bicarbonate alkalinity.

Table 4
Analytical Results[1] for Detected Constituents in Groundwater Samples
April-May 2009 Sampling Event
BJ Services FracMaster Facility
Hobbs, New Mexico

Analytes	NMWQCC Standard (mg/L)	Monitor Well / Sample Date					
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
		4/7/09	4/7/09	4/8/09	5/2/09	4/9/09	5/1/09
VOCs							
1,2,4-Trimethylbenzene	NL[2]	<0.005	0.063	<0.005	0.440	<0.005	<0.005
1,3,5-Trimethylbenzene	NL	<0.005	<0.005	<0.005	0.019	<0.005	<0.005
4-Isopropyltoluene	NL	<0.005	<0.005	<0.005	0.0096	<0.005	<0.005
Benzene	0.01	<0.005	**0.018**	<0.005	**0.081**	<0.005	<0.005
Ethylbenzene	0.75	<0.005	0.024	<0.005	0.530	<0.005	<0.005
Isopropylbenzene	NL	<0.005	<0.005	<0.005	0.041	<0.005	<0.005
Naphthalene	0.03[3]	<0.005	0.009	<0.005	**0.086**	<0.005	<0.005
n-Butylbenzene	NL	<0.005	<0.005	<0.005	0.028	<0.005	<0.005
n-Propylbenzene	NL	<0.005	<0.005	<0.005	0.045	<0.005	<0.005
sec-Butylbenzene	NL	<0.005	<0.005	<0.005	0.018	<0.005	<0.005
m,p-Xylene	NL	<0.005	0.110	<0.005	0.730	<0.005	<0.005
o-Xylene	NL	<0.005	0.026	<0.005	0.220	<0.005	<0.005
Xylenes, Total	0.62	<0.005	0.136	<0.005	0.950	<0.005	<0.005
SVOCs							
Di-n-butyl phthalate	NL	<0.005	<0.005	<0.005	0.0083	<0.005	0.011
2-Methylnaphthalene	0.03[3]	<0.005	<0.005	<0.005	0.027	<0.005	<0.005
Naphthalene	0.03[3]	<0.005	0.0051	<0.005	**0.044**	<0.005	<0.005
TPH-G	NL	<0.1	0.64	<0.1	4.7	<0.1	<0.1
TPH-D	NL	<0.1	2.3	<0.1	2.4	0.14	0.21
TPH-M	NL	<0.1	<0.1	<0.1	2.1	<0.1	<0.1
Chloride	250	**456**	**452**	52.5	218	64.4	**624**

[1] - in milligrams per liter (mg/L)
[2] - NL = Not Listed
[3] - Total naphthalene plus monomethylnaphthalenes

Table 5
Current and Historic Analytical Results[1] for Detected Constituents in Groundwater Samples
BJ Services FracMaster Facility
Hobbs, New Mexico

Analytes	NMWQCC Standard (mg/L)	Monitor Well / Sample Date					
		MW-1		MW-2		MW-3	
		2/23/06	4/7/09	2/23/06	4/7/09	2/23/06	4/8/09
VOCs							
1,2,4-Trimethylbenzene	NL[2]	<0.005	<0.005	0.019	0.063	<0.005	<0.005
Benzene	0.01	<0.005	<0.005	<0.005	**0.018**	<0.005	<0.005
Ethylbenzene	0.75	<0.005	<0.005	<0.005	0.024	<0.005	<0.005
Naphthalene	0.03[3]	<0.005	<0.005	0.006	0.009	<0.005	<0.005
m,p-Xylene	NL	<0.005	<0.005	0.056	0.110	<0.005	<0.005
o-Xylene	NL	<0.005	<0.005	<0.005	0.026	<0.005	<0.005
Xylenes, Total	0.62	<0.005	<0.005	0.056	0.136	<0.005	<0.005
SVOCs							
Naphthalene	0.03[3]	<0.005	<0.005	<0.005	0.0051	<0.005	<0.005
TPH-G	NL	<0.1	<0.1	0.19	0.64	<0.1	<0.1
TPH-D	NL	<1.0	<0.1	<1.0	2.3	<1.0	<0.1
TPH-M	NL	NM[4]	<0.1	NM	<0.1	NM	<0.1
Chloride	250	**1070**	**456**	**512**	**452**	66.6	52.5

[1] - in milligrams per liter (mg/L)
[2] - NL = Not Listed
[3] - Total naphthalene plus monomethylnaphthalenes
[4] - NM = Not Measured

APPENDICES

APPENDIX A

Boring Logs and Monitor Well Construction Diagrams:
Monitor Wells MW-4, MW-5, and MW-6

BROWN AND CALDWELL

Monitoring Well: **MW-4**

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: **128125** Sheet **1** of **2**

Project Location: **Hobbs, NM**		Logged By: **R. Banda**	Checked By: **R.Rexroad**
Drilling Contractor: **TSS**		Date Started: **5/1/09**	Date Finished: **5/1/09**
Drilling Equipment: **B-59**	Driller: **C. Perryman**	Total Boring Depth: (feet) **61.0**	Depth to Static Water: (feet)
Drilling Method: **Hollow Stem Auger**	Borehole Diameter: **8"**	TOC Elevation:	Ground Elevation: **102.21**
Sampling Method: **Split Spoon**		Diameter and Type of Well Casing: **2 Schedule 40 PVC**	
Comments:		Slot Size: **0.010**	Filter Material: **20/40**
		Development Method: **Submersible Pump**	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
2				Gravel, Sand, Silt, etc.					3X3 Above-grade completion.
4									
6		SP		SAND (SP); Tan; dry; 1/4" gravels					
8									
10									
12									
14									
16				Pinkish tan; very fine to medium grained, <1/4" lithified sandstone nodules, few gravel					
18									
20				Pinkish brown; moist					Bentonite Seal
22									
24									
26									
28									

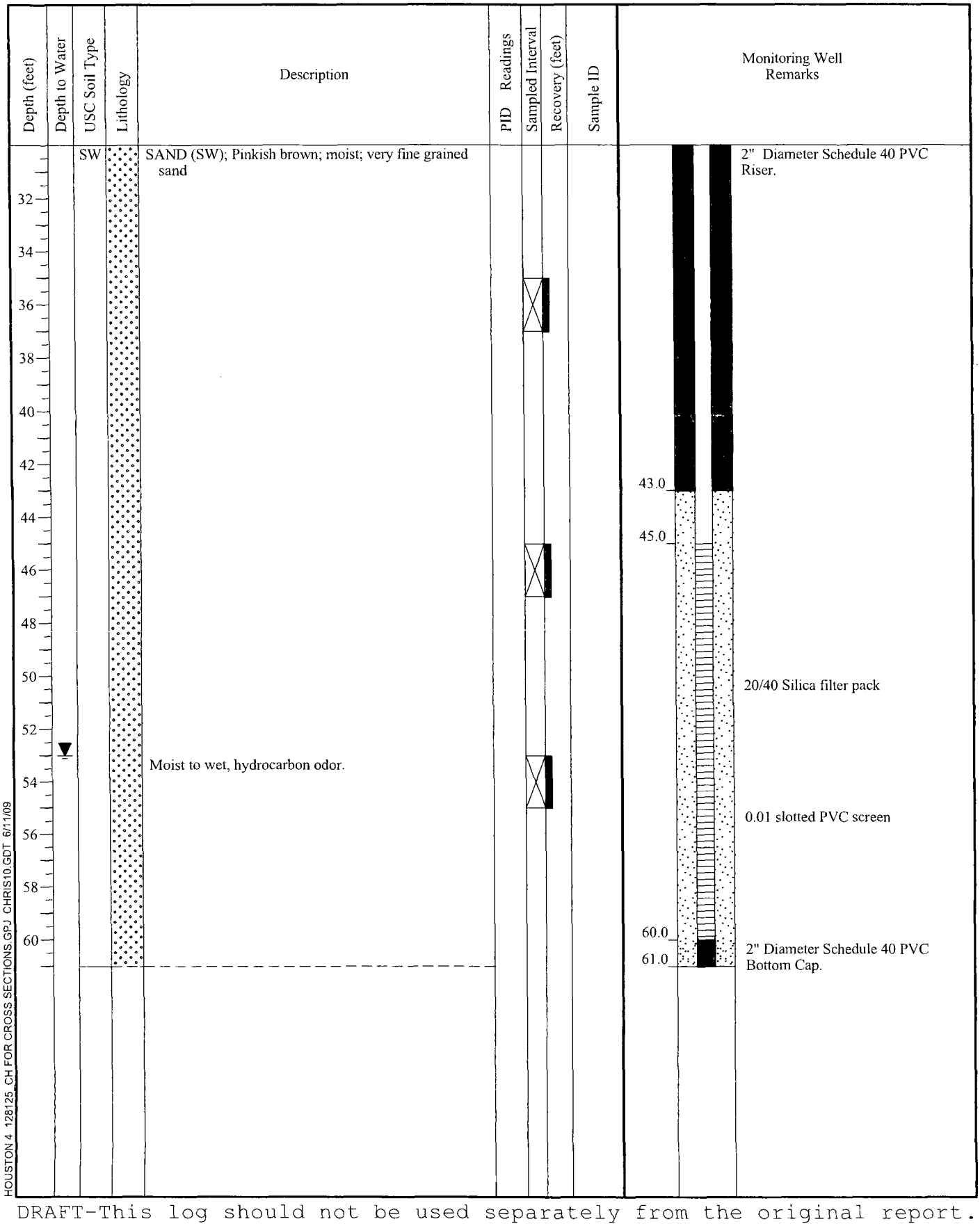
HOUSTON 4 128125_CH FOR CROSS SECTIONS.GPJ CHRIS10.GDT 6/11/09

DRAFT-This log should not be used separately from the original report.

BROWN AND CALDWELL

Monitoring Well: **MW-4**

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: **128125** Sheet **2** of **2**



HOUSTON 4 128125_CH FOR CROSS SECTIONS.GPJ CHRIS10.GDT 6/11/09

DRAFT-This log should not be used separately from the original report.

BROWN AND CALDWELL

Monitoring Well: **MW-5**

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: **128125** Sheet **1** of **2**

Project Location: **Hobbs, NM**		Logged By: **R. Rexroad**	Checked By: **L. Teague**
Drilling Contractor: **Geoprojects International**		Date Started: **4/7/09**	Date Finished: **4/7/09**
Drilling Equipment: **B-59**	Driller: **C. Perryman**	Total Boring Depth: (feet) **61.0**	Depth to Static Water: (feet)
Drilling Method: **Hollow Stem Auger**	Borehole Diameter: **8"**	TOC Elevation:	Ground Elevation: **102.41**
Sampling Method: **Split Spoon**		Diameter and Type of Well Casing: **2 Schedule 40**	
Comments:		Slot Size: **0.010**	Filter Material: **20/40**
		Development Method: **Submersible Pump**	

Depth (feet)	USC Soil Type	Description	Monitoring Well Remarks
0	SM	SILTY SAND (SM); Light brown; dry; very fine to fine grained sand	3X3 Above-grade completion.
10	SP	SAND (SP); Light tan; very fine to fine grained sand; poorly sorted	
14		Sand is mostly quartz with <5% feldspar(pink, fine to medium grained)	
20		Pinkish mostly fine to (40%) medium quartz sand; scattered (<1%) dark materials; slightly moist; 1-2% feldspars	Bentonite Seal
28		SANDSTONE	
	SP	SAND (SP); very fine to fine grained sand	

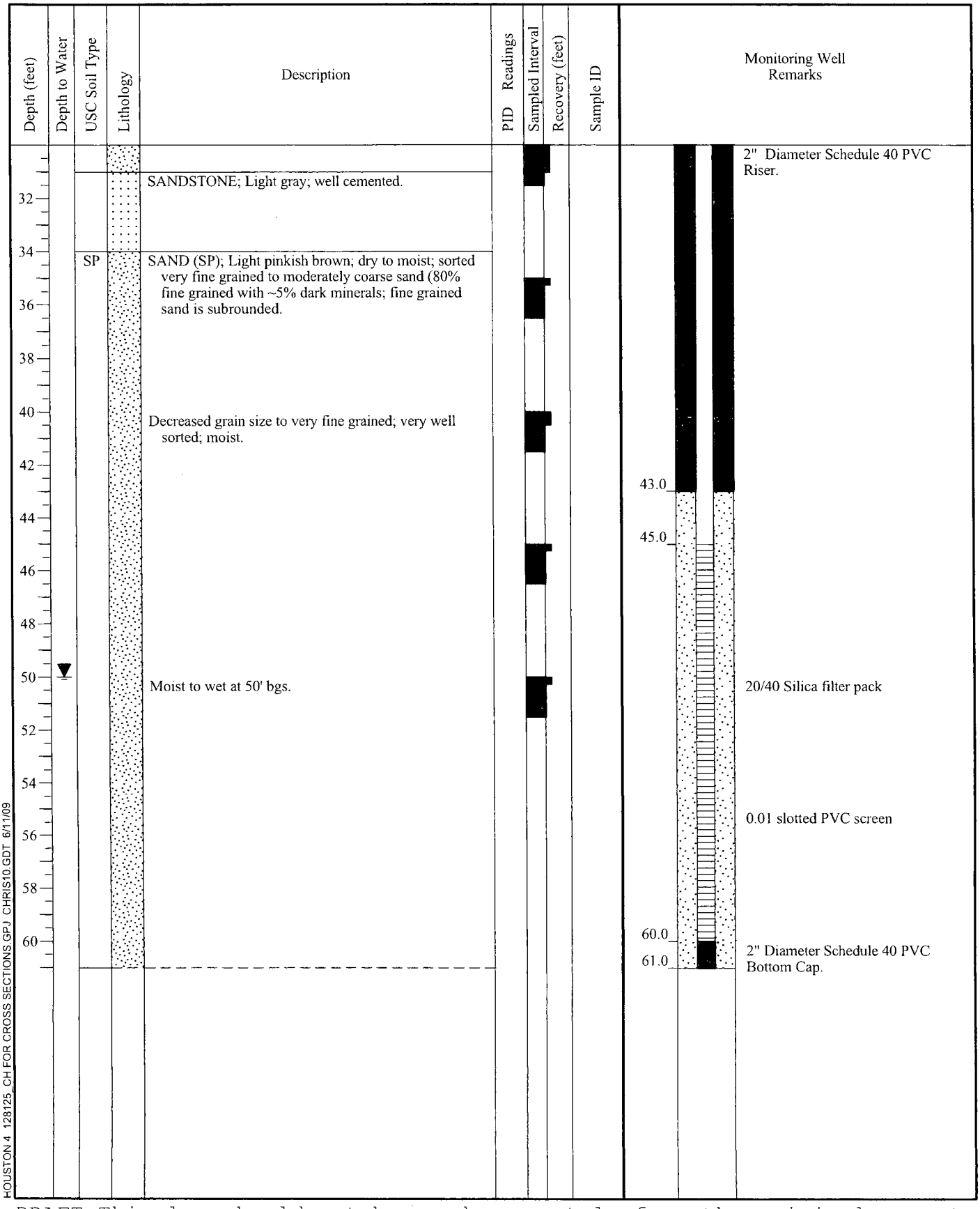
HOUSTON 4 128125_CH FOR CROSS SECTIONS.GPJ CHRIS10.GDT 6/11/09

DRAFT-This log should not be used separately from the original report.

BROWN AND CALDWELL

Monitoring Well: **MW-5**

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: **128125** Sheet **2** of **2**



HOUSTON 4 128125_CH FOR CROSS SECTIONS.GPJ CHRIS10.GDT 6/11/09

DRAFT-This log should not be used separately from the original report.

BROWN AND CALDWELL

Monitoring Well: **MW-6**

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: **128125** Sheet **1** of **2**

Project Location: **Hobbs, NM**		Logged By: **R. Banda**	Checked By: **R.Rexroad**
Drilling Contractor: **TSS**		Date Started: **4/30/09**	Date Finished: **4/30/09**
Drilling Equipment: **B-59**	Driller: **C. Perryman**	Total Boring Depth: (feet) **65.0**	Depth to Static Water: (feet) **55.00**
Drilling Method: **Hollow Stem Auger**	Borehole Diameter: **8"**	TOC Elevation:	Ground Elevation: **102.48**
Sampling Method: **Corebarrel**		Diameter and Type of Well Casing: **2 Schedule 40**	
Comments:		Slot Size: **0.010**	Filter Material: **20/40**
		Development Method: **Submersible Pump**	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
0		SM		SILTY SAND; Gray; dry					3X3 Above-grade completion.
2									
4				Tan; dry; Limestone, very dense, strong reaction to acid test.					
6									
8									
10									
12				Pinkish white; Med. density; dry; Caliche, 1/4" gravels					
14		SP		SAND (SP); Pinkish tan; dry to moist; .25-.5" gravels(sandstone), fine to medium grained sand					
16									
18									
20									Bentonite Seal
22									
24									
26									
28									

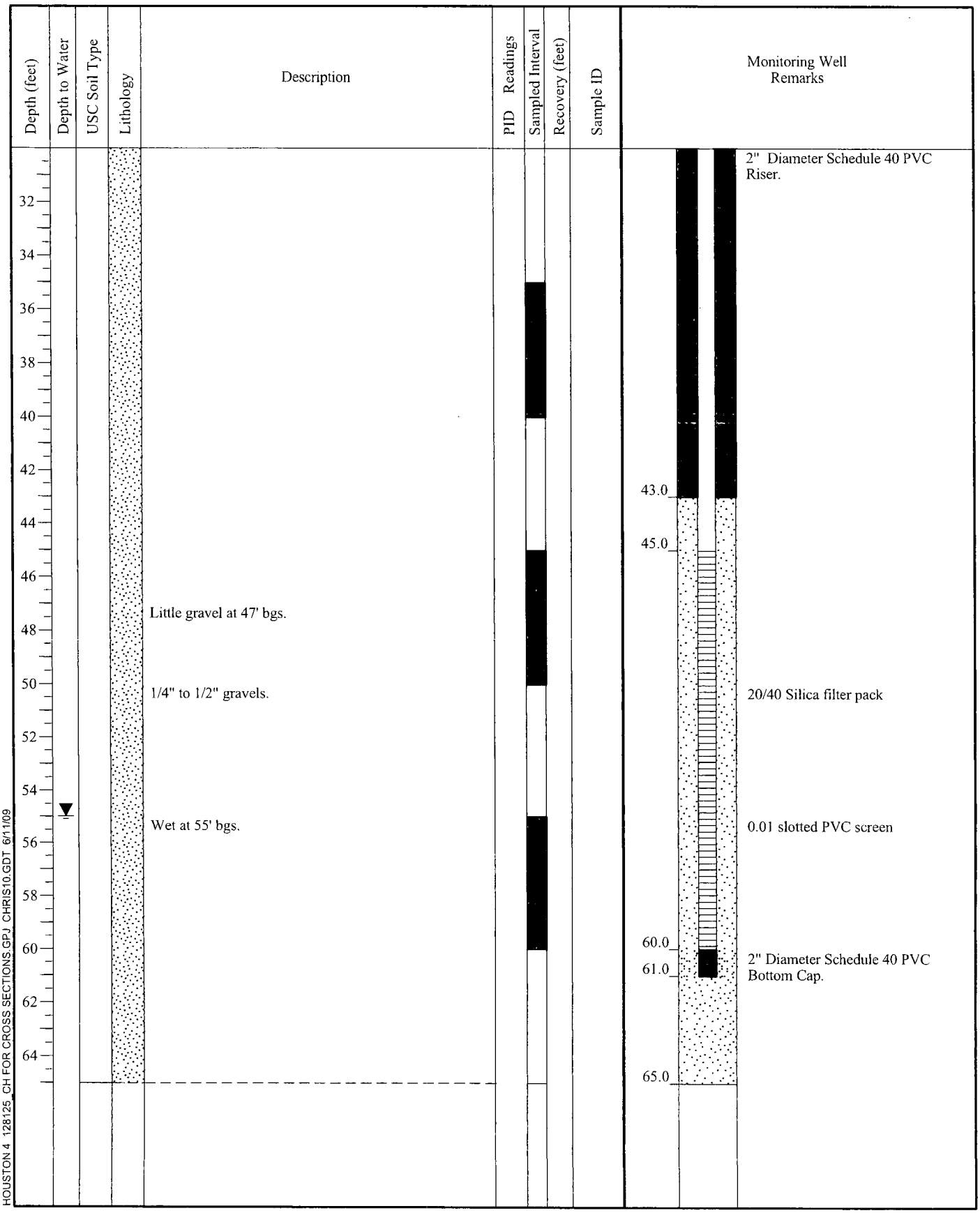
HOUSTON 4 128125 CH FOR CROSS SECTIONS.GPJ CHRIS10.GDT 6/11/09

DRAFT-This log should not be used separately from the original report.

BROWN AND CALDWELL

Monitoring Well: **MW-6**

Project Name: **BJ Services Company, U.S.A. - Fracmaster Facility** Project Number: **128125** Sheet **2** of **2**



HOUSTON 4 128125_CH FOR CROSS SECTIONS.GPJ CHRIS10.GDT 6/11/09

DRAFT-This log should not be used separately from the original report.

APPENDIX B

Laboratory Analytical Reports

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09040281

Report To:		Project Name:	Fracmaster BJ Service,#128125
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	4/23/2009
ph: (713) 759-0999	fax:		

This Report Contains A Total Of 45 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

4/23/2009

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09040281

Report To:		Project Name:	Fracmaster BJ Service,#128125
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	4/23/2009
ph: (713) 759-0999	fax:		

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

For Volatile Organics analysis (8260B), the results for 2-chloroethyl vinyl ether are estimated due to sample preservation. The result for this compound is reported as "ND J" for all samples in the report.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 89427 for the Semivolatile Hydrocarbons analysis by Method 8015B. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID:89412 for the Semivolatile Organics analysis by SW846 Method 8270C. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Your sample ID "FB-4-7-09" (SPL ID:09040281-03) was randomly selected for use in SPL's quality control program for the Volatile Organics analysis by SW846 Method 8260B (Batch ID:270264). The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries were outside of the advisable quality control limits due to possible matrix interference for the following analytes:

2-Chloroethyl vinyl ether
n-Butylbenzene

A Laboratory Control Sample (LCS) was analyzed as a quality control check for the analytical batch and all recoveries were within acceptable limits.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

Agnes V. Vicknair

4/23/2009

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09040281

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Agnes V. Vicknair

4/23/2009

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09040281

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To:

Project Name: Fracmaster BJ Service,#128125
Site: Hobbs NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 4/23/2009

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW5-50-51	09040281-01	Soil	4/7/2009 11:26:00 AM	4/9/2009 10:00:00 AM	322328	☐
MW-2	09040281-02	Water	4/7/2009 11:44:00 AM	4/9/2009 10:00:00 AM	322329	☐
FB-4-7-09	09040281-03	Water	4/7/2009 12:43:00 PM	4/9/2009 10:00:00 AM	322329	☐
TB-4-7-09	09040281-04	Water	4/7/2009 12:46:00 PM	4/9/2009 10:00:00 AM	322329	☐

Agnes V. Vicknair
Project Manager

4/23/2009
Date

Kesavalu M. Bagawandoss
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW5-50-51 **Collected:** 04/07/2009 11:26 **SPL Sample ID:** 09040281-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			**MCL**	**SW8015B**	**Units: mg/Kg**		
Gasoline Range Organics	ND		0.1	1	04/14/09 5:51	EMB	4985034
Surr: 1,4-Difluorobenzene	95.8		% 63-142	1	04/14/09 5:51	EMB	4985034
Surr: 4-Bromofluorobenzene	98.0		% 50-159	1	04/14/09 5:51	EMB	4985034

Prep Method	Prep Date	Prep Initials	Prep Factor
SW5030B	04/13/2009 11:53	XML	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW5-50-51 **Collected:** 04/07/2009 11:26 **SPL Sample ID:** 09040281-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/kg**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/13/09 18:26	E_G	4983601
1,1,1-Trichloroethane	ND		5	1	04/13/09 18:26	E_G	4983601
1,1,2,2-Tetrachloroethane	ND		5	1	04/13/09 18:26	E_G	4983601
1,1,2-Trichloroethane	ND		5	1	04/13/09 18:26	E_G	4983601
1,1-Dichloroethane	ND		5	1	04/13/09 18:26	E_G	4983601
1,1-Dichloroethene	ND		5	1	04/13/09 18:26	E_G	4983601
1,1-Dichloropropene	ND		5	1	04/13/09 18:26	E_G	4983601
1,2,3-Trichlorobenzene	ND		5	1	04/13/09 18:26	E_G	4983601
1,2,3-Trichloropropane	ND		5	1	04/13/09 18:26	E_G	4983601
1,2,4-Trichlorobenzene	ND		5	1	04/13/09 18:26	E_G	4983601
1,2,4-Trimethylbenzene	ND		5	1	04/13/09 18:26	E_G	4983601
1,2-Dibromo-3-chloropropane	ND		5	1	04/13/09 18:26	E_G	4983601
1,2-Dibromoethane	ND		5	1	04/13/09 18:26	E_G	4983601
1,2-Dichlorobenzene	ND		5	1	04/13/09 18:26	E_G	4983601
1,2-Dichloroethane	ND		5	1	04/13/09 18:26	E_G	4983601
1,2-Dichloropropane	ND		5	1	04/13/09 18:26	E_G	4983601
1,3,5-Trimethylbenzene	ND		5	1	04/13/09 18:26	E_G	4983601
1,3-Dichlorobenzene	ND		5	1	04/13/09 18:26	E_G	4983601
1,3-Dichloropropane	ND		5	1	04/13/09 18:26	E_G	4983601
1,4-Dichlorobenzene	ND		5	1	04/13/09 18:26	E_G	4983601
2,2-Dichloropropane	ND		5	1	04/13/09 18:26	E_G	4983601
2-Butanone	ND		20	1	04/13/09 18:26	E_G	4983601
2-Chloroethyl vinyl ether	ND		10	1	04/13/09 18:26	E_G	4983601
2-Chlorotoluene	ND		5	1	04/13/09 18:26	E_G	4983601
2-Hexanone	ND		10	1	04/13/09 18:26	E_G	4983601
4-Chlorotoluene	ND		5	1	04/13/09 18:26	E_G	4983601
4-Isopropyltoluene	ND		5	1	04/13/09 18:26	E_G	4983601
4-Methyl-2-pentanone	ND		10	1	04/13/09 18:26	E_G	4983601
Acetone	ND		100	1	04/13/09 18:26	E_G	4983601
Acrylonitrile	ND		50	1	04/13/09 18:26	E_G	4983601
Benzene	ND		5	1	04/13/09 18:26	E_G	4983601
Bromobenzene	ND		5	1	04/13/09 18:26	E_G	4983601
Bromochloromethane	ND		5	1	04/13/09 18:26	E_G	4983601
Bromodichloromethane	ND		5	1	04/13/09 18:26	E_G	4983601
Bromoform	ND		5	1	04/13/09 18:26	E_G	4983601
Bromomethane	ND		10	1	04/13/09 18:26	E_G	4983601
Carbon disulfide	ND		5	1	04/13/09 18:26	E_G	4983601
Carbon tetrachloride	ND		5	1	04/13/09 18:26	E_G	4983601
Chlorobenzene	ND		5	1	04/13/09 18:26	E_G	4983601

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW5-50-51 **Collected:** 04/07/2009 11:26 **SPL Sample ID:** 09040281-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/13/09 18:26	E_G	4983601
Chloroform	ND		5	1	04/13/09 18:26	E_G	4983601
Chloromethane	ND		10	1	04/13/09 18:26	E_G	4983601
Dibromochloromethane	ND		5	1	04/13/09 18:26	E_G	4983601
Dibromomethane	ND		5	1	04/13/09 18:26	E_G	4983601
Dichlorodifluoromethane	ND		10	1	04/13/09 18:26	E_G	4983601
Ethylbenzene	ND		5	1	04/13/09 18:26	E_G	4983601
Hexachlorobutadiene	ND		5	1	04/13/09 18:26	E_G	4983601
Isopropylbenzene	ND		5	1	04/13/09 18:26	E_G	4983601
Methyl tert-butyl ether	ND		5	1	04/13/09 18:26	E_G	4983601
Methylene chloride	ND		5	1	04/13/09 18:26	E_G	4983601
Naphthalene	ND		5	1	04/13/09 18:26	E_G	4983601
n-Butylbenzene	ND		5	1	04/13/09 18:26	E_G	4983601
n-Propylbenzene	ND		5	1	04/13/09 18:26	E_G	4983601
sec-Butylbenzene	ND		5	1	04/13/09 18:26	E_G	4983601
Styrene	ND		5	1	04/13/09 18:26	E_G	4983601
tert-Butylbenzene	ND		5	1	04/13/09 18:26	E_G	4983601
Tetrachloroethene	ND		5	1	04/13/09 18:26	E_G	4983601
Toluene	ND		5	1	04/13/09 18:26	E_G	4983601
Trichloroethene	ND		5	1	04/13/09 18:26	E_G	4983601
Trichlorofluoromethane	ND		5	1	04/13/09 18:26	E_G	4983601
Vinyl acetate	ND		10	1	04/13/09 18:26	E_G	4983601
Vinyl chloride	ND		10	1	04/13/09 18:26	E_G	4983601
cis-1,2-Dichloroethene	ND		5	1	04/13/09 18:26	E_G	4983601
cis-1,3-Dichloropropene	ND		5	1	04/13/09 18:26	E_G	4983601
m,p-Xylene	ND		5	1	04/13/09 18:26	E_G	4983601
o-Xylene	ND		5	1	04/13/09 18:26	E_G	4983601
trans-1,2-Dichloroethene	ND		5	1	04/13/09 18:26	E_G	4983601
trans-1,3-Dichloropropene	ND		5	1	04/13/09 18:26	E_G	4983601
Xylenes,Total	ND		5	1	04/13/09 18:26	E_G	4983601
1,2-Dichloroethene (total)	ND		5	1	04/13/09 18:26	E_G	4983601
Surr: 1,2-Dichloroethane-d4	98.0		% 64-115	1	04/13/09 18:26	E_G	4983601
Surr: 4-Bromofluorobenzene	100		% 65-131	1	04/13/09 18:26	E_G	4983601
Surr: Toluene-d8	104		% 75-136	1	04/13/09 18:26	E_G	4983601

Prep Method	Prep Date	Prep Initials	Prep Factor
SW5030B	04/13/2009 11:56	E_G	1.00

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TNTC - Too numerous to count
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MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-2 **Collected:** 04/07/2009 11:44 **SPL Sample ID:** 09040281-02

Site: Hobbs NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
ALKALINITY (AS CACO3), TOTAL					**MCL**	**E310.1**	**Units: mg/L**	
Alkalinity, Total (As CaCO3)	585			2	1	04/13/09 11:20	PAC	4982663
GASOLINE RANGE ORGANICS					**MCL**	**SW8015B**	**Units: mg/L**	
Gasoline Range Organics	0.64			0.5	5	04/13/09 17:18	CLJ	4984673
Surr: 1,4-Difluorobenzene	93.1		%	60-155	5	04/13/09 17:18	CLJ	4984673
Surr: 4-Bromofluorobenzene	106		%	50-158	5	04/13/09 17:18	CLJ	4984673
HEADSPACE GAS ANALYSIS					**MCL**	**RSK147**	**Units: mg/L**	
Methane	0.23			0.0024	2	04/20/09 15:19	V_L	4990878
ION CHROMATOGRAPHY					**MCL**	**E300.0**	**Units: mg/L**	
Chloride	452			25	50	04/14/09 22:35	BDG	4985117
Sulfate	5.25			0.5	1	04/09/09 11:26	BDG	4984922
Nitrogen,Nitrate (As N)	0.564			0.5	1	04/09/09 11:26	BDG	4984859
SEMIVOLATILE HYDROCARBONS					**MCL**	**SW8015B**	**Units: mg/L**	
Diesel Range Organics	2.3			0.1	1	04/17/09 0:20	NW	4987514
Mineral Spirits Range Organics	ND			0.1	1	04/17/09 0:20	NW	4987514
Surr: n-Pentacosane	40.2		%	20-150	1	04/17/09 0:20	NW	4987514

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 14:10	N_M	1.00

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E - Estimated Value exceeds calibration curve
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-2 **Collected:** 04/07/2009 11:44 **SPL Sample ID:** 09040281-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	04/22/09 12:55	GY	4992753
1,2-Dichlorobenzene	ND		5	1	04/22/09 12:55	GY	4992753
1,2-Diphenylhydrazine	ND		10	1	04/22/09 12:55	GY	4992753
1,3-Dichlorobenzene	ND		5	1	04/22/09 12:55	GY	4992753
1,4-Dichlorobenzene	ND		5	1	04/22/09 12:55	GY	4992753
2,4,5-Trichlorophenol	ND		10	1	04/22/09 12:55	GY	4992753
2,4,6-Trichlorophenol	ND		5	1	04/22/09 12:55	GY	4992753
2,4-Dichlorophenol	ND		5	1	04/22/09 12:55	GY	4992753
2,4-Dimethylphenol	ND		5	1	04/22/09 12:55	GY	4992753
2,4-Dinitrophenol	ND		25	1	04/22/09 12:55	GY	4992753
2,4-Dinitrotoluene	ND		5	1	04/22/09 12:55	GY	4992753
2,6-Dinitrotoluene	ND		5	1	04/22/09 12:55	GY	4992753
2-Chloronaphthalene	ND		5	1	04/22/09 12:55	GY	4992753
2-Chlorophenol	ND		5	1	04/22/09 12:55	GY	4992753
2-Methylnaphthalene	ND		5	1	04/22/09 12:55	GY	4992753
2-Nitroaniline	ND		25	1	04/22/09 12:55	GY	4992753
2-Nitrophenol	ND		5	1	04/22/09 12:55	GY	4992753
3,3'-Dichlorobenzidine	ND		10	1	04/22/09 12:55	GY	4992753
3-Nitroaniline	ND		25	1	04/22/09 12:55	GY	4992753
4,6-Dinitro-2-methylphenol	ND		25	1	04/22/09 12:55	GY	4992753
4-Bromophenyl phenyl ether	ND		5	1	04/22/09 12:55	GY	4992753
4-Chloro-3-methylphenol	ND		5	1	04/22/09 12:55	GY	4992753
4-Chloroaniline	ND		5	1	04/22/09 12:55	GY	4992753
4-Chlorophenyl phenyl ether	ND		5	1	04/22/09 12:55	GY	4992753
4-Nitroaniline	ND		25	1	04/22/09 12:55	GY	4992753
4-Nitrophenol	ND		25	1	04/22/09 12:55	GY	4992753
Acenaphthene	ND		5	1	04/22/09 12:55	GY	4992753
Acenaphthylene	ND		5	1	04/22/09 12:55	GY	4992753
Aniline	ND		5	1	04/22/09 12:55	GY	4992753
Anthracene	ND		5	1	04/22/09 12:55	GY	4992753
Benz(a)anthracene	ND		5	1	04/22/09 12:55	GY	4992753
Benzo(a)pyrene	ND		5	1	04/22/09 12:55	GY	4992753
Benzo(b)fluoranthene	ND		5	1	04/22/09 12:55	GY	4992753
Benzo(g,h,i)perylene	ND		5	1	04/22/09 12:55	GY	4992753
Benzo(k)fluoranthene	ND		5	1	04/22/09 12:55	GY	4992753
Benzoic acid	ND		25	1	04/22/09 12:55	GY	4992753
Benzyl alcohol	ND		5	1	04/22/09 12:55	GY	4992753
Bis(2-chloroethoxy)methane	ND		5	1	04/22/09 12:55	GY	4992753
Bis(2-chloroethyl)ether	ND		5	1	04/22/09 12:55	GY	4992753

Qualifiers:

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TNTC - Too numerous to count
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MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-2 **Collected:** 04/07/2009 11:44 **SPL Sample ID:** 09040281-02

Site: Hobbs NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND			5	1	04/22/09 12:55	GY	4992753
Bis(2-ethylhexyl)phthalate	ND			5	1	04/22/09 12:55	GY	4992753
Butyl benzyl phthalate	ND			5	1	04/22/09 12:55	GY	4992753
Carbazole	ND			5	1	04/22/09 12:55	GY	4992753
Chrysene	ND			5	1	04/22/09 12:55	GY	4992753
Dibenz(a,h)anthracene	ND			5	1	04/22/09 12:55	GY	4992753
Dibenzofuran	ND			5	1	04/22/09 12:55	GY	4992753
Diethyl phthalate	ND			5	1	04/22/09 12:55	GY	4992753
Dimethyl phthalate	ND			5	1	04/22/09 12:55	GY	4992753
Di-n-butyl phthalate	ND			5	1	04/22/09 12:55	GY	4992753
Di-n-octyl phthalate	ND			5	1	04/22/09 12:55	GY	4992753
Fluoranthene	ND			5	1	04/22/09 12:55	GY	4992753
Fluorene	ND			5	1	04/22/09 12:55	GY	4992753
Hexachlorobenzene	ND			5	1	04/22/09 12:55	GY	4992753
Hexachlorobutadiene	ND			5	1	04/22/09 12:55	GY	4992753
Hexachlorocyclopentadiene	ND			5	1	04/22/09 12:55	GY	4992753
Hexachloroethane	ND			5	1	04/22/09 12:55	GY	4992753
Indeno(1,2,3-cd)pyrene	ND			5	1	04/22/09 12:55	GY	4992753
Isophorone	ND			5	1	04/22/09 12:55	GY	4992753
Naphthalene	5.1			5	1	04/22/09 12:55	GY	4992753
Nitrobenzene	ND			5	1	04/22/09 12:55	GY	4992753
N-Nitrosodi-n-propylamine	ND			5	1	04/22/09 12:55	GY	4992753
N-Nitrosodiphenylamine	ND			5	1	04/22/09 12:55	GY	4992753
Pentachlorophenol	ND			25	1	04/22/09 12:55	GY	4992753
Phenanthrene	ND			5	1	04/22/09 12:55	GY	4992753
Phenol	ND			5	1	04/22/09 12:55	GY	4992753
Pyrene	ND			5	1	04/22/09 12:55	GY	4992753
Pyridine	ND			5	1	04/22/09 12:55	GY	4992753
2-Methylphenol	ND			5	1	04/22/09 12:55	GY	4992753
3 & 4-Methylphenol	ND			5	1	04/22/09 12:55	GY	4992753
Surr: 2,4,6-Tribromophenol	106		%	10-123	1	04/22/09 12:55	GY	4992753
Surr: 2-Fluorobiphenyl	77.4		%	23-116	1	04/22/09 12:55	GY	4992753
Surr: 2-Fluorophenol	81.6		%	16-110	1	04/22/09 12:55	GY	4992753
Surr: Nitrobenzene-d5	75.8		%	21-114	1	04/22/09 12:55	GY	4992753
Surr: Phenol-d5	63.9		%	10-110	1	04/22/09 12:55	GY	4992753
Surr: Terphenyl-d14	62.8		%	22-141	1	04/22/09 12:55	GY	4992753

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 8:15	N_M	1.00

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-2 **Collected:** 04/07/2009 11:44 **SPL Sample ID:** 09040281-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/14/09 20:30	JC	4985228
1,1,1-Trichloroethane	ND		5	1	04/14/09 20:30	JC	4985228
1,1,2,2-Tetrachloroethane	ND		5	1	04/14/09 20:30	JC	4985228
1,1,2-Trichloroethane	ND		5	1	04/14/09 20:30	JC	4985228
1,1-Dichloroethane	ND		5	1	04/14/09 20:30	JC	4985228
1,1-Dichloroethene	ND		5	1	04/14/09 20:30	JC	4985228
1,1-Dichloropropene	ND		5	1	04/14/09 20:30	JC	4985228
1,2,3-Trichlorobenzene	ND		5	1	04/14/09 20:30	JC	4985228
1,2,3-Trichloropropane	ND		5	1	04/14/09 20:30	JC	4985228
1,2,4-Trichlorobenzene	ND		5	1	04/14/09 20:30	JC	4985228
1,2,4-Trimethylbenzene	63		5	1	04/14/09 20:30	JC	4985228
1,2-Dibromo-3-chloropropane	ND		5	1	04/14/09 20:30	JC	4985228
1,2-Dibromoethane	ND		5	1	04/14/09 20:30	JC	4985228
1,2-Dichlorobenzene	ND		5	1	04/14/09 20:30	JC	4985228
1,2-Dichloroethane	ND		5	1	04/14/09 20:30	JC	4985228
1,2-Dichloropropane	ND		5	1	04/14/09 20:30	JC	4985228
1,3,5-Trimethylbenzene	ND		5	1	04/14/09 20:30	JC	4985228
1,3-Dichlorobenzene	ND		5	1	04/14/09 20:30	JC	4985228
1,3-Dichloropropane	ND		5	1	04/14/09 20:30	JC	4985228
1,4-Dichlorobenzene	ND		5	1	04/14/09 20:30	JC	4985228
2,2-Dichloropropane	ND		5	1	04/14/09 20:30	JC	4985228
2-Butanone	ND		20	1	04/14/09 20:30	JC	4985228
2-Chloroethyl vinyl ether	ND J		10	1	04/14/09 20:30	JC	4985228
2-Chlorotoluene	ND		5	1	04/14/09 20:30	JC	4985228
2-Hexanone	ND		10	1	04/14/09 20:30	JC	4985228
4-Chlorotoluene	ND		5	1	04/14/09 20:30	JC	4985228
4-Isopropyltoluene	ND		5	1	04/14/09 20:30	JC	4985228
4-Methyl-2-pentanone	ND		10	1	04/14/09 20:30	JC	4985228
Acetone	ND		20	1	04/14/09 20:30	JC	4985228
Acrylonitrile	ND		10	1	04/14/09 20:30	JC	4985228
Benzene	18		5	1	04/14/09 20:30	JC	4985228
Bromobenzene	ND		5	1	04/14/09 20:30	JC	4985228
Bromochloromethane	ND		5	1	04/14/09 20:30	JC	4985228
Bromodichloromethane	ND		5	1	04/14/09 20:30	JC	4985228
Bromoform	ND		5	1	04/14/09 20:30	JC	4985228
Bromomethane	ND		10	1	04/14/09 20:30	JC	4985228
Carbon disulfide	ND		5	1	04/14/09 20:30	JC	4985228
Carbon tetrachloride	ND		5	1	04/14/09 20:30	JC	4985228
Chlorobenzene	ND		5	1	04/14/09 20:30	JC	4985228

Qualifiers:

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-2 **Collected:** 04/07/2009 11:44 **SPL Sample ID:** 09040281-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/14/09 20:30	JC	4985228
Chloroform	ND		5	1	04/14/09 20:30	JC	4985228
Chloromethane	ND		10	1	04/14/09 20:30	JC	4985228
Dibromochloromethane	ND		5	1	04/14/09 20:30	JC	4985228
Dibromomethane	ND		5	1	04/14/09 20:30	JC	4985228
Dichlorodifluoromethane	ND		10	1	04/14/09 20:30	JC	4985228
Ethylbenzene	24		5	1	04/14/09 20:30	JC	4985228
Hexachlorobutadiene	ND		5	1	04/14/09 20:30	JC	4985228
Isopropylbenzene	ND		5	1	04/14/09 20:30	JC	4985228
Methyl tert-butyl ether	ND		5	1	04/14/09 20:30	JC	4985228
Methylene chloride	ND		5	1	04/14/09 20:30	JC	4985228
Naphthalene	9		5	1	04/14/09 20:30	JC	4985228
n-Butylbenzene	ND		5	1	04/14/09 20:30	JC	4985228
n-Propylbenzene	ND		5	1	04/14/09 20:30	JC	4985228
sec-Butylbenzene	ND		5	1	04/14/09 20:30	JC	4985228
Styrene	ND		5	1	04/14/09 20:30	JC	4985228
tert-Butylbenzene	ND		5	1	04/14/09 20:30	JC	4985228
Tetrachloroethene	ND		5	1	04/14/09 20:30	JC	4985228
Toluene	ND		5	1	04/14/09 20:30	JC	4985228
Trichloroethene	ND		5	1	04/14/09 20:30	JC	4985228
Trichlorofluoromethane	ND		5	1	04/14/09 20:30	JC	4985228
Vinyl acetate	ND		10	1	04/14/09 20:30	JC	4985228
Vinyl chloride	ND		2	1	04/14/09 20:30	JC	4985228
cis-1,2-Dichloroethene	ND		5	1	04/14/09 20:30	JC	4985228
cis-1,3-Dichloropropene	ND		5	1	04/14/09 20:30	JC	4985228
m,p-Xylene	110		5	1	04/14/09 20:30	JC	4985228
o-Xylene	26		5	1	04/14/09 20:30	JC	4985228
trans-1,2-Dichloroethene	ND		5	1	04/14/09 20:30	JC	4985228
trans-1,3-Dichloropropene	ND		5	1	04/14/09 20:30	JC	4985228
1,2-Dichloroethene (total)	ND		5	1	04/14/09 20:30	JC	4985228
Xylenes,Total	136		5	1	04/14/09 20:30	JC	4985228
Surr: 1,2-Dichloroethane-d4	98.0		% 65-111	1	04/14/09 20:30	JC	4985228
Surr: 4-Bromofluorobenzene	110		% 87-120	1	04/14/09 20:30	JC	4985228
Surr: Toluene-d8	96.0		% 88-116	1	04/14/09 20:30	JC	4985228

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: FB-4-7-09 **Collected:** 04/07/2009 12:43 **SPL Sample ID:** 09040281-03

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/14/09 17:19	JC	4985221
1,1,1-Trichloroethane	ND		5	1	04/14/09 17:19	JC	4985221
1,1,2,2-Tetrachloroethane	ND		5	1	04/14/09 17:19	JC	4985221
1,1,2-Trichloroethane	ND		5	1	04/14/09 17:19	JC	4985221
1,1-Dichloroethane	ND		5	1	04/14/09 17:19	JC	4985221
1,1-Dichloroethene	ND		5	1	04/14/09 17:19	JC	4985221
1,1-Dichloropropene	ND		5	1	04/14/09 17:19	JC	4985221
1,2,3-Trichlorobenzene	ND		5	1	04/14/09 17:19	JC	4985221
1,2,3-Trichloropropane	ND		5	1	04/14/09 17:19	JC	4985221
1,2,4-Trichlorobenzene	ND		5	1	04/14/09 17:19	JC	4985221
1,2,4-Trimethylbenzene	ND		5	1	04/14/09 17:19	JC	4985221
1,2-Dibromo-3-chloropropane	ND		5	1	04/14/09 17:19	JC	4985221
1,2-Dibromoethane	ND		5	1	04/14/09 17:19	JC	4985221
1,2-Dichlorobenzene	ND		5	1	04/14/09 17:19	JC	4985221
1,2-Dichloroethane	ND		5	1	04/14/09 17:19	JC	4985221
1,2-Dichloropropane	ND		5	1	04/14/09 17:19	JC	4985221
1,3,5-Trimethylbenzene	ND		5	1	04/14/09 17:19	JC	4985221
1,3-Dichlorobenzene	ND		5	1	04/14/09 17:19	JC	4985221
1,3-Dichloropropane	ND		5	1	04/14/09 17:19	JC	4985221
1,4-Dichlorobenzene	ND		5	1	04/14/09 17:19	JC	4985221
2,2-Dichloropropane	ND		5	1	04/14/09 17:19	JC	4985221
2-Butanone	ND		20	1	04/14/09 17:19	JC	4985221
2-Chloroethyl vinyl ether	ND	J	10	1	04/14/09 17:19	JC	4985221
2-Chlorotoluene	ND		5	1	04/14/09 17:19	JC	4985221
2-Hexanone	ND		10	1	04/14/09 17:19	JC	4985221
4-Chlorotoluene	ND		5	1	04/14/09 17:19	JC	4985221
4-Isopropyltoluene	ND		5	1	04/14/09 17:19	JC	4985221
4-Methyl-2-pentanone	ND		10	1	04/14/09 17:19	JC	4985221
Acetone	ND		20	1	04/14/09 17:19	JC	4985221
Acrylonitrile	ND		10	1	04/14/09 17:19	JC	4985221
Benzene	ND		5	1	04/14/09 17:19	JC	4985221
Bromobenzene	ND		5	1	04/14/09 17:19	JC	4985221
Bromochloromethane	ND		5	1	04/14/09 17:19	JC	4985221
Bromodichloromethane	ND		5	1	04/14/09 17:19	JC	4985221
Bromoform	ND		5	1	04/14/09 17:19	JC	4985221
Bromomethane	ND		10	1	04/14/09 17:19	JC	4985221
Carbon disulfide	ND		5	1	04/14/09 17:19	JC	4985221
Carbon tetrachloride	ND		5	1	04/14/09 17:19	JC	4985221
Chlorobenzene	ND		5	1	04/14/09 17:19	JC	4985221

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
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MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: FB-4-7-09 **Collected:** 04/07/2009 12:43 **SPL Sample ID:** 09040281-03

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/14/09 17:19	JC	4985221
Chloroform	ND		5	1	04/14/09 17:19	JC	4985221
Chloromethane	ND		10	1	04/14/09 17:19	JC	4985221
Dibromochloromethane	ND		5	1	04/14/09 17:19	JC	4985221
Dibromomethane	ND		5	1	04/14/09 17:19	JC	4985221
Dichlorodifluoromethane	ND		10	1	04/14/09 17:19	JC	4985221
Ethylbenzene	ND		5	1	04/14/09 17:19	JC	4985221
Hexachlorobutadiene	ND		5	1	04/14/09 17:19	JC	4985221
Isopropylbenzene	ND		5	1	04/14/09 17:19	JC	4985221
Methyl tert-butyl ether	ND		5	1	04/14/09 17:19	JC	4985221
Methylene chloride	ND		5	1	04/14/09 17:19	JC	4985221
Naphthalene	ND		5	1	04/14/09 17:19	JC	4985221
n-Butylbenzene	ND		5	1	04/14/09 17:19	JC	4985221
n-Propylbenzene	ND		5	1	04/14/09 17:19	JC	4985221
sec-Butylbenzene	ND		5	1	04/14/09 17:19	JC	4985221
Styrene	ND		5	1	04/14/09 17:19	JC	4985221
tert-Butylbenzene	ND		5	1	04/14/09 17:19	JC	4985221
Tetrachloroethene	ND		5	1	04/14/09 17:19	JC	4985221
Toluene	ND		5	1	04/14/09 17:19	JC	4985221
Trichloroethene	ND		5	1	04/14/09 17:19	JC	4985221
Trichlorofluoromethane	ND		5	1	04/14/09 17:19	JC	4985221
Vinyl acetate	ND		10	1	04/14/09 17:19	JC	4985221
Vinyl chloride	ND		2	1	04/14/09 17:19	JC	4985221
cis-1,2-Dichloroethene	ND		5	1	04/14/09 17:19	JC	4985221
cis-1,3-Dichloropropene	ND		5	1	04/14/09 17:19	JC	4985221
m,p-Xylene	ND		5	1	04/14/09 17:19	JC	4985221
o-Xylene	ND		5	1	04/14/09 17:19	JC	4985221
trans-1,2-Dichloroethene	ND		5	1	04/14/09 17:19	JC	4985221
trans-1,3-Dichloropropene	ND		5	1	04/14/09 17:19	JC	4985221
1,2-Dichloroethene (total)	ND		5	1	04/14/09 17:19	JC	4985221
Xylenes,Total	ND		5	1	04/14/09 17:19	JC	4985221
Surr: 1,2-Dichloroethane-d4	98.0		% 65-111	1	04/14/09 17:19	JC	4985221
Surr: 4-Bromofluorobenzene	108		% 87-120	1	04/14/09 17:19	JC	4985221
Surr: Toluene-d8	94.0		% 88-116	1	04/14/09 17:19	JC	4985221

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TB-4-7-09 **Collected:** 04/07/2009 12:46 **SPL Sample ID:** 09040281-04

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/14/09 20:02	JC	4985227
1,1,1-Trichloroethane	ND		5	1	04/14/09 20:02	JC	4985227
1,1,2,2-Tetrachloroethane	ND		5	1	04/14/09 20:02	JC	4985227
1,1,2-Trichloroethane	ND		5	1	04/14/09 20:02	JC	4985227
1,1-Dichloroethane	ND		5	1	04/14/09 20:02	JC	4985227
1,1-Dichloroethene	ND		5	1	04/14/09 20:02	JC	4985227
1,1-Dichloropropene	ND		5	1	04/14/09 20:02	JC	4985227
1,2,3-Trichlorobenzene	ND		5	1	04/14/09 20:02	JC	4985227
1,2,3-Trichloropropane	ND		5	1	04/14/09 20:02	JC	4985227
1,2,4-Trichlorobenzene	ND		5	1	04/14/09 20:02	JC	4985227
1,2,4-Trimethylbenzene	ND		5	1	04/14/09 20:02	JC	4985227
1,2-Dibromo-3-chloropropane	ND		5	1	04/14/09 20:02	JC	4985227
1,2-Dibromoethane	ND		5	1	04/14/09 20:02	JC	4985227
1,2-Dichlorobenzene	ND		5	1	04/14/09 20:02	JC	4985227
1,2-Dichloroethane	ND		5	1	04/14/09 20:02	JC	4985227
1,2-Dichloropropane	ND		5	1	04/14/09 20:02	JC	4985227
1,3,5-Trimethylbenzene	ND		5	1	04/14/09 20:02	JC	4985227
1,3-Dichlorobenzene	ND		5	1	04/14/09 20:02	JC	4985227
1,3-Dichloropropane	ND		5	1	04/14/09 20:02	JC	4985227
1,4-Dichlorobenzene	ND		5	1	04/14/09 20:02	JC	4985227
2,2-Dichloropropane	ND		5	1	04/14/09 20:02	JC	4985227
2-Butanone	ND		20	1	04/14/09 20:02	JC	4985227
2-Chloroethyl vinyl ether	ND J		10	1	04/14/09 20:02	JC	4985227
2-Chlorotoluene	ND		5	1	04/14/09 20:02	JC	4985227
2-Hexanone	ND		10	1	04/14/09 20:02	JC	4985227
4-Chlorotoluene	ND		5	1	04/14/09 20:02	JC	4985227
4-Isopropyltoluene	ND		5	1	04/14/09 20:02	JC	4985227
4-Methyl-2-pentanone	ND		10	1	04/14/09 20:02	JC	4985227
Acetone	ND		20	1	04/14/09 20:02	JC	4985227
Acrylonitrile	ND		10	1	04/14/09 20:02	JC	4985227
Benzene	ND		5	1	04/14/09 20:02	JC	4985227
Bromobenzene	ND		5	1	04/14/09 20:02	JC	4985227
Bromochloromethane	ND		5	1	04/14/09 20:02	JC	4985227
Bromodichloromethane	ND		5	1	04/14/09 20:02	JC	4985227
Bromoform	ND		5	1	04/14/09 20:02	JC	4985227
Bromomethane	ND		10	1	04/14/09 20:02	JC	4985227
Carbon disulfide	ND		5	1	04/14/09 20:02	JC	4985227
Carbon tetrachloride	ND		5	1	04/14/09 20:02	JC	4985227
Chlorobenzene	ND		5	1	04/14/09 20:02	JC	4985227

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TB-4-7-09 **Collected:** 04/07/2009 12:46 **SPL Sample ID:** 09040281-04

Site: Hobbs NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND			10	1	04/14/09 20:02	JC	4985227
Chloroform	ND			5	1	04/14/09 20:02	JC	4985227
Chloromethane	ND			10	1	04/14/09 20:02	JC	4985227
Dibromochloromethane	ND			5	1	04/14/09 20:02	JC	4985227
Dibromomethane	ND			5	1	04/14/09 20:02	JC	4985227
Dichlorodifluoromethane	ND			10	1	04/14/09 20:02	JC	4985227
Ethylbenzene	ND			5	1	04/14/09 20:02	JC	4985227
Hexachlorobutadiene	ND			5	1	04/14/09 20:02	JC	4985227
Isopropylbenzene	ND			5	1	04/14/09 20:02	JC	4985227
Methyl tert-butyl ether	ND			5	1	04/14/09 20:02	JC	4985227
Methylene chloride	ND			5	1	04/14/09 20:02	JC	4985227
Naphthalene	ND			5	1	04/14/09 20:02	JC	4985227
n-Butylbenzene	ND			5	1	04/14/09 20:02	JC	4985227
n-Propylbenzene	ND			5	1	04/14/09 20:02	JC	4985227
sec-Butylbenzene	ND			5	1	04/14/09 20:02	JC	4985227
Styrene	ND			5	1	04/14/09 20:02	JC	4985227
tert-Butylbenzene	ND			5	1	04/14/09 20:02	JC	4985227
Tetrachloroethene	ND			5	1	04/14/09 20:02	JC	4985227
Toluene	ND			5	1	04/14/09 20:02	JC	4985227
Trichloroethene	ND			5	1	04/14/09 20:02	JC	4985227
Trichlorofluoromethane	ND			5	1	04/14/09 20:02	JC	4985227
Vinyl acetate	ND			10	1	04/14/09 20:02	JC	4985227
Vinyl chloride	ND			2	1	04/14/09 20:02	JC	4985227
cis-1,2-Dichloroethene	ND			5	1	04/14/09 20:02	JC	4985227
cis-1,3-Dichloropropene	ND			5	1	04/14/09 20:02	JC	4985227
m,p-Xylene	ND			5	1	04/14/09 20:02	JC	4985227
o-Xylene	ND			5	1	04/14/09 20:02	JC	4985227
trans-1,2-Dichloroethene	ND			5	1	04/14/09 20:02	JC	4985227
trans-1,3-Dichloropropene	ND			5	1	04/14/09 20:02	JC	4985227
1,2-Dichloroethene (total)	ND			5	1	04/14/09 20:02	JC	4985227
Xylenes,Total	ND			5	1	04/14/09 20:02	JC	4985227
Surr: 1,2-Dichloroethane-d4	96.0		%	65-111	1	04/14/09 20:02	JC	4985227
Surr: 4-Bromofluorobenzene	110		%	87-120	1	04/14/09 20:02	JC	4985227
Surr: Toluene-d8	94.0		%	88-116	1	04/14/09 20:02	JC	4985227

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
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Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Hydrocarbons
Method: SW8015B
WorkOrder: 09040281
Lab Batch ID: 89427

Method Blank

RunID: HP_V_090416B-4987505
Units: mg/L
Analysis Date: 04/14/2009 23:43
Analyst: NW
Preparation Date: 04/13/2009 14:10
Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-02C	MW-2

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.10
Mineral Spirits Range Organics	ND	0.10
Surr: n-Pentacosane	51.2	20-150

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HP_V_090416B-4987506
Units: mg/L
Analysis Date: 04/15/2009 0:03
Analyst: NW
Preparation Date: 04/13/2009 14:10
Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics	1.00	0.895	89.5	1.00	0.880	88.0	1.7	40	21	150
Surr: n-Pentacosane	0.0500	0.0494	98.8	0.0500	0.0485	97.0	1.8	30	20	150

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Headspace Gas Analysis
Method: RSK147
WorkOrder: 09040281
Lab Batch ID: R270691

Method Blank

RunID: VARC_090420A-4990870 Units: mg/L
Analysis Date: 04/20/2009 12:47 Analyst: V_L

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-02E	MW-2

Analyte	Result	Rep Limit
Methane	ND	0.0012

Sample Duplicate

Original Sample: 09040240-01
RunID: VARC_090420A-4990871 Units: mg/L
Analysis Date: 04/20/2009 13:03 Analyst: V_L

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Methane	ND	ND	0	50

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Gasoline Range Organics **WorkOrder:** 09040281
Method: SW8015B **Lab Batch ID:** R270269

Method Blank

RunID: HP_P_090413A-4984662 Units: mg/L
Analysis Date: 04/13/2009 5:20 Analyst: CLJ

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-02D	MW-2

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	91.5	60-155
Surr: 4-Bromofluorobenzene	104.0	50-158

Laboratory Control Sample (LCS)

RunID: HP_P_090413A-4984660 Units: mg/L
Analysis Date: 04/13/2009 4:22 Analyst: CLJ

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	0.859	85.9	42	136
Surr: 1,4-Difluorobenzene	0.100	0.0949	94.9	60	155
Surr: 4-Bromofluorobenzene	0.100	0.108	108	50	158

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040343-01
RunID: HP_P_090413A-4984664 Units: mg/L
Analysis Date: 04/13/2009 10:44 Analyst: CLJ

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	1	0.852	85.2	1	0.868	86.8	1.92	36	22	174
Surr: 1,4-Difluorobenzene	ND	0.1	0.0922	92.2	0.1	0.0932	93.2	1.08	30	60	155
Surr: 4-Bromofluorobenzene	ND	0.1	0.105	105	0.1	0.107	107	1.41	30	50	158

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Gasoline Range Organics
Method: SW8015B
WorkOrder: 09040281
Lab Batch ID: R270293

Method Blank

RunID: HP_O_090414B-4985033 Units: mg/Kg
Analysis Date: 04/14/2009 5:22 Analyst: EMB
Preparation Date: 04/14/2009 5:22 Prep By: Method SW5030B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-01A	MW5-50-51

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	98.4	63-142
Surr: 4-Bromofluorobenzene	103.3	50-159

Laboratory Control Sample (LCS)

RunID: HP_O_090414B-4985047 Units: mg/Kg
Analysis Date: 04/14/2009 22:02 Analyst: EMB
Preparation Date: 04/14/2009 22:02 Prep By: Method SW5030B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	0.862	86.2	70	130
Surr: 1,4-Difluorobenzene	0.100	0.0992	99.2	63	142
Surr: 4-Bromofluorobenzene	0.100	0.101	101	50	159

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040277-01
RunID: HP_O_090414B-4985040 Units: mg/Kg
Analysis Date: 04/14/2009 14:11 Analyst: EMB
Preparation Date: 04/13/2009 13:12 Prep By: XML Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	0.910	1	1.02	11.3 *	1	1.12	21.3 *	9.27	50	26	147
Surr: 1,4-Difluorobenzene	ND	0.1	0.0962	96.2	0.1	0.100	100	4.17	30	63	142
Surr: 4-Bromofluorobenzene	ND	0.1	0.14	140	0.1	0.146	146	4.13	30	50	159

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09040281
Lab Batch ID: 89412

Method Blank

RunID: H_090417E-4992370
Units: ug/L
Analysis Date: 04/17/2009 9:40
Analyst: GY
Preparation Date: 04/13/2009 8:15
Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-02B	MW-2

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Diphenylhydrazine	ND	10
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,4,5-Trichlorophenol	ND	10
2,4,6-Trichlorophenol	ND	5.0
2,4-Dichlorophenol	ND	5.0
2,4-Dimethylphenol	ND	5.0
2,4-Dinitrophenol	ND	25
2,4-Dinitrotoluene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Chlorophenol	ND	5.0
2-Methylnaphthalene	ND	5.0
2-Nitroaniline	ND	25
2-Nitrophenol	ND	5.0
3,3'-Dichlorobenzidine	ND	10
3-Nitroaniline	ND	25
4,6-Dinitro-2-methylphenol	ND	25
4-Bromophenyl phenyl ether	ND	5.0
4-Chloro-3-methylphenol	ND	5.0
4-Chloroaniline	ND	5.0
4-Chlorophenyl phenyl ether	ND	5.0
4-Nitroaniline	ND	25
4-Nitrophenol	ND	25
Acenaphthene	ND	5.0
Acenaphthylene	ND	5.0
Aniline	ND	5.0
Anthracene	ND	5.0
Benz(a)anthracene	ND	5.0
Benzo(a)pyrene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzoic acid	ND	25
Benzyl alcohol	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Butyl benzyl phthalate	ND	5.0
Carbazole	ND	5.0
Chrysene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Dibenzofuran	ND	5.0

Qualifiers:

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MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040281
Method: SW8270C **Lab Batch ID:** 89412

Method Blank

RunID: H_090417E-4992370 Units: ug/L
Analysis Date: 04/17/2009 9:40 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	5.0
Dimethyl phthalate	ND	5.0
Di-n-butyl phthalate	ND	5.0
Di-n-octyl phthalate	ND	5.0
Fluoranthene	ND	5.0
Fluorene	ND	5.0
Hexachlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
Hexachloroethane	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Isophorone	ND	5.0
Naphthalene	ND	5.0
Nitrobenzene	ND	5.0
N-Nitrosodi-n-propylamine	ND	5.0
N-Nitrosodiphenylamine	ND	5.0
Pentachlorophenol	ND	25
Phenanthrene	ND	5.0
Phenol	ND	5.0
Pyrene	ND	5.0
Pyridine	ND	5.0
2-Methylphenol	ND	5.0
3 & 4-Methylphenol	ND	5.0
Surr: 2,4,6-Tribromophenol	95.2	10-123
Surr: 2-Fluorobiphenyl	72.6	23-116
Surr: 2-Fluorophenol	76.1	16-110
Surr: Nitrobenzene-d5	68.4	21-114
Surr: Phenol-d5	62.5	10-110
Surr: Terphenyl-d14	68.4	22-141

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2,4-Trichlorobenzene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	39	21	120
1,2-Dichlorobenzene	25.0	15.4	61.6	25.0	16.7	66.8	8.1	50	20	150

Qualifiers:
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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis:	**Semivolatile Organics by Method 8270C**	**WorkOrder:**	**09040281**
Method:	**SW8270C**	**Lab Batch ID:**	**89412**

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID:	H_090417E-4992371	Units:	ug/L
Analysis Date:	04/17/2009 10:42	Analyst:	GY
Preparation Date:	04/13/2009 8:15	Prep By:	N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Diphenylhydrazine	25.0	16.5	66.0	25.0	17.6	70.4	6.5	50	10	251
1,3-Dichlorobenzene	25.0	15.4	61.6	25.0	16.5	66.0	6.9	50	20	150
1,4-Dichlorobenzene	25.0	15.3	61.2	25.0	16.2	64.8	5.7	45	20	150
2,4,5-Trichlorophenol	25.0	14.9	59.6	25.0	15.4	61.6	3.3	50	30	150
2,4,6-Trichlorophenol	25.0	15.2	60.8	25.0	16.0	64.0	5.1	50	30	150
2,4-Dichlorophenol	25.0	14.5	58.0	25.0	15.9	63.6	9.2	50	30	150
2,4-Dimethylphenol	25.0	15.4	61.6	25.0	16.0	64.0	3.8	50	32	140
2,4-Dinitrophenol	25.0	11.9	47.6	25.0	12.8	51.2	7.3	50	10	160
2,4-Dinitrotoluene	25.0	16.1	64.4	25.0	16.3	65.2	1.2	50	30	150
2,6-Dinitrotoluene	25.0	15.8	63.2	25.0	15.7	62.8	0.6	50	30	150
2-Chloronaphthalene	25.0	15.8	63.2	25.0	16.5	66.0	4.3	50	30	150
2-Chlorophenol	25.0	15.4	61.6	25.0	15.9	63.6	3.2	40	23	134
2-Methylnaphthalene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	50	20	170
2-Nitroaniline	25.0	14.8	59.2	25.0	15.9	63.6	7.2	50	20	160
2-Nitrophenol	25.0	14.9	59.6	25.0	15.8	63.2	5.9	50	29	182
3,3'-Dichlorobenzidine	25.0	13.3	53.2	25.0	13.7	54.8	3.0	50	30	200
3-Nitroaniline	25.0	14.4	57.6	25.0	14.8	59.2	2.7	50	20	160
4,6-Dinitro-2-methylphenol	25.0	13.7	54.8	25.0	14.2	56.8	3.6	50	10	160
4-Bromophenyl phenyl ether	25.0	15.6	62.4	25.0	15.8	63.2	1.3	50	30	150
4-Chloro-3-methylphenol	25.0	15.2	60.8	25.0	16.1	64.4	5.8	42	25	160
4-Chloroaniline	25.0	15.5	62.0	25.0	16.2	64.8	4.4	50	20	160
4-Chlorophenyl phenyl ether	25.0	15.7	62.8	25.0	16.3	65.2	3.8	50	25	158
4-Nitroaniline	25.0	13.9	55.6	25.0	14.8	59.2	6.3	50	20	160
4-Nitrophenol	25.0	13.0	52.0	25.0	14.8	59.2	12.9	50	10	132
Acenaphthene	25.0	15.3	61.2	25.0	16.3	65.2	6.3	31	30	150
Acenaphthylene	25.0	15.4	61.6	25.0	16.4	65.6	6.3	50	33	250
Aniline	50.0	29.9	59.8	50.0	30.9	61.8	3.3	50	10	135
Anthracene	25.0	15.6	62.4	25.0	16.5	66.0	5.6	50	27	133
Benz(a)anthracene	25.0	15.6	62.4	25.0	16.4	65.6	5.0	50	33	143
Benzo(a)pyrene	25.0	12.2	48.8	25.0	12.7	50.8	4.0	50	17	163
Benzo(b)fluoranthene	25.0	14.9	59.6	25.0	15.2	60.8	2.0	50	24	159
Benzo(g,h,i)perylene	25.0	15.7	62.8	25.0	15.9	63.6	1.3	50	30	160
Benzo(k)fluoranthene	25.0	15.0	60.0	25.0	15.2	60.8	1.3	50	11	162

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040281
Method: SW8270C **Lab Batch ID:** 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzoic acid	25.0	15.7	62.8	25.0	16.0	64.0	1.9	50	10	400
Benzyl alcohol	25.0	14.7	58.8	25.0	16.2	64.8	9.7	50	30	160
Bis(2-chloroethoxy)methane	25.0	15.2	60.8	25.0	15.8	63.2	3.9	50	33	184
Bis(2-chloroethyl)ether	25.0	15.8	63.2	25.0	16.7	66.8	5.5	50	12	158
Bis(2-chloroisopropyl)ether	25.0	15.6	62.4	25.0	16.1	64.4	3.2	50	20	160
Bis(2-ethylhexyl)phthalate	25.0	16.1	64.4	25.0	17.0	68.0	5.4	50	10	158
Butyl benzyl phthalate	25.0	16.3	65.2	25.0	17.0	68.0	4.2	50	30	160
Carbazole	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	30	150
Chrysene	25.0	15.0	60.0	25.0	16.0	64.0	6.5	50	17	168
Dibenz(a,h)anthracene	25.0	15.5	62.0	25.0	15.7	62.8	1.3	50	30	160
Dibenzofuran	25.0	15.7	62.8	25.0	16.4	65.6	4.4	50	30	150
Diethyl phthalate	25.0	16.0	64.0	25.0	17.1	68.4	6.6	50	30	160
Dimethyl phthalate	25.0	15.7	62.8	25.0	16.8	67.2	6.8	50	30	160
Di-n-butyl phthalate	25.0	16.6	66.4	25.0	17.1	68.4	3.0	50	30	160
Di-n-octyl phthalate	25.0	16.2	64.8	25.0	17.0	68.0	4.8	50	20	150
Fluoranthene	25.0	15.9	63.6	25.0	16.3	65.2	2.5	50	26	137
Fluorene	25.0	15.4	61.6	25.0	16.3	65.2	5.7	50	30	150
Hexachlorobenzene	25.0	15.4	61.6	25.0	16.6	66.4	7.5	50	20	150
Hexachlorobutadiene	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	20	140
Hexachlorocyclopentadiene	25.0	17.2	68.8	25.0	19.1	76.4	10.5	50	10	150
Hexachloroethane	25.0	15.0	60.0	25.0	16.3	65.2	8.3	50	14	120
Indeno(1,2,3-cd)pyrene	25.0	16.3	65.2	25.0	17.5	70.0	7.1	50	30	160
Isophorone	25.0	16.2	64.8	25.0	17.3	69.2	6.6	50	21	196
Naphthalene	25.0	15.4	61.6	25.0	16.2	64.8	5.1	50	21	133
Nitrobenzene	25.0	15.3	61.2	25.0	16.0	64.0	4.5	50	20	160
N-Nitrosodi-n-propylamine	25.0	15.6	62.4	25.0	15.4	61.6	1.3	38	30	160
N-Nitrosodiphenylamine	50.0	38.0	76.0	50.0	40.4	80.8	6.1	50	30	150
Pentachlorophenol	25.0	11.5	46.0	25.0	12.8	51.2	10.7	50	14	176
Phenanthrene	25.0	15.3	61.2	25.0	16.1	64.4	5.1	50	10	140
Phenol	25.0	15.2	60.8	25.0	15.8	63.2	3.9	42	40	132
Pyrene	25.0	15.8	63.2	25.0	16.6	66.4	4.9	38	30	150
Pyridine	50.0	27.0	54.0	50.0	29.4	58.8	8.5	50	10	150
2-Methylphenol	25.0	15.7	62.8	25.0	16.2	64.8	3.1	50	30	160

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09040281
Lab Batch ID: 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371
Analysis Date: 04/17/2009 10:42
Preparation Date: 04/13/2009 8:15
Units: ug/L
Analyst: GY
Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
3 & 4-Methylphenol	25.0	16.6	66.4	25.0	17.2	68.8	3.6	50	10	160
Surr: 2,4,6-Tribromophenol	75.0	61.1	81.5	75.0	60.8	81.1	0.5	30	10	123
Surr: 2-Fluorobiphenyl	50.0	28.6	57.2	50.0	29.5	59.0	3.1	30	23	116
Surr: 2-Fluorophenol	75.0	50.0	66.7	75.0	50.8	67.7	1.6	30	16	110
Surr: Nitrobenzene-d5	50.0	29.0	58.0	50.0	30.0	60.0	3.4	30	21	114
Surr: Phenol-d5	75.0	43.1	57.5	75.0	44.2	58.9	2.5	30	10	110
Surr: Terphenyl-d14	50.0	28.4	56.8	50.0	28.7	57.4	1.1	30	22	141

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040281
Method: SW8260B **Lab Batch ID:** R270194

Method Blank

RunID: L_090413B-4983600 Units: ug/kg
Analysis Date: 04/13/2009 15:44 Analyst: E_G

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-01A	MW5-50-51

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	100
Acrylonitrile	ND	50
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040281
Method: SW8260B **Lab Batch ID:** R270194

Method Blank

RunID: L_090413B-4983600 Units: ug/kg
Analysis Date: 04/13/2009 15:44 Analyst: E_G

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	10
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	90.0	64-115
Surr: 4-Bromofluorobenzene	96.0	65-131
Surr: Toluene-d8	102.0	75-136

Laboratory Control Sample (LCS)

RunID: L_090413B-4983900 Units: ug/kg
Analysis Date: 04/13/2009 15:15 Analyst: E_G

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	18.0	90.0	56	140
1,1,1-Trichloroethane	20.0	15.0	75.0	58	135
1,1,2,2-Tetrachloroethane	20.0	18.0	90.0	52	139
1,1,2-Trichloroethane	20.0	20.0	100	81	138
1,1-Dichloroethane	20.0	17.0	85.0	56	137

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040281
Method: SW8260B **Lab Batch ID:** R270194

Laboratory Control Sample (LCS)

RunID: L_090413B-4983900 Units: ug/kg
Analysis Date: 04/13/2009 15:15 Analyst: E_G

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	17.0	85.0	56	135
1,1-Dichloropropene	20.0	16.0	80.0	62	132
1,2,3-Trichlorobenzene	20.0	17.0	85.0	53	144
1,2,3-Trichloropropane	20.0	9.00	45.0	44	141
1,2,4-Trichlorobenzene	20.0	16.0	80.0	51	143
1,2,4-Trimethylbenzene	20.0	17.0	85.0	59	148
1,2-Dibromo-3-chloropropane	20.0	16.0	80.0	53	144
1,2-Dibromoethane	20.0	18.0	90.0	55	138
1,2-Dichlorobenzene	20.0	18.0	90.0	63	137
1,2-Dichloroethane	20.0	16.0	80.0	56	135
1,2-Dichloropropane	20.0	18.0	90.0	62	132
1,3,5-Trimethylbenzene	20.0	16.0	80.0	54	145
1,3-Dichlorobenzene	20.0	16.0	80.0	66	137
1,3-Dichloropropane	20.0	20.0	100	59	138
1,4-Dichlorobenzene	20.0	17.0	85.0	61	142
2,2-Dichloropropane	20.0	13.0	65.0	55	138
2-Butanone	20.0	24.0	120	10	191
2-Chloroethyl vinyl ether	20.0	12.0	60.0	10	181
2-Chlorotoluene	20.0	17.0	85.0	64	139
2-Hexanone	20.0	18.0	90.0	18	182
4-Chlorotoluene	20.0	17.0	85.0	63	138
4-Isopropyltoluene	20.0	17.0	85.0	59	156
4-Methyl-2-pentanone	20.0	16.0	80.0	10	166
Acetone	20.0	29.0	145	10	200
Acrylonitrile	20.0	23.0	115	38	169
Benzene	20.0	17.0	85.0	64	130
Bromobenzene	20.0	18.0	90.0	58	139
Bromochloromethane	20.0	18.0	90.0	66	127
Bromodichloromethane	20.0	16.0	80.0	59	134
Bromoform	20.0	18.0	90.0	65	135
Bromomethane	20.0	15.0	75.0	40	134
Carbon disulfide	20.0	16.0	80.0	53	130
Carbon tetrachloride	20.0	16.0	80.0	61	132
Chlorobenzene	20.0	18.0	90.0	60	140

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040281
Lab Batch ID: R270194

Laboratory Control Sample (LCS)

RunID: L_090413B-4983900 Units: ug/kg
Analysis Date: 04/13/2009 15:15 Analyst: E_G

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	17.0	85.0	45	140
Chloroform	20.0	17.0	85.0	64	131
Chloromethane	20.0	20.0	100	39	140
Dibromochloromethane	20.0	17.0	85.0	54	138
Dibromomethane	20.0	17.0	85.0	64	131
Dichlorodifluoromethane	20.0	11.0	55.0	35	133
Ethylbenzene	20.0	18.0	90.0	58	143
Hexachlorobutadiene	20.0	16.0	80.0	56	166
Isopropylbenzene	20.0	16.0	80.0	58	133
Methyl tert-butyl ether	40.0	20.0	50.0	50	132
Methylene chloride	20.0	17.0	85.0	52	144
Naphthalene	20.0	18.0	90.0	51	139
n-Butylbenzene	20.0	17.0	85.0	59	164
n-Propylbenzene	20.0	18.0	90.0	57	140
sec-Butylbenzene	20.0	16.0	80.0	63	146
Styrene	20.0	17.0	85.0	57	134
tert-Butylbenzene	20.0	16.0	80.0	57	144
Tetrachloroethene	20.0	17.0	85.0	41	156
Toluene	20.0	19.0	95.0	63	139
Trichloroethene	20.0	17.0	85.0	62	135
Trichlorofluoromethane	20.0	15.0	75.0	53	140
Vinyl acetate	20.0	17.0	85.0	17	163
Vinyl chloride	20.0	15.0	75.0	45	148
cis-1,2-Dichloroethene	20.0	18.0	90.0	70	129
cis-1,3-Dichloropropene	20.0	17.0	85.0	58	132
m,p-Xylene	40.0	37.0	92.5	64	137
o-Xylene	20.0	20.0	100	64	143
trans-1,2-Dichloroethene	20.0	17.0	85.0	63	130
trans-1,3-Dichloropropene	20.0	16.0	80.0	58	128
1,2-Dichloroethene (total)	40	35	88	63	130
Xylenes,Total	60	57	95	64	143
Surr: 1,2-Dichloroethane-d4	50.0	47	94.0	64	115
Surr: 4-Bromofluorobenzene	50.0	50	100	65	131
Surr: Toluene-d8	50.0	54	108	75	136

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040281
Lab Batch ID: R270194

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-01
RunID: L_090413B-4983602 Units: ug/kg
Analysis Date: 04/13/2009 18:51 Analyst: E_G
Preparation Date: 04/13/2009 11:57 Prep By: E_G Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	20	21.0	105	20	20.0	100	4.88	30	38	129
1,1,1-Trichloroethane	ND	20	16.0	80.0	20	16.0	80.0	0	30	44	154
1,1,2,2-Tetrachloroethane	ND	20	21.0	105	20	21.0	105	0	30	14	143
1,1,2-Trichloroethane	ND	20	23.0	115	20	23.0	115	0	30	34	135
1,1-Dichloroethane	ND	20	18.0	90.0	20	17.0	85.0	5.71	30	42	146
1,1-Dichloroethene	ND	20	19.0	95.0	20	19.0	95.0	0	22	39	168
1,1-Dichloropropene	ND	20	18.0	90.0	20	17.0	85.0	5.71	30	42	156
1,2,3-Trichlorobenzene	ND	20	14.0	70.0	20	14.0	70.0	0	30	10	125
1,2,3-Trichloropropane	ND	20	12.0	60.0	20	11.0	55.0	8.70	30	10	154
1,2,4-Trichlorobenzene	ND	20	13.0	65.0	20	13.0	65.0	0	30	10	128
1,2,4-Trimethylbenzene	ND	20	16.0	80.0	20	15.0	75.0	6.45	30	22	139
1,2-Dibromo-3-chloropropane	ND	20	20.0	100	20	20.0	100	0	30	23	139
1,2-Dibromoethane	ND	20	22.0	110	20	21.0	105	4.65	30	32	129
1,2-Dichlorobenzene	ND	20	18.0	90.0	20	17.0	85.0	5.71	30	17	130
1,2-Dichloroethane	ND	20	16.0	80.0	20	16.0	80.0	0	30	15	158
1,2-Dichloropropane	ND	20	19.0	95.0	20	19.0	95.0	0	30	42	133
1,3,5-Trimethylbenzene	ND	20	16.0	80.0	20	14.0	70.0	13.3	30	22	135
1,3-Dichlorobenzene	ND	20	16.0	80.0	20	14.0	70.0	13.3	30	22	130
1,3-Dichloropropane	ND	20	22.0	110	20	22.0	110	0	30	37	131
1,4-Dichlorobenzene	ND	20	16.0	80.0	20	15.0	75.0	6.45	30	20	129
2,2-Dichloropropane	ND	20	15.0	75.0	20	15.0	75.0	0	30	39	155
2-Butanone	ND	20	30.0	150	20	28.0	140	6.90	30	10	200
2-Chloroethyl vinyl ether	ND	20	18.0	90.0	20	16.0	80.0	11.8	30	10	168
2-Chlorotoluene	ND	20	17.0	85.0	20	15.0	75.0	12.5	30	30	133
2-Hexanone	ND	20	21.0	105	20	21.0	105	0	30	14	151
4-Chlorotoluene	ND	20	17.0	85.0	20	15.0	75.0	12.5	30	24	133
4-Isopropyltoluene	ND	20	15.0	75.0	20	14.0	70.0	6.90	30	17	143
4-Methyl-2-pentanone	ND	20	21.0	105	20	20.0	100	4.88	30	10	176
Acetone	ND	20	44.0	140	20	42.0	130	4.65	30	10	200
Acrylonitrile	ND	20	27.0	135	20	25.0	125	7.69	30	10	200

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040281
Method: SW8260B **Lab Batch ID:** R270194

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-01
RunID: L_090413B-4983602 Units: ug/kg
Analysis Date: 04/13/2009 18:51 Analyst: E_G
Preparation Date: 04/13/2009 11:57 Prep By: E_G Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	19.0	95.0	20	18.0	90.0	5.41	21	49	135
Bromobenzene	ND	20	18.0	90.0	20	17.0	85.0	5.71	30	29	127
Bromochloromethane	ND	20	19.0	95.0	20	19.0	95.0	0	30	27	147
Bromodichloromethane	ND	20	17.0	85.0	20	17.0	85.0	0	30	32	138
Bromoform	ND	20	22.0	110	20	21.0	105	4.65	30	27	129
Bromomethane	ND	20	17.0	85.0	20	17.0	85.0	0	30	32	142
Carbon disulfide	ND	20	17.0	85.0	20	17.0	85.0	0	30	25	168
Carbon tetrachloride	ND	20	17.0	85.0	20	17.0	85.0	0	30	48	151
Chlorobenzene	ND	20	19.0	95.0	20	18.0	90.0	5.41	21	38	130
Chloroethane	ND	20	18.0	90.0	20	16.0	80.0	11.8	30	29	161
Chloroform	ND	20	17.0	85.0	20	17.0	85.0	0	30	34	153
Chloromethane	ND	20	20.0	100	20	21.0	105	4.88	30	31	151
Dibromochloromethane	ND	20	20.0	100	20	20.0	100	0	30	31	127
Dibromomethane	ND	20	19.0	95.0	20	18.0	90.0	5.41	30	30	141
Dichlorodifluoromethane	ND	20	13.0	65.0	20	12.0	60.0	8.00	30	15	167
Ethylbenzene	ND	20	19.0	95.0	20	18.0	90.0	5.41	30	39	135
Hexachlorobutadiene	ND	20	12.0	60.0	20	12.0	60.0	0	30	10	149
Isopropylbenzene	ND	20	16.0	80.0	20	15.0	75.0	6.45	30	25	142
Methyl tert-butyl ether	ND	40	26.0	65.0	40	25.0	62.5	3.92	30	19	142
Methylene chloride	ND	20	19.0	95.0	20	18.0	90.0	5.41	30	13	170
Naphthalene	ND	20	18.0	90.0	20	18.0	90.0	0	30	10	124
n-Butylbenzene	ND	20	14.0	70.0	20	13.0	65.0	7.41	30	10	156
n-Propylbenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	30	20	141
sec-Butylbenzene	ND	20	15.0	75.0	20	14.0	70.0	6.90	30	29	142
Styrene	ND	20	19.0	95.0	20	18.0	90.0	5.41	30	28	133
tert-Butylbenzene	ND	20	15.0	75.0	20	14.0	70.0	6.90	30	26	141
Tetrachloroethene	ND	20	19.0	95.0	20	19.0	95.0	0	30	33	149
Toluene	ND	20	21.0	105	20	20.0	100	4.88	21	49	133
Trichloroethene	ND	20	18.0	90.0	20	18.0	90.0	0	24	51	142
Trichlorofluoromethane	ND	20	16.0	80.0	20	16.0	80.0	0	30	24	184
Vinyl acetate	ND	20	16.0	80.0	20	15.0	75.0	6.45	30	10	174
Vinyl chloride	ND	20	16.0	80.0	20	16.0	80.0	0	30	29	177

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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J - Estimated value between MDL and PQL
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040281
Method: SW8260B **Lab Batch ID:** R270194

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-01
RunID: L_090413B-4983602 Units: ug/kg
Analysis Date: 04/13/2009 18:51 Analyst: E_G
Preparation Date: 04/13/2009 11:57 Prep By: E_G Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	20	19.0	95.0	20	19.0	95.0	0	30	38	151
cis-1,3-Dichloropropene	ND	20	18.0	90.0	20	18.0	90.0	0	30	31	131
m,p-Xylene	ND	40	39.0	97.5	40	37.0	92.5	5.26	30	32	140
o-Xylene	ND	20	20.0	100	20	20.0	100	0	30	36	142
trans-1,2-Dichloroethene	ND	20	19.0	95.0	20	18.0	90.0	5.41	30	41	153
trans-1,3-Dichloropropene	ND	20	17.0	85.0	20	17.0	85.0	0	30	27	128
1,2-Dichloroethene (total)	ND	40	38	95	40	37	92	2.7	30	38	153
Xylenes,Total	ND	60	59	98	60	57	95	3.4	30	32	142
Surr: 1,2-Dichloroethane-d4	ND	50	47	94.0	50	47.0	94.0	0	30	64	115
Surr: 4-Bromofluorobenzene	ND	50	50	100	50	50.0	100	0	30	65	131
Surr: Toluene-d8	ND	50	53	106	50	53.0	106	0	30	75	136

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040281
Lab Batch ID: R270264

Method Blank

RunID: Q_090414A-4985214 Units: ug/L
Analysis Date: 04/14/2009 14:10 Analyst: JC
Preparation Date: 04/14/2009 14:10 Prep By: Method

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-02A	MW-2
09040281-03A	FB-4-7-09
09040281-04A	TB-4-7-09

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	20
Acrylonitrile	ND	10
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040281
Method: SW8260B **Lab Batch ID:** R270264

Method Blank

RunID: Q_090414A-4985214 Units: ug/L
Analysis Date: 04/14/2009 14:10 Analyst: JC
Preparation Date: 04/14/2009 14:10 Prep By: Method

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	2.0
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	98.0	65-111
Surr: 4-Bromofluorobenzene	108.0	87-120
Surr: Toluene-d8	92.0	88-116

Laboratory Control Sample (LCS)

RunID: Q_090414A-4985213 Units: ug/L
Analysis Date: 04/14/2009 13:43 Analyst: JC
Preparation Date: 04/14/2009 13:43 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	19.0	95.0	71	128
1,1,1-Trichloroethane	20.0	20.0	100	61	135
1,1,2,2-Tetrachloroethane	20.0	18.0	90.0	60	133
1,1,2-Trichloroethane	20.0	18.0	90.0	77	127
1,1-Dichloroethane	20.0	20.0	100	68	132

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040281
Lab Batch ID: R270264

Laboratory Control Sample (LCS)

RunID: Q_090414A-4985213
Analysis Date: 04/14/2009 13:43
Preparation Date: 04/14/2009 13:43
Units: ug/L
Analyst: JC
Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	22.0	110	65	134
1,1-Dichloropropene	20.0	18.0	90.0	68	126
1,2,3-Trichlorobenzene	20.0	16.0	80.0	36	154
1,2,3-Trichloropropane	20.0	19.0	95.0	38	153
1,2,4-Trichlorobenzene	20.0	16.0	80.0	69	144
1,2,4-Trimethylbenzene	20.0	14.0	70.0	64	128
1,2-Dibromo-3-chloropropane	20.0	14.0	70.0	44	141
1,2-Dibromoethane	20.0	19.0	95.0	75	124
1,2-Dichlorobenzene	20.0	16.0	80.0	68	124
1,2-Dichloroethane	20.0	18.0	90.0	61	138
1,2-Dichloropropane	20.0	18.0	90.0	76	123
1,3,5-Trimethylbenzene	20.0	14.0	70.0	61	127
1,3-Dichlorobenzene	20.0	16.0	80.0	68	127
1,3-Dichloropropane	20.0	17.0	85.0	76	125
1,4-Dichlorobenzene	20.0	15.0	75.0	68	124
2,2-Dichloropropane	20.0	19.0	95.0	42	142
2-Butanone	20.0	20.0	100	22	183
2-Chloroethyl vinyl ether	20.0	18.0	90.0	10	179
2-Chlorotoluene	20.0	15.0	75.0	64	132
2-Hexanone	20.0	16.0	80.0	31	178
4-Chlorotoluene	20.0	15.0	75.0	61	132
4-Isopropyltoluene	20.0	14.0	70.0	63	136
4-Methyl-2-pentanone	20.0	16.0	80.0	10	159
Acetone	20.0	25.0	125	10	200
Acrylonitrile	20.0	20.0	100	54	155
Benzene	20.0	18.0	90.0	74	123
Bromobenzene	20.0	15.0	75.0	68	125
Bromochloromethane	20.0	21.0	105	71	124
Bromodichloromethane	20.0	19.0	95.0	72	128
Bromoform	20.0	19.0	95.0	81	135
Bromomethane	20.0	21.0	105	53	130
Carbon disulfide	20.0	27.0	135	41	143
Carbon tetrachloride	20.0	21.0	105	59	142
Chlorobenzene	20.0	18.0	90.0	75	125

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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E - Estimated Value exceeds calibration curve
MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis:	**Volatile Organics by Method 8260B**	**WorkOrder:**	**09040281**
Method:	**SW8260B**	**Lab Batch ID:**	**R270264**

Laboratory Control Sample (LCS)

RunID:	Q_090414A-4985213	Units:	ug/L
Analysis Date:	04/14/2009 13:43	Analyst:	JC
Preparation Date:	04/14/2009 13:43	Prep By:	Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	20.0	100	60	134
Chloroform	20.0	20.0	100	71	127
Chloromethane	20.0	16.0	80.0	50	139
Dibromochloromethane	20.0	18.0	90.0	65	130
Dibromomethane	20.0	20.0	100	79	124
Dichlorodifluoromethane	20.0	17.0	85.0	22	162
Ethylbenzene	20.0	17.0	85.0	72	127
Hexachlorobutadiene	20.0	16.0	80.0	45	152
Isopropylbenzene	20.0	15.0	75.0	58	130
Methyl tert-butyl ether	40.0	40.0	100	63	123
Methylene chloride	20.0	21.0	105	61	135
Naphthalene	20.0	16.0	80.0	33	148
n-Butylbenzene	20.0	14.0	70.0	62	136
n-Propylbenzene	20.0	14.0	70.0	57	131
sec-Butylbenzene	20.0	14.0	70.0	63	131
Styrene	20.0	17.0	85.0	69	120
tert-Butylbenzene	20.0	14.0	70.0	59	131
Tetrachloroethene	20.0	21.0	105	45	173
Toluene	20.0	17.0	85.0	74	126
Trichloroethene	20.0	20.0	100	79	131
Trichlorofluoromethane	20.0	23.0	115	49	153
Vinyl acetate	20.0	16.0	80.0	10	167
Vinyl chloride	20.0	20.0	100	51	148
cis-1,2-Dichloroethene	20.0	20.0	100	71	128
cis-1,3-Dichloropropene	20.0	17.0	85.0	67	128
m,p-Xylene	40.0	35.0	87.5	71	129
o-Xylene	20.0	18.0	90.0	74	130
trans-1,2-Dichloroethene	20.0	21.0	105	66	128
trans-1,3-Dichloropropene	20.0	16.0	80.0	60	128
1,2-Dichloroethene (total)	40	41	100	66	128
Xylenes,Total	60	53	88	71	130
Surr: 1,2-Dichloroethane-d4	50.0	48	96.0	65	111
Surr: 4-Bromofluorobenzene	50.0	56	112	87	120
Surr: Toluene-d8	50.0	46	92.0	88	116

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040281
Method: SW8260B **Lab Batch ID:** R270264

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	68	124
1,1,1-Trichloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	69	123
1,1,2,2-Tetrachloroethane	ND	20	20.0	100	20	20.0	100	0	20	69	130
1,1,2-Trichloroethane	ND	20	20.0	100	20	20.0	100	0	20	75	126
1,1-Dichloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	65	129
1,1-Dichloroethene	ND	20	23.0	115	20	23.0	115	0	22	61	139
1,1-Dichloropropene	ND	20	21.0	105	20	20.0	100	4.88	20	69	121
1,2,3-Trichlorobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	53	127
1,2,3-Trichloropropane	ND	20	20.0	100	20	19.0	95.0	5.13	20	79	124
1,2,4-Trichlorobenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	58	118
1,2,4-Trimethylbenzene	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	43	132
1,2-Dibromo-3-chloropropane	ND	20	15.0	75.0	20	14.0	70.0	6.90	20	46	131
1,2-Dibromoethane	ND	20	20.0	100	20	20.0	100	0	20	76	122
1,2-Dichlorobenzene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	74	110
1,2-Dichloroethane	ND	20	18.0	90.0	20	18.0	90.0	0	20	60	129
1,2-Dichloropropane	ND	20	20.0	100	20	19.0	95.0	5.13	20	76	116
1,3,5-Trimethylbenzene	ND	20	15.0	75.0	20	14.0	70.0	6.90	20	51	121
1,3-Dichlorobenzene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	71	110
1,3-Dichloropropane	ND	20	19.0	95.0	20	18.0	90.0	5.41	20	80	119
1,4-Dichlorobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	69	110
2,2-Dichloropropane	ND	20	22.0	110	20	22.0	110	0	20	52	122
2-Butanone	ND	20	21.0	105	20	21.0	105	0	20	10	133
2-Chloroethyl vinyl ether	ND	20	0	0 *	20	0	0 *	0	20	10	182
2-Chlorotoluene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	69	112
2-Hexanone	ND	20	16.0	80.0	20	16.0	80.0	0	20	10	163
4-Chlorotoluene	ND	20	17.0	85.0	20	17.0	85.0	0	20	37	110
4-Isopropyltoluene	ND	20	16.0	80.0	20	16.0	80.0	0	20	65	116
4-Methyl-2-pentanone	ND	20	17.0	85.0	20	17.0	85.0	0	20	10	103
Acetone	ND	20	22.0	110	20	22.0	110	0	20	10	160
Acrylonitrile	ND	20	20.0	100	20	20.0	100	0	20	45	155

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040281
Method: SW8260B **Lab Batch ID:** R270264

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	21.0	105	20	20.0	100	4.88	22	70	124
Bromobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	72	111
Bromochloromethane	ND	20	25.0	125	20	24.0	120	4.08	20	73	126
Bromodichloromethane	ND	20	20.0	100	20	18.0	90.0	10.5	20	68	125
Bromoform	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	44	132
Bromomethane	ND	20	23.0	115	20	21.0	105	9.09	20	50	140
Carbon disulfide	ND	20	21.0	105	20	20.0	100	4.88	20	46	143
Carbon tetrachloride	ND	20	20.0	100	20	20.0	100	0	20	66	126
Chlorobenzene	ND	20	21.0	105	20	20.0	100	4.88	21	68	123
Chloroethane	ND	20	22.0	110	20	21.0	105	4.65	20	59	134
Chloroform	ND	20	21.0	105	20	20.0	100	4.88	20	68	127
Chloromethane	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	51	137
Dibromochloromethane	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	58	131
Dibromomethane	ND	20	22.0	110	20	20.0	100	9.52	20	82	123
Dichlorodifluoromethane	ND	20	16.0	80.0	20	17.0	85.0	6.06	20	35	143
Ethylbenzene	ND	20	20.0	100	20	19.0	95.0	5.13	20	76	122
Hexachlorobutadiene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	43	137
Isopropylbenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	57	124
Methyl tert-butyl ether	ND	40	43.0	108	40	42.0	105	2.35	20	10	200
Methylene chloride	ND	20	23.0	115	20	22.0	110	4.44	20	70	134
Naphthalene	ND	20	16.0	80.0	20	16.0	80.0	0	20	42	140
n-Butylbenzene	ND	20	16.0	80.0 *	20	16.0	80.0 *	0	20	82	112
n-Propylbenzene	ND	20	16.0	80.0	20	16.0	80.0	0	20	73	108
sec-Butylbenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	76	110
Styrene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	58	152
tert-Butylbenzene	ND	20	15.0	75.0	20	15.0	75.0	0	20	66	120
Tetrachloroethene	ND	20	25.0	125	20	25.0	125	0	20	71	130
Toluene	ND	20	20.0	100	20	20.0	100	0	24	80	117
Trichloroethene	ND	20	23.0	115	20	22.0	110	4.44	21	82	121
Trichlorofluoromethane	ND	20	21.0	105	20	21.0	105	0	20	74	138
Vinyl acetate	ND	20	18.0	90.0	20	18.0	90.0	0	20	66	135
Vinyl chloride	ND	20	20.0	100	20	19.0	95.0	5.13	20	45	143

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040281
Method: SW8260B **Lab Batch ID:** R270264

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	20	25.0	125	20	23.0	115	8.33	20	67	132
cis-1,3-Dichloropropene	ND	20	18.0	90.0	20	16.0	80.0	11.8	20	67	116
m,p-Xylene	ND	40	40.0	100	40	38.0	95.0	5.13	20	69	127
o-Xylene	ND	20	21.0	105	20	20.0	100	4.88	20	84	114
trans-1,2-Dichloroethene	ND	20	24.0	120	20	23.0	115	4.26	20	68	131
trans-1,3-Dichloropropene	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	56	131
1,2-Dichloroethene (total)	ND	40	49	120	40	46	120	6.3	20	67	132
Xylenes,Total	ND	60	61	100	60	58	97	5.0	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	50	49	98.0	50	49.0	98.0	0	30	65	111
Surr: 4-Bromofluorobenzene	ND	50	53	106	50	54.0	108	1.87	30	87	120
Surr: Toluene-d8	ND	50	47	94.0	50	48.0	96.0	2.11	30	88	116

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Alkalinity (as CaCO3), Total
Method: E310.1
WorkOrder: 09040281
Lab Batch ID: R270144

Method Blank

RunID: WET_090413F-4982657 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-02F	MW-2

Analyte	Result	Rep Limit
Alkalinity, Total (As CaCO3)	ND	2.0

Laboratory Control Sample (LCS)

RunID: WET_090413F-4982659 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Total (As CaCO3)	38.70	39.00	100.8	90	110

Sample Duplicate

Original Sample: 09040278-01
RunID: WET_090413F-4982660 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Total (As CaCO3)	174	175	0.573	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Ion Chromatography **WorkOrder:** 09040281
Method: E300.0 **Lab Batch ID:** R270277A

Method Blank

RunID: IC2_090409A-4984862 Units: mg/L
Analysis Date: 04/09/2009 12:18 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-02F	MW-2

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090409A-4984863 Units: mg/L
Analysis Date: 04/09/2009 12:36 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10.00	9.147	91.47	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040169-02
RunID: IC2_090409A-4984879 Units: mg/L
Analysis Date: 04/09/2009 18:26 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	10	10.10	101.0	10	10.09	100.9	0.06932	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
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HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Ion Chromatography **WorkOrder:** 09040281
Method: E300.0 **Lab Batch ID:** R270281

Method Blank

RunID: IC2_090414B-4984924 Units: mg/L
Analysis Date: 04/09/2009 12:18 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-02F	MW-2

Analyte	Result	Rep Limit
Sulfate	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090414B-4984925 Units: mg/L
Analysis Date: 04/09/2009 12:36 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10.00	9.751	97.51	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040009-04
RunID: IC2_090414B-4984929 Units: mg/L
Analysis Date: 04/09/2009 17:51 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	9.802	10	22.03	122.3 *	10	21.47	116.7	2.565	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 09040281
Lab Batch ID: R270297

Method Blank

RunID: IC2_090414D-4985092 Units: mg/L
Analysis Date: 04/14/2009 10:38 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040281-02F	MW-2

Analyte	Result	Rep Limit
Chloride	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090414D-4985093 Units: mg/L
Analysis Date: 04/14/2009 10:55 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	10.00	10.52	105.2	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040254-01
RunID: IC2_090414D-4985097 Units: mg/L
Analysis Date: 04/14/2009 12:05 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	ND	10	10.68	106.8	10	10.66	106.6	0.2155	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**09040281**	Received By:	**BF**
Date and Time Received:	**4/9/2009 10:00:00 AM**	Carrier name:	**FedEx**
Temperature:	**3.0°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?** 1 Received 3 vials w/HCL for CH4 Methane but not written on chain, Per email logged in for Methane.	Yes ☐	No ☑	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☐	Not Applicable ☑

***VOA Preservation Checked After Sample Analysis**

SPL Representative: Rodriguez, Alisha C. **Contact Date & Time:** 4/9/2009 2:53:00 PM

Client Name Contacted: Rick Rexroad w/Brown & Caldwell

Non Conformance Issues:

Client Instructions: Client emailed back at 13:31 on Monday 04/13/09 requesting that the extra vials be analyzed for Methane only

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 322328

09040281

page 1 of 1

Client Name: Brown and Caldwell
Address: 1415 Louisiana #2500
City: Houston State: TX Zip: 77002
Phone/Fax: 713-759-0999 / 713-308-3882
Client Contact: Rick Rexroad Email: RRexroad@Browncald.com
Project Name/No.: 128125
Site Name: Fracmaster (BJ Services)
Site Location: Hobbs, NM
Invoice To: RRexroad Ph: 713-646-1129

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: TPH-GRO/DRO/TPH-MO	VOCs (Method 8260)	SVOCs (Method 8270)	Chloride (Method 300.0)	TPH-GRO/VOCs	Nitrate/Sulfate/Alk	Alkalinity
MW5-50-51	4-7-09	1126		X	S	G	4	no	1					X		
MW-2		1144		X	W	VAP	40	HCl	14	X	X	X	X		X	
FB-4-7-09		1243		X	W	V	40	Lab	3		X					
TB-4-7-09		1246		X	W	V	40	Lab	2		X					

RUSH

Client/Consultant Remarks:

Laboratory remarks:

Intact? Y N
Ice? Y N
Temp: 3.0c

Requested TAT

- 1 Business Day
- 2 Business Days
- 3 Business Days
- Contract
- Standard
- Other

Rush TAT requires prior notice

Special Reporting Requirements Results: Fax Email PDF
Standard QC Level 3 QC Level 4 QC TX TRRP LA RECAP

Special Detection Limits (specify):

PM review (initial): AK

1. Relinquished by Sampler:	date 4/7/09	time 1500	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 4/9/09	time 1000	6. Received by Laboratory:

8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09040283

Report To:		Project Name:	Fracmaster BJ Service -#128125
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	4/23/2009
ph: (713) 759-0999	fax: (713) 308-3886		

This Report Contains A Total Of 24 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

4/23/2009

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09040283

Report To:		Project Name:	Fracmaster BJ Service -#128125
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-			
ph: (713) 759-0999	fax: (713) 308-3886	Date Reported:	4/23/2009

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

For Volatile Organics analysis (8260B), the results for 2-chloroethyl vinyl ether are estimated due to sample preservation. The result for this compound is reported as "ND J" for all samples in the report.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 89427 for the Semivolatile Hydrocarbons analysis by Method 8015B. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID:89412 for the Semivolatile Organics analysis by SW846 Method 8270C. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Agnes V. Vicknair

4/23/2009

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09040283

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: Fracmaster BJ Service -#128125
Site: Hobbs NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 4/23/2009

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-99	09040283-01	Water	4/8/2009 10:11:00 AM	4/9/2009 10:00:00 AM	322331	☐

Agnes V. Vicknair
Project Manager

4/23/2009
Date

Kesavalu M. Bagawandoss
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-99 **Collected:** 04/08/2009 10:11 **SPL Sample ID:** 09040283-01

Site: Hobbs NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS					**MCL**	**SW8015B**	**Units: mg/L**	
Gasoline Range Organics	ND			0.1	1	04/13/09 17:47	CLJ	4984674
Surr: 1,4-Difluorobenzene	91.2		%	60-155	1	04/13/09 17:47	CLJ	4984674
Surr: 4-Bromofluorobenzene	105		%	50-158	1	04/13/09 17:47	CLJ	4984674
SEMIVOLATILE HYDROCARBONS					**MCL**	**SW8015B**	**Units: mg/L**	
Diesel Range Organics	0.24			0.1	1	04/17/09 0:40	NW	4987515
Mineral Spirits Range Organics	ND			0.1	1	04/17/09 0:40	NW	4987515
Surr: n-Pentacosane	86.8		%	20-150	1	04/17/09 0:40	NW	4987515

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 14:10	N_M	1.00

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-99 **Collected:** 04/08/2009 10:11 **SPL Sample ID:** 09040283-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	04/17/09 17:41	GY	4992376
1,2-Dichlorobenzene	ND		5	1	04/17/09 17:41	GY	4992376
1,2-Diphenylhydrazine	ND		10	1	04/17/09 17:41	GY	4992376
1,3-Dichlorobenzene	ND		5	1	04/17/09 17:41	GY	4992376
1,4-Dichlorobenzene	ND		5	1	04/17/09 17:41	GY	4992376
2,4,5-Trichlorophenol	ND		10	1	04/17/09 17:41	GY	4992376
2,4,6-Trichlorophenol	ND		5	1	04/17/09 17:41	GY	4992376
2,4-Dichlorophenol	ND		5	1	04/17/09 17:41	GY	4992376
2,4-Dimethylphenol	ND		5	1	04/17/09 17:41	GY	4992376
2,4-Dinitrophenol	ND		25	1	04/17/09 17:41	GY	4992376
2,4-Dinitrotoluene	ND		5	1	04/17/09 17:41	GY	4992376
2,6-Dinitrotoluene	ND		5	1	04/17/09 17:41	GY	4992376
2-Chloronaphthalene	ND		5	1	04/17/09 17:41	GY	4992376
2-Chlorophenol	ND		5	1	04/17/09 17:41	GY	4992376
2-Methylnaphthalene	ND		5	1	04/17/09 17:41	GY	4992376
2-Nitroaniline	ND		25	1	04/17/09 17:41	GY	4992376
2-Nitrophenol	ND		5	1	04/17/09 17:41	GY	4992376
3,3'-Dichlorobenzidine	ND		10	1	04/17/09 17:41	GY	4992376
3-Nitroaniline	ND		25	1	04/17/09 17:41	GY	4992376
4,6-Dinitro-2-methylphenol	ND		25	1	04/17/09 17:41	GY	4992376
4-Bromophenyl phenyl ether	ND		5	1	04/17/09 17:41	GY	4992376
4-Chloro-3-methylphenol	ND		5	1	04/17/09 17:41	GY	4992376
4-Chloroaniline	ND		5	1	04/17/09 17:41	GY	4992376
4-Chlorophenyl phenyl ether	ND		5	1	04/17/09 17:41	GY	4992376
4-Nitroaniline	ND		25	1	04/17/09 17:41	GY	4992376
4-Nitrophenol	ND		25	1	04/17/09 17:41	GY	4992376
Acenaphthene	ND		5	1	04/17/09 17:41	GY	4992376
Acenaphthylene	ND		5	1	04/17/09 17:41	GY	4992376
Aniline	ND		5	1	04/17/09 17:41	GY	4992376
Anthracene	ND		5	1	04/17/09 17:41	GY	4992376
Benz(a)anthracene	ND		5	1	04/17/09 17:41	GY	4992376
Benzo(a)pyrene	ND		5	1	04/17/09 17:41	GY	4992376
Benzo(b)fluoranthene	ND		5	1	04/17/09 17:41	GY	4992376
Benzo(g,h,i)perylene	ND		5	1	04/17/09 17:41	GY	4992376
Benzo(k)fluoranthene	ND		5	1	04/17/09 17:41	GY	4992376
Benzoic acid	ND		25	1	04/17/09 17:41	GY	4992376
Benzyl alcohol	ND		5	1	04/17/09 17:41	GY	4992376
Bis(2-chloroethoxy)methane	ND		5	1	04/17/09 17:41	GY	4992376
Bis(2-chloroethyl)ether	ND		5	1	04/17/09 17:41	GY	4992376

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-99 **Collected:** 04/08/2009 10:11 **SPL Sample ID:** 09040283-01

Site: Hobbs NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND			5	1	04/17/09 17:41	GY	4992376
Bis(2-ethylhexyl)phthalate	ND			5	1	04/17/09 17:41	GY	4992376
Butyl benzyl phthalate	ND			5	1	04/17/09 17:41	GY	4992376
Carbazole	ND			5	1	04/17/09 17:41	GY	4992376
Chrysene	ND			5	1	04/17/09 17:41	GY	4992376
Dibenz(a,h)anthracene	ND			5	1	04/17/09 17:41	GY	4992376
Dibenzofuran	ND			5	1	04/17/09 17:41	GY	4992376
Diethyl phthalate	ND			5	1	04/17/09 17:41	GY	4992376
Dimethyl phthalate	ND			5	1	04/17/09 17:41	GY	4992376
Di-n-butyl phthalate	ND			5	1	04/17/09 17:41	GY	4992376
Di-n-octyl phthalate	ND			5	1	04/17/09 17:41	GY	4992376
Fluoranthene	ND			5	1	04/17/09 17:41	GY	4992376
Fluorene	ND			5	1	04/17/09 17:41	GY	4992376
Hexachlorobenzene	ND			5	1	04/17/09 17:41	GY	4992376
Hexachlorobutadiene	ND			5	1	04/17/09 17:41	GY	4992376
Hexachlorocyclopentadiene	ND			5	1	04/17/09 17:41	GY	4992376
Hexachloroethane	ND			5	1	04/17/09 17:41	GY	4992376
Indeno(1,2,3-cd)pyrene	ND			5	1	04/17/09 17:41	GY	4992376
Isophorone	ND			5	1	04/17/09 17:41	GY	4992376
Naphthalene	ND			5	1	04/17/09 17:41	GY	4992376
Nitrobenzene	ND			5	1	04/17/09 17:41	GY	4992376
N-Nitrosodi-n-propylamine	ND			5	1	04/17/09 17:41	GY	4992376
N-Nitrosodiphenylamine	ND			5	1	04/17/09 17:41	GY	4992376
Pentachlorophenol	ND			25	1	04/17/09 17:41	GY	4992376
Phenanthrene	ND			5	1	04/17/09 17:41	GY	4992376
Phenol	ND			5	1	04/17/09 17:41	GY	4992376
Pyrene	ND			5	1	04/17/09 17:41	GY	4992376
Pyridine	ND			5	1	04/17/09 17:41	GY	4992376
2-Methylphenol	ND			5	1	04/17/09 17:41	GY	4992376
3 & 4-Methylphenol	ND			5	1	04/17/09 17:41	GY	4992376
Surr: 2,4,6-Tribromophenol	81.9		%	10-123	1	04/17/09 17:41	GY	4992376
Surr: 2-Fluorobiphenyl	61.4		%	23-116	1	04/17/09 17:41	GY	4992376
Surr: 2-Fluorophenol	49.1		%	16-110	1	04/17/09 17:41	GY	4992376
Surr: Nitrobenzene-d5	58.0		%	21-114	1	04/17/09 17:41	GY	4992376
Surr: Phenol-d5	33.5		%	10-110	1	04/17/09 17:41	GY	4992376
Surr: Terphenyl-d14	55.0		%	22-141	1	04/17/09 17:41	GY	4992376

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 8:15	N_M	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-99 **Collected:** 04/08/2009 10:11 **SPL Sample ID:** 09040283-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/14/09 20:57	JC	4985229
1,1,1-Trichloroethane	ND		5	1	04/14/09 20:57	JC	4985229
1,1,2,2-Tetrachloroethane	ND		5	1	04/14/09 20:57	JC	4985229
1,1,2-Trichloroethane	ND		5	1	04/14/09 20:57	JC	4985229
1,1-Dichloroethane	ND		5	1	04/14/09 20:57	JC	4985229
1,1-Dichloroethene	ND		5	1	04/14/09 20:57	JC	4985229
1,1-Dichloropropene	ND		5	1	04/14/09 20:57	JC	4985229
1,2,3-Trichlorobenzene	ND		5	1	04/14/09 20:57	JC	4985229
1,2,3-Trichloropropane	ND		5	1	04/14/09 20:57	JC	4985229
1,2,4-Trichlorobenzene	ND		5	1	04/14/09 20:57	JC	4985229
1,2,4-Trimethylbenzene	ND		5	1	04/14/09 20:57	JC	4985229
1,2-Dibromo-3-chloropropane	ND		5	1	04/14/09 20:57	JC	4985229
1,2-Dibromoethane	ND		5	1	04/14/09 20:57	JC	4985229
1,2-Dichlorobenzene	ND		5	1	04/14/09 20:57	JC	4985229
1,2-Dichloroethane	ND		5	1	04/14/09 20:57	JC	4985229
1,2-Dichloropropane	ND		5	1	04/14/09 20:57	JC	4985229
1,3,5-Trimethylbenzene	ND		5	1	04/14/09 20:57	JC	4985229
1,3-Dichlorobenzene	ND		5	1	04/14/09 20:57	JC	4985229
1,3-Dichloropropane	ND		5	1	04/14/09 20:57	JC	4985229
1,4-Dichlorobenzene	ND		5	1	04/14/09 20:57	JC	4985229
2,2-Dichloropropane	ND		5	1	04/14/09 20:57	JC	4985229
2-Butanone	ND		20	1	04/14/09 20:57	JC	4985229
2-Chloroethyl vinyl ether	ND J		10	1	04/14/09 20:57	JC	4985229
2-Chlorotoluene	ND		5	1	04/14/09 20:57	JC	4985229
2-Hexanone	ND		10	1	04/14/09 20:57	JC	4985229
4-Chlorotoluene	ND		5	1	04/14/09 20:57	JC	4985229
4-Isopropyltoluene	ND		5	1	04/14/09 20:57	JC	4985229
4-Methyl-2-pentanone	ND		10	1	04/14/09 20:57	JC	4985229
Acetone	ND		20	1	04/14/09 20:57	JC	4985229
Acrylonitrile	ND		10	1	04/14/09 20:57	JC	4985229
Benzene	ND		5	1	04/14/09 20:57	JC	4985229
Bromobenzene	ND		5	1	04/14/09 20:57	JC	4985229
Bromochloromethane	ND		5	1	04/14/09 20:57	JC	4985229
Bromodichloromethane	ND		5	1	04/14/09 20:57	JC	4985229
Bromoform	ND		5	1	04/14/09 20:57	JC	4985229
Bromomethane	ND		10	1	04/14/09 20:57	JC	4985229
Carbon disulfide	ND		5	1	04/14/09 20:57	JC	4985229
Carbon tetrachloride	ND		5	1	04/14/09 20:57	JC	4985229
Chlorobenzene	ND		5	1	04/14/09 20:57	JC	4985229

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-99 **Collected:** 04/08/2009 10:11 **SPL Sample ID:** 09040283-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/14/09 20:57	JC	4985229
Chloroform	ND		5	1	04/14/09 20:57	JC	4985229
Chloromethane	ND		10	1	04/14/09 20:57	JC	4985229
Dibromochloromethane	ND		5	1	04/14/09 20:57	JC	4985229
Dibromomethane	ND		5	1	04/14/09 20:57	JC	4985229
Dichlorodifluoromethane	ND		10	1	04/14/09 20:57	JC	4985229
Ethylbenzene	ND		5	1	04/14/09 20:57	JC	4985229
Hexachlorobutadiene	ND		5	1	04/14/09 20:57	JC	4985229
Isopropylbenzene	ND		5	1	04/14/09 20:57	JC	4985229
Methyl tert-butyl ether	ND		5	1	04/14/09 20:57	JC	4985229
Methylene chloride	ND		5	1	04/14/09 20:57	JC	4985229
Naphthalene	ND		5	1	04/14/09 20:57	JC	4985229
n-Butylbenzene	ND		5	1	04/14/09 20:57	JC	4985229
n-Propylbenzene	ND		5	1	04/14/09 20:57	JC	4985229
sec-Butylbenzene	ND		5	1	04/14/09 20:57	JC	4985229
Styrene	ND		5	1	04/14/09 20:57	JC	4985229
tert-Butylbenzene	ND		5	1	04/14/09 20:57	JC	4985229
Tetrachloroethene	ND		5	1	04/14/09 20:57	JC	4985229
Toluene	ND		5	1	04/14/09 20:57	JC	4985229
Trichloroethene	ND		5	1	04/14/09 20:57	JC	4985229
Trichlorofluoromethane	ND		5	1	04/14/09 20:57	JC	4985229
Vinyl acetate	ND		10	1	04/14/09 20:57	JC	4985229
Vinyl chloride	ND		2	1	04/14/09 20:57	JC	4985229
cis-1,2-Dichloroethene	ND		5	1	04/14/09 20:57	JC	4985229
cis-1,3-Dichloropropene	ND		5	1	04/14/09 20:57	JC	4985229
m,p-Xylene	ND		5	1	04/14/09 20:57	JC	4985229
o-Xylene	ND		5	1	04/14/09 20:57	JC	4985229
trans-1,2-Dichloroethene	ND		5	1	04/14/09 20:57	JC	4985229
trans-1,3-Dichloropropene	ND		5	1	04/14/09 20:57	JC	4985229
1,2-Dichloroethene (total)	ND		5	1	04/14/09 20:57	JC	4985229
Xylenes,Total	ND		5	1	04/14/09 20:57	JC	4985229
Surr: 1,2-Dichloroethane-d4	98.0		% 65-111	1	04/14/09 20:57	JC	4985229
Surr: 4-Bromofluorobenzene	108		% 87-120	1	04/14/09 20:57	JC	4985229
Surr: Toluene-d8	94.0		% 88-116	1	04/14/09 20:57	JC	4985229

Qualifiers:

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Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Semivolatile Hydrocarbons
Method: SW8015B
WorkOrder: 09040283
Lab Batch ID: 89427

Method Blank

RunID: HP_V_090416B-4987505
Units: mg/L
Analysis Date: 04/14/2009 23:43
Analyst: NW
Preparation Date: 04/13/2009 14:10
Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040283-01D	MW-99

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.10
Mineral Spirits Range Organics	ND	0.10
Surr: n-Pentacosane	51.2	20-150

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HP_V_090416B-4987506
Units: mg/L
Analysis Date: 04/15/2009 0:03
Analyst: NW
Preparation Date: 04/13/2009 14:10
Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics	1.00	0.895	89.5	1.00	0.880	88.0	1.7	40	21	150
Surr: n-Pentacosane	0.0500	0.0494	98.8	0.0500	0.0485	97.0	1.8	30	20	150

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
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QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Gasoline Range Organics **WorkOrder:** 09040283
Method: SW8015B **Lab Batch ID:** R270269

Method Blank

RunID: HP_P_090413A-4984662 Units: mg/L
Analysis Date: 04/13/2009 5:20 Analyst: CLJ

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040283-01B	MW-99

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	91.5	60-155
Surr: 4-Bromofluorobenzene	104.0	50-158

Laboratory Control Sample (LCS)

RunID: HP_P_090413A-4984660 Units: mg/L
Analysis Date: 04/13/2009 4:22 Analyst: CLJ

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	0.859	85.9	42	136
Surr: 1,4-Difluorobenzene	0.100	0.0949	94.9	60	155
Surr: 4-Bromofluorobenzene	0.100	0.108	108	50	158

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040343-01
RunID: HP_P_090413A-4984664 Units: mg/L
Analysis Date: 04/13/2009 10:44 Analyst: CLJ

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	1	0.852	85.2	1	0.868	86.8	1.92	36	22	174
Surr: 1,4-Difluorobenzene	ND	0.1	0.0922	92.2	0.1	0.0932	93.2	1.08	30	60	155
Surr: 4-Bromofluorobenzene	ND	0.1	0.105	105	0.1	0.107	107	1.41	30	50	158

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040283
Method: SW8270C **Lab Batch ID:** 89412

Method Blank

RunID: H_090417E-4992370 Units: ug/L
Analysis Date: 04/17/2009 9:40 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040283-01C	MW-99

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Diphenylhydrazine	ND	10
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,4,5-Trichlorophenol	ND	10
2,4,6-Trichlorophenol	ND	5.0
2,4-Dichlorophenol	ND	5.0
2,4-Dimethylphenol	ND	5.0
2,4-Dinitrophenol	ND	25
2,4-Dinitrotoluene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Chlorophenol	ND	5.0
2-Methylnaphthalene	ND	5.0
2-Nitroaniline	ND	25
2-Nitrophenol	ND	5.0
3,3'-Dichlorobenzidine	ND	10
3-Nitroaniline	ND	25
4,6-Dinitro-2-methylphenol	ND	25
4-Bromophenyl phenyl ether	ND	5.0
4-Chloro-3-methylphenol	ND	5.0
4-Chloroaniline	ND	5.0
4-Chlorophenyl phenyl ether	ND	5.0
4-Nitroaniline	ND	25
4-Nitrophenol	ND	25
Acenaphthene	ND	5.0
Acenaphthylene	ND	5.0
Aniline	ND	5.0
Anthracene	ND	5.0
Benz(a)anthracene	ND	5.0
Benzo(a)pyrene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzoic acid	ND	25
Benzyl alcohol	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Butyl benzyl phthalate	ND	5.0
Carbazole	ND	5.0
Chrysene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Dibenzofuran	ND	5.0

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040283
Method: SW8270C **Lab Batch ID:** 89412

Method Blank

RunID: H_090417E-4992370 Units: ug/L
Analysis Date: 04/17/2009 9:40 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	5.0
Dimethyl phthalate	ND	5.0
Di-n-butyl phthalate	ND	5.0
Di-n-octyl phthalate	ND	5.0
Fluoranthene	ND	5.0
Fluorene	ND	5.0
Hexachlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
Hexachloroethane	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Isophorone	ND	5.0
Naphthalene	ND	5.0
Nitrobenzene	ND	5.0
N-Nitrosodi-n-propylamine	ND	5.0
N-Nitrosodiphenylamine	ND	5.0
Pentachlorophenol	ND	25
Phenanthrene	ND	5.0
Phenol	ND	5.0
Pyrene	ND	5.0
Pyridine	ND	5.0
2-Methylphenol	ND	5.0
3 & 4-Methylphenol	ND	5.0
Surr: 2,4,6-Tribromophenol	95.2	10-123
Surr: 2-Fluorobiphenyl	72.6	23-116
Surr: 2-Fluorophenol	76.1	16-110
Surr: Nitrobenzene-d5	68.4	21-114
Surr: Phenol-d5	62.5	10-110
Surr: Terphenyl-d14	68.4	22-141

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2,4-Trichlorobenzene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	39	21	120
1,2-Dichlorobenzene	25.0	15.4	61.6	25.0	16.7	66.8	8.1	50	20	150

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040283
Method: SW8270C **Lab Batch ID:** 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Diphenylhydrazine	25.0	16.5	66.0	25.0	17.6	70.4	6.5	50	10	251
1,3-Dichlorobenzene	25.0	15.4	61.6	25.0	16.5	66.0	6.9	50	20	150
1,4-Dichlorobenzene	25.0	15.3	61.2	25.0	16.2	64.8	5.7	45	20	150
2,4,5-Trichlorophenol	25.0	14.9	59.6	25.0	15.4	61.6	3.3	50	30	150
2,4,6-Trichlorophenol	25.0	15.2	60.8	25.0	16.0	64.0	5.1	50	30	150
2,4-Dichlorophenol	25.0	14.5	58.0	25.0	15.9	63.6	9.2	50	30	150
2,4-Dimethylphenol	25.0	15.4	61.6	25.0	16.0	64.0	3.8	50	32	140
2,4-Dinitrophenol	25.0	11.9	47.6	25.0	12.8	51.2	7.3	50	10	160
2,4-Dinitrotoluene	25.0	16.1	64.4	25.0	16.3	65.2	1.2	50	30	150
2,6-Dinitrotoluene	25.0	15.8	63.2	25.0	15.7	62.8	0.6	50	30	150
2-Chloronaphthalene	25.0	15.8	63.2	25.0	16.5	66.0	4.3	50	30	150
2-Chlorophenol	25.0	15.4	61.6	25.0	15.9	63.6	3.2	40	23	134
2-Methylnaphthalene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	50	20	170
2-Nitroaniline	25.0	14.8	59.2	25.0	15.9	63.6	7.2	50	20	160
2-Nitrophenol	25.0	14.9	59.6	25.0	15.8	63.2	5.9	50	29	182
3,3'-Dichlorobenzidine	25.0	13.3	53.2	25.0	13.7	54.8	3.0	50	30	200
3-Nitroaniline	25.0	14.4	57.6	25.0	14.8	59.2	2.7	50	20	160
4,6-Dinitro-2-methylphenol	25.0	13.7	54.8	25.0	14.2	56.8	3.6	50	10	160
4-Bromophenyl phenyl ether	25.0	15.6	62.4	25.0	15.8	63.2	1.3	50	30	150
4-Chloro-3-methylphenol	25.0	15.2	60.8	25.0	16.1	64.4	5.8	42	25	160
4-Chloroaniline	25.0	15.5	62.0	25.0	16.2	64.8	4.4	50	20	160
4-Chlorophenyl phenyl ether	25.0	15.7	62.8	25.0	16.3	65.2	3.8	50	25	158
4-Nitroaniline	25.0	13.9	55.6	25.0	14.8	59.2	6.3	50	20	160
4-Nitrophenol	25.0	13.0	52.0	25.0	14.8	59.2	12.9	50	10	132
Acenaphthene	25.0	15.3	61.2	25.0	16.3	65.2	6.3	31	30	150
Acenaphthylene	25.0	15.4	61.6	25.0	16.4	65.6	6.3	50	33	250
Aniline	50.0	29.9	59.8	50.0	30.9	61.8	3.3	50	10	135
Anthracene	25.0	15.6	62.4	25.0	16.5	66.0	5.6	50	27	133
Benz(a)anthracene	25.0	15.6	62.4	25.0	16.4	65.6	5.0	50	33	143
Benzo(a)pyrene	25.0	12.2	48.8	25.0	12.7	50.8	4.0	50	17	163
Benzo(b)fluoranthene	25.0	14.9	59.6	25.0	15.2	60.8	2.0	50	24	159
Benzo(g,h,i)perylene	25.0	15.7	62.8	25.0	15.9	63.6	1.3	50	30	160
Benzo(k)fluoranthene	25.0	15.0	60.0	25.0	15.2	60.8	1.3	50	11	162

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040283
Method: SW8270C **Lab Batch ID:** 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzoic acid	25.0	15.7	62.8	25.0	16.0	64.0	1.9	50	10	400
Benzyl alcohol	25.0	14.7	58.8	25.0	16.2	64.8	9.7	50	30	160
Bis(2-chloroethoxy)methane	25.0	15.2	60.8	25.0	15.8	63.2	3.9	50	33	184
Bis(2-chloroethyl)ether	25.0	15.8	63.2	25.0	16.7	66.8	5.5	50	12	158
Bis(2-chloroisopropyl)ether	25.0	15.6	62.4	25.0	16.1	64.4	3.2	50	20	160
Bis(2-ethylhexyl)phthalate	25.0	16.1	64.4	25.0	17.0	68.0	5.4	50	10	158
Butyl benzyl phthalate	25.0	16.3	65.2	25.0	17.0	68.0	4.2	50	30	160
Carbazole	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	30	150
Chrysene	25.0	15.0	60.0	25.0	16.0	64.0	6.5	50	17	168
Dibenz(a,h)anthracene	25.0	15.5	62.0	25.0	15.7	62.8	1.3	50	30	160
Dibenzofuran	25.0	15.7	62.8	25.0	16.4	65.6	4.4	50	30	150
Diethyl phthalate	25.0	16.0	64.0	25.0	17.1	68.4	6.6	50	30	160
Dimethyl phthalate	25.0	15.7	62.8	25.0	16.8	67.2	6.8	50	30	160
Di-n-butyl phthalate	25.0	16.6	66.4	25.0	17.1	68.4	3.0	50	30	160
Di-n-octyl phthalate	25.0	16.2	64.8	25.0	17.0	68.0	4.8	50	20	150
Fluoranthene	25.0	15.9	63.6	25.0	16.3	65.2	2.5	50	26	137
Fluorene	25.0	15.4	61.6	25.0	16.3	65.2	5.7	50	30	150
Hexachlorobenzene	25.0	15.4	61.6	25.0	16.6	66.4	7.5	50	20	150
Hexachlorobutadiene	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	20	140
Hexachlorocyclopentadiene	25.0	17.2	68.8	25.0	19.1	76.4	10.5	50	10	150
Hexachloroethane	25.0	15.0	60.0	25.0	16.3	65.2	8.3	50	14	120
Indeno(1,2,3-cd)pyrene	25.0	16.3	65.2	25.0	17.5	70.0	7.1	50	30	160
Isophorone	25.0	16.2	64.8	25.0	17.3	69.2	6.6	50	21	196
Naphthalene	25.0	15.4	61.6	25.0	16.2	64.8	5.1	50	21	133
Nitrobenzene	25.0	15.3	61.2	25.0	16.0	64.0	4.5	50	20	160
N-Nitrosodi-n-propylamine	25.0	15.6	62.4	25.0	15.4	61.6	1.3	38	30	160
N-Nitrosodiphenylamine	50.0	38.0	76.0	50.0	40.4	80.8	6.1	50	30	150
Pentachlorophenol	25.0	11.5	46.0	25.0	12.8	51.2	10.7	50	14	176
Phenanthrene	25.0	15.3	61.2	25.0	16.1	64.4	5.1	50	10	140
Phenol	25.0	15.2	60.8	25.0	15.8	63.2	3.9	42	40	132
Pyrene	25.0	15.8	63.2	25.0	16.6	66.4	4.9	38	30	150
Pyridine	50.0	27.0	54.0	50.0	29.4	58.8	8.5	50	10	150
2-Methylphenol	25.0	15.7	62.8	25.0	16.2	64.8	3.1	50	30	160

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis:	**Semivolatile Organics by Method 8270C**	**WorkOrder:**	**09040283**
Method:	**SW8270C**	**Lab Batch ID:**	**89412**

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID:	H_090417E-4992371	Units:	ug/L
Analysis Date:	04/17/2009 10:42	Analyst:	GY
Preparation Date:	04/13/2009 8:15	Prep By:	N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
3 & 4-Methylphenol	25.0	16.6	66.4	25.0	17.2	68.8	3.6	50	10	160
Surr: 2,4,6-Tribromophenol	75.0	61.1	81.5	75.0	60.8	81.1	0.5	30	10	123
Surr: 2-Fluorobiphenyl	50.0	28.6	57.2	50.0	29.5	59.0	3.1	30	23	116
Surr: 2-Fluorophenol	75.0	50.0	66.7	75.0	50.8	67.7	1.6	30	16	110
Surr: Nitrobenzene-d5	50.0	29.0	58.0	50.0	30.0	60.0	3.4	30	21	114
Surr: Phenol-d5	75.0	43.1	57.5	75.0	44.2	58.9	2.5	30	10	110
Surr: Terphenyl-d14	50.0	28.4	56.8	50.0	28.7	57.4	1.1	30	22	141

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040283
Lab Batch ID: R270264

Method Blank

RunID: Q_090414A-4985214 Units: ug/L
Analysis Date: 04/14/2009 14:10 Analyst: JC
Preparation Date: 04/14/2009 14:10 Prep By: Method

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040283-01A	MW-99

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	20
Acrylonitrile	ND	10
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Qualifiers:

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N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040283
Method: SW8260B **Lab Batch ID:** R270264

Method Blank

RunID: Q_090414A-4985214 *Units:* ug/L
Analysis Date: 04/14/2009 14:10 Analyst: JC
Preparation Date: 04/14/2009 14:10 Prep By: Method

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	2.0
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	98.0	65-111
Surr: 4-Bromofluorobenzene	108.0	87-120
Surr: Toluene-d8	92.0	88-116

Laboratory Control Sample (LCS)

RunID: Q_090414A-4985213 Units: ug/L
Analysis Date: 04/14/2009 13:43 Analyst: JC
Preparation Date: 04/14/2009 13:43 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	19.0	95.0	71	128
1,1,1-Trichloroethane	20.0	20.0	100	61	135
1,1,2,2-Tetrachloroethane	20.0	18.0	90.0	60	133
1,1,2-Trichloroethane	20.0	18.0	90.0	77	127
1,1-Dichloroethane	20.0	20.0	100	68	132

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis:	**Volatile Organics by Method 8260B**	**WorkOrder:**	**09040283**
Method:	**SW8260B**	**Lab Batch ID:**	**R270264**

Laboratory Control Sample (LCS)

RunID:	Q_090414A-4985213	Units:	ug/L
Analysis Date:	04/14/2009 13:43	Analyst:	JC
Preparation Date:	04/14/2009 13:43	Prep By:	Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	22.0	110	65	134
1,1-Dichloropropene	20.0	18.0	90.0	68	126
1,2,3-Trichlorobenzene	20.0	16.0	80.0	36	154
1,2,3-Trichloropropane	20.0	19.0	95.0	38	153
1,2,4-Trichlorobenzene	20.0	16.0	80.0	69	144
1,2,4-Trimethylbenzene	20.0	14.0	70.0	64	128
1,2-Dibromo-3-chloropropane	20.0	14.0	70.0	44	141
1,2-Dibromoethane	20.0	19.0	95.0	75	124
1,2-Dichlorobenzene	20.0	16.0	80.0	68	124
1,2-Dichloroethane	20.0	18.0	90.0	61	138
1,2-Dichloropropane	20.0	18.0	90.0	76	123
1,3,5-Trimethylbenzene	20.0	14.0	70.0	61	127
1,3-Dichlorobenzene	20.0	16.0	80.0	68	127
1,3-Dichloropropane	20.0	17.0	85.0	76	125
1,4-Dichlorobenzene	20.0	15.0	75.0	68	124
2,2-Dichloropropane	20.0	19.0	95.0	42	142
2-Butanone	20.0	20.0	100	22	183
2-Chloroethyl vinyl ether	20.0	18.0	90.0	10	179
2-Chlorotoluene	20.0	15.0	75.0	64	132
2-Hexanone	20.0	16.0	80.0	31	178
4-Chlorotoluene	20.0	15.0	75.0	61	132
4-Isopropyltoluene	20.0	14.0	70.0	63	136
4-Methyl-2-pentanone	20.0	16.0	80.0	10	159
Acetone	20.0	25.0	125	10	200
Acrylonitrile	20.0	20.0	100	54	155
Benzene	20.0	18.0	90.0	74	123
Bromobenzene	20.0	15.0	75.0	68	125
Bromochloromethane	20.0	21.0	105	71	124
Bromodichloromethane	20.0	19.0	95.0	72	128
Bromoform	20.0	19.0	95.0	81	135
Bromomethane	20.0	21.0	105	53	130
Carbon disulfide	20.0	27.0	135	41	143
Carbon tetrachloride	20.0	21.0	105	59	142
Chlorobenzene	20.0	18.0	90.0	75	125

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040283
Method: SW8260B **Lab Batch ID:** R270264

Laboratory Control Sample (LCS)

RunID: Q_090414A-4985213 Units: ug/L
Analysis Date: 04/14/2009 13:43 Analyst: JC
Preparation Date: 04/14/2009 13:43 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	20.0	100	60	134
Chloroform	20.0	20.0	100	71	127
Chloromethane	20.0	16.0	80.0	50	139
Dibromochloromethane	20.0	18.0	90.0	65	130
Dibromomethane	20.0	20.0	100	79	124
Dichlorodifluoromethane	20.0	17.0	85.0	22	162
Ethylbenzene	20.0	17.0	85.0	72	127
Hexachlorobutadiene	20.0	16.0	80.0	45	152
Isopropylbenzene	20.0	15.0	75.0	58	130
Methyl tert-butyl ether	40.0	40.0	100	63	123
Methylene chloride	20.0	21.0	105	61	135
Naphthalene	20.0	16.0	80.0	33	148
n-Butylbenzene	20.0	14.0	70.0	62	136
n-Propylbenzene	20.0	14.0	70.0	57	131
sec-Butylbenzene	20.0	14.0	70.0	63	131
Styrene	20.0	17.0	85.0	69	120
tert-Butylbenzene	20.0	14.0	70.0	59	131
Tetrachloroethene	20.0	21.0	105	45	173
Toluene	20.0	17.0	85.0	74	126
Trichloroethene	20.0	20.0	100	79	131
Trichlorofluoromethane	20.0	23.0	115	49	153
Vinyl acetate	20.0	16.0	80.0	10	167
Vinyl chloride	20.0	20.0	100	51	148
cis-1,2-Dichloroethene	20.0	20.0	100	71	128
cis-1,3-Dichloropropene	20.0	17.0	85.0	67	128
m,p-Xylene	40.0	35.0	87.5	71	129
o-Xylene	20.0	18.0	90.0	74	130
trans-1,2-Dichloroethene	20.0	21.0	105	66	128
trans-1,3-Dichloropropene	20.0	16.0	80.0	60	128
1,2-Dichloroethene (total)	40	41	100	66	128
Xylenes,Total	60	53	88	71	130
Surr: 1,2-Dichloroethane-d4	50.0	48	96.0	65	111
Surr: 4-Bromofluorobenzene	50.0	56	112	87	120
Surr: Toluene-d8	50.0	46	92.0	88	116

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis:	**Volatile Organics by Method 8260B**	**WorkOrder:**	**09040283**
Method:	**SW8260B**	**Lab Batch ID:**	**R270264**

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked:	09040281-03		
RunID:	Q_090414A-4985222	Units:	ug/L
Analysis Date:	04/14/2009 17:46	Analyst:	JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	68	124
1,1,1-Trichloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	69	123
1,1,2,2-Tetrachloroethane	ND	20	20.0	100	20	20.0	100	0	20	69	130
1,1,2-Trichloroethane	ND	20	20.0	100	20	20.0	100	0	20	75	126
1,1-Dichloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	65	129
1,1-Dichloroethene	ND	20	23.0	115	20	23.0	115	0	22	61	139
1,1-Dichloropropene	ND	20	21.0	105	20	20.0	100	4.88	20	69	121
1,2,3-Trichlorobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	53	127
1,2,3-Trichloropropane	ND	20	20.0	100	20	19.0	95.0	5.13	20	79	124
1,2,4-Trichlorobenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	58	118
1,2,4-Trimethylbenzene	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	43	132
1,2-Dibromo-3-chloropropane	ND	20	15.0	75.0	20	14.0	70.0	6.90	20	46	131
1,2-Dibromoethane	ND	20	20.0	100	20	20.0	100	0	20	76	122
1,2-Dichlorobenzene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	74	110
1,2-Dichloroethane	ND	20	18.0	90.0	20	18.0	90.0	0	20	60	129
1,2-Dichloropropane	ND	20	20.0	100	20	19.0	95.0	5.13	20	76	116
1,3,5-Trimethylbenzene	ND	20	15.0	75.0	20	14.0	70.0	6.90	20	51	121
1,3-Dichlorobenzene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	71	110
1,3-Dichloropropane	ND	20	19.0	95.0	20	18.0	90.0	5.41	20	80	119
1,4-Dichlorobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	69	110
2,2-Dichloropropane	ND	20	22.0	110	20	22.0	110	0	20	52	122
2-Butanone	ND	20	21.0	105	20	21.0	105	0	20	10	133
2-Chloroethyl vinyl ether	ND	20	0	0 *	20	0	0 *	0	20	10	182
2-Chlorotoluene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	69	112
2-Hexanone	ND	20	16.0	80.0	20	16.0	80.0	0	20	10	163
4-Chlorotoluene	ND	20	17.0	85.0	20	17.0	85.0	0	20	37	110
4-Isopropyltoluene	ND	20	16.0	80.0	20	16.0	80.0	0	20	65	116
4-Methyl-2-pentanone	ND	20	17.0	85.0	20	17.0	85.0	0	20	10	103
Acetone	ND	20	22.0	110	20	22.0	110	0	20	10	160
Acrylonitrile	ND	20	20.0	100	20	20.0	100	0	20	45	155

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040283
Lab Batch ID: R270264

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	21.0	105	20	20.0	100	4.88	22	70	124
Bromobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	72	111
Bromochloromethane	ND	20	25.0	125	20	24.0	120	4.08	20	73	126
Bromodichloromethane	ND	20	20.0	100	20	18.0	90.0	10.5	20	68	125
Bromoform	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	44	132
Bromomethane	ND	20	23.0	115	20	21.0	105	9.09	20	50	140
Carbon disulfide	ND	20	21.0	105	20	20.0	100	4.88	20	46	143
Carbon tetrachloride	ND	20	20.0	100	20	20.0	100	0	20	66	126
Chlorobenzene	ND	20	21.0	105	20	20.0	100	4.88	21	68	123
Chloroethane	ND	20	22.0	110	20	21.0	105	4.65	20	59	134
Chloroform	ND	20	21.0	105	20	20.0	100	4.88	20	68	127
Chloromethane	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	51	137
Dibromochloromethane	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	58	131
Dibromomethane	ND	20	22.0	110	20	20.0	100	9.52	20	82	123
Dichlorodifluoromethane	ND	20	16.0	80.0	20	17.0	85.0	6.06	20	35	143
Ethylbenzene	ND	20	20.0	100	20	19.0	95.0	5.13	20	76	122
Hexachlorobutadiene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	43	137
Isopropylbenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	57	124
Methyl tert-butyl ether	ND	40	43.0	108	40	42.0	105	2.35	20	10	200
Methylene chloride	ND	20	23.0	115	20	22.0	110	4.44	20	70	134
Naphthalene	ND	20	16.0	80.0	20	16.0	80.0	0	20	42	140
n-Butylbenzene	ND	20	16.0	80.0 *	20	16.0	80.0 *	0	20	82	112
n-Propylbenzene	ND	20	16.0	80.0	20	16.0	80.0	0	20	73	108
sec-Butylbenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	76	110
Styrene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	58	152
tert-Butylbenzene	ND	20	15.0	75.0	20	15.0	75.0	0	20	66	120
Tetrachloroethene	ND	20	25.0	125	20	25.0	125	0	20	71	130
Toluene	ND	20	20.0	100	20	20.0	100	0	24	80	117
Trichloroethene	ND	20	23.0	115	20	22.0	110	4.44	21	82	121
Trichlorofluoromethane	ND	20	21.0	105	20	21.0	105	0	20	74	138
Vinyl acetate	ND	20	18.0	90.0	20	18.0	90.0	0	20	66	135
Vinyl chloride	ND	20	20.0	100	20	19.0	95.0	5.13	20	45	143

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service -#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040283
Method: SW8260B **Lab Batch ID:** R270264

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	20	25.0	125	20	23.0	115	8.33	20	67	132
cis-1,3-Dichloropropene	ND	20	18.0	90.0	20	16.0	80.0	11.8	20	67	116
m,p-Xylene	ND	40	40.0	100	40	38.0	95.0	5.13	20	69	127
o-Xylene	ND	20	21.0	105	20	20.0	100	4.88	20	84	114
trans-1,2-Dichloroethene	ND	20	24.0	120	20	23.0	115	4.26	20	68	131
trans-1,3-Dichloropropene	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	56	131
1,2-Dichloroethene (total)	ND	40	49	120	40	46	120	6.3	20	67	132
Xylenes,Total	ND	60	61	100	60	58	97	5.0	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	50	49	98.0	50	49.0	98.0	0	30	65	111
Surr: 4-Bromofluorobenzene	ND	50	53	106	50	54.0	108	1.87	30	87	120
Surr: Toluene-d8	ND	50	47	94.0	50	48.0	96.0	2.11	30	88	116

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist
And
Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**09040283**	Received By:	**BF**
Date and Time Received:	**4/9/2009 10:00:00 AM**	Carrier name:	**FedEx**
Temperature:	**3.5°C**	Chilled by:	**Water Ice**

1. **Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐	
2. **Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐	
3. **Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑	
4. **Chain of custody present?**	Yes ☑	No ☐		
5. **Chain of custody signed when relinquished and received?**	Yes ☑	No ☐		
6. **Chain of custody agrees with sample labels?**	Yes ☑	No ☐		
7. **Samples in proper container/bottle?**	Yes ☑	No ☐		
8. **Sample containers intact?**	Yes ☑	No ☐		
9. **Sufficient sample volume for indicated test?**	Yes ☑	No ☐		
10. **All samples received within holding time?**	Yes ☑	No ☐		
11. **Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐		
12. **Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐	
13. **Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☐	Not Applicable ☑	

***VOA Preservation Checked After Sample Analysis**

SPL Representative: | **Contact Date & Time:**

Client Name Contacted:

Non Conformance Issues:

Client Instructions:

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 322331

09040283 page ____ of ____

Client Name: Brown and Caldwell
Address: 415 Louisiana #2500
City Houston State TX Zip 77002
Phone/Fax: 713-759-0999 713-308-3886
Client Contact: R. Rexroad Email: RRexroad@BrwnCald.com
Project Name/No.: 128125 - BJ Services
Site Name: FracMaster
Site Location: Hobbs, NM
Invoice To: R Rexroad Ph: 713-646-1129

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: VOCs (8260)	SVOCs (8270)	TPH-DRO/MRO (8015)
MW-99	4/8/09	1011		X	W	VA	40/1	HCl	10	X	X	X

Client/Consultant Remarks:

Laboratory remarks:

Intact? Y N
Ice? Y N
Temp: 3.5c

Requested TAT

- ☐ 1 Business Day
- ☐ 2 Business Days
- ☐ 3 Business Days
- ☐ Other
- ☐ Contract
- ☒ Standard

Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☒ PDF ☒
Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial): AR

	date	time		
1. Relinquished by Sampler:	4/8/09	1030	2. Received by:	
3. Relinquished by:	date	time	4. Received by:	
5. Relinquished by:	4/9/09	10:00	6. Received by Laboratory:	

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09040279

Report To:		Project Name:	Fracmaster
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	4/27/2009
ph: (713) 759-0999	fax:		

This Report Contains A Total Of 43 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

4/27/2009

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09040279

Report To:		Project Name:	Fracmaster
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	4/27/2009
ph: (713) 759-0999	fax:		

For Volatile Organics analysis (8260B), the results for 2-chloroethyl vinyl ether are estimated due to sample preservation. The result for this compound is reported as "ND J" for all samples in the report.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID:89427 for the Semivolatile Hydrocarbons analysis by Method 8015B. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID:89412 for the Semivolatile Organics analysis by SW846 Method 8270C. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs. Prep Comments for PR3510_DRO, Sample 09040279-02C: Unpreserved bottle

Agnes V. Vicknair

4/27/2009

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09040279

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To:

Project Name: Fracmaster
Site: Hobbs NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 4/27/2009

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW5-54-55	09040279-01	Soil	4/7/2009 2:31:00 PM	4/9/2009 10:00:00 AM	322330	☐
MW-1	09040279-02	Water	4/7/2009 3:09:00 PM	4/9/2009 10:00:00 AM	322329	☐
TB-4-8-09B	09040279-03	Water	4/8/2009 10:07:00 AM	4/9/2009 10:00:00 AM	322329	☐
FB-4-8-09B	09040279-04	Water	4/8/2009 10:10:00 AM	4/9/2009 10:00:00 AM	322329	☐

Agnes V. Vicknair
Project Manager

4/27/2009
Date

Kesavalu M. Bagawandoss
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW5-54-55 **Collected:** 04/07/2009 14:31 **SPL Sample ID:** 09040279-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE HYDROCARBONS			**MCL**	**SW8015B**	**Units: mg/kg**		
Diesel Range Organics	36		5	1	04/16/09 23:19	NW	4987380
Mineral Spirits Range Organics	ND		10	1	04/16/09 23:19	NW	4987380
Surr: n-Pentacosane	84.2		% 20-154	1	04/16/09 23:19	NW	4987380

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3550B	04/13/2009 16:58	QMT	1.00

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW5-54-55 **Collected:** 04/07/2009 14:31 **SPL Sample ID:** 09040279-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/kg**		
1,2,4-Trichlorobenzene	ND		330	1	04/16/09 1:52	E_R	4986262
1,2-Dichlorobenzene	ND		330	1	04/16/09 1:52	E_R	4986262
1,2-Diphenylhydrazine	ND		330	1	04/16/09 1:52	E_R	4986262
1,3-Dichlorobenzene	ND		330	1	04/16/09 1:52	E_R	4986262
1,4-Dichlorobenzene	ND		330	1	04/16/09 1:52	E_R	4986262
2,4,5-Trichlorophenol	ND		800	1	04/16/09 1:52	E_R	4986262
2,4,6-Trichlorophenol	ND		330	1	04/16/09 1:52	E_R	4986262
2,4-Dichlorophenol	ND		330	1	04/16/09 1:52	E_R	4986262
2,4-Dimethylphenol	ND		330	1	04/16/09 1:52	E_R	4986262
2,4-Dinitrophenol	ND		800	1	04/16/09 1:52	E_R	4986262
2,4-Dinitrotoluene	ND		800	1	04/16/09 1:52	E_R	4986262
2,6-Dinitrotoluene	ND		330	1	04/16/09 1:52	E_R	4986262
2-Chloronaphthalene	ND		330	1	04/16/09 1:52	E_R	4986262
2-Chlorophenol	ND		330	1	04/16/09 1:52	E_R	4986262
2-Methylnaphthalene	ND		330	1	04/16/09 1:52	E_R	4986262
2-Nitroaniline	ND		800	1	04/16/09 1:52	E_R	4986262
2-Nitrophenol	ND		330	1	04/16/09 1:52	E_R	4986262
3,3'-Dichlorobenzidine	ND		330	1	04/16/09 1:52	E_R	4986262
3-Nitroaniline	ND		800	1	04/16/09 1:52	E_R	4986262
4,6-Dinitro-2-methylphenol	ND		800	1	04/16/09 1:52	E_R	4986262
4-Bromophenyl phenyl ether	ND		330	1	04/16/09 1:52	E_R	4986262
4-Chloro-3-methylphenol	ND		330	1	04/16/09 1:52	E_R	4986262
4-Chloroaniline	ND		330	1	04/16/09 1:52	E_R	4986262
4-Chlorophenyl phenyl ether	ND		330	1	04/16/09 1:52	E_R	4986262
4-Nitroaniline	ND		800	1	04/16/09 1:52	E_R	4986262
4-Nitrophenol	ND		800	1	04/16/09 1:52	E_R	4986262
Acenaphthene	ND		330	1	04/16/09 1:52	E_R	4986262
Acenaphthylene	ND		330	1	04/16/09 1:52	E_R	4986262
Aniline	ND		330	1	04/16/09 1:52	E_R	4986262
Anthracene	ND		330	1	04/16/09 1:52	E_R	4986262
Benz(a)anthracene	ND		330	1	04/16/09 1:52	E_R	4986262
Benzo(a)pyrene	ND		330	1	04/16/09 1:52	E_R	4986262
Benzo(b)fluoranthene	ND		330	1	04/16/09 1:52	E_R	4986262
Benzo(g,h,i)perylene	ND		330	1	04/16/09 1:52	E_R	4986262
Benzo(k)fluoranthene	ND		330	1	04/16/09 1:52	E_R	4986262
Benzoic acid	ND		1600	1	04/16/09 1:52	E_R	4986262
Benzyl alcohol	ND		330	1	04/16/09 1:52	E_R	4986262
Bis(2-chloroethoxy)methane	ND		330	1	04/16/09 1:52	E_R	4986262
Bis(2-chloroethyl)ether	ND		330	1	04/16/09 1:52	E_R	4986262

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW5-54-55 **Collected:** 04/07/2009 14:31 **SPL Sample ID:** 09040279-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		330	1	04/16/09 1:52	E_R	4986262
Bis(2-ethylhexyl)phthalate	ND		330	1	04/16/09 1:52	E_R	4986262
Butyl benzyl phthalate	ND		330	1	04/16/09 1:52	E_R	4986262
Carbazole	ND		330	1	04/16/09 1:52	E_R	4986262
Chrysene	ND		330	1	04/16/09 1:52	E_R	4986262
Dibenz(a,h)anthracene	ND		330	1	04/16/09 1:52	E_R	4986262
Dibenzofuran	ND		330	1	04/16/09 1:52	E_R	4986262
Diethyl phthalate	ND		330	1	04/16/09 1:52	E_R	4986262
Dimethyl phthalate	ND		330	1	04/16/09 1:52	E_R	4986262
Di-n-butyl phthalate	ND		330	1	04/16/09 1:52	E_R	4986262
Di-n-octyl phthalate	ND		330	1	04/16/09 1:52	E_R	4986262
Fluoranthene	ND		330	1	04/16/09 1:52	E_R	4986262
Fluorene	ND		330	1	04/16/09 1:52	E_R	4986262
Hexachlorobenzene	ND		330	1	04/16/09 1:52	E_R	4986262
Hexachlorobutadiene	ND		330	1	04/16/09 1:52	E_R	4986262
Hexachlorocyclopentadiene	ND		330	1	04/16/09 1:52	E_R	4986262
Hexachloroethane	ND		330	1	04/16/09 1:52	E_R	4986262
Indeno(1,2,3-cd)pyrene	ND		330	1	04/16/09 1:52	E_R	4986262
Isophorone	ND		330	1	04/16/09 1:52	E_R	4986262
Naphthalene	ND		330	1	04/16/09 1:52	E_R	4986262
Nitrobenzene	ND		330	1	04/16/09 1:52	E_R	4986262
N-Nitrosodi-n-propylamine	ND		330	1	04/16/09 1:52	E_R	4986262
N-Nitrosodiphenylamine	ND		330	1	04/16/09 1:52	E_R	4986262
Pentachlorophenol	ND		800	1	04/16/09 1:52	E_R	4986262
Phenanthrene	ND		330	1	04/16/09 1:52	E_R	4986262
Phenol	ND		330	1	04/16/09 1:52	E_R	4986262
Pyrene	ND		330	1	04/16/09 1:52	E_R	4986262
Pyridine	ND		330	1	04/16/09 1:52	E_R	4986262
2-Methylphenol	ND		330	1	04/16/09 1:52	E_R	4986262
3 & 4-Methylphenol	ND		330	1	04/16/09 1:52	E_R	4986262
Surr: 2,4,6-Tribromophenol	59.6		% 19-135	1	04/16/09 1:52	E_R	4986262
Surr: 2-Fluorobiphenyl	41.7		% 15-140	1	04/16/09 1:52	E_R	4986262
Surr: 2-Fluorophenol	54.8		% 15-122	1	04/16/09 1:52	E_R	4986262
Surr: Nitrobenzene-d5	37.1		% 10-134	1	04/16/09 1:52	E_R	4986262
Surr: Phenol-d5	56.4		% 10-123	1	04/16/09 1:52	E_R	4986262
Surr: Terphenyl-d14	40.2		% 18-166	1	04/16/09 1:52	E_R	4986262

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3550B	04/13/2009 11:33	QMT	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-1 **Collected:** 04/07/2009 15:09 **SPL Sample ID:** 09040279-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
ALKALINITY (AS CACO3), TOTAL				**MCL**	**E310.1**	**Units: mg/L**		
Alkalinity, Total (As CaCO3)	198		2		1	04/13/09 11:20	PAC	4982662
GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND		0.1		1	04/13/09 16:49	CLJ	4984672
Surr: 1,4-Difluorobenzene	91.0		% 60-155		1	04/13/09 16:49	CLJ	4984672
Surr: 4-Bromofluorobenzene	105		% 50-158		1	04/13/09 16:49	CLJ	4984672
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**		
Methane	0.0014		0.0012		1	04/24/09 14:48	V_L	4996392
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**		
Chloride	456		25		50	04/14/09 22:18	BDG	4985116
Sulfate	128		25		50	04/14/09 22:18	BDG	4985116
Nitrogen,Nitrate (As N)	4		0.5		1	04/09/09 11:43	BDG	4984860
SEMIVOLATILE HYDROCARBONS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics	ND		0.1		1	04/17/09 0:00	NW	4987513
Mineral Spirits Range Organics	ND		0.1		1	04/17/09 0:00	NW	4987513
Surr: n-Pentacosane	41.8		% 20-150		1	04/17/09 0:00	NW	4987513

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 14:10	N_M	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-1 **Collected:** 04/07/2009 15:09 **SPL Sample ID:** 09040279-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	04/17/09 16:37	GY	4992374
1,2-Dichlorobenzene	ND		5	1	04/17/09 16:37	GY	4992374
1,2-Diphenylhydrazine	ND		10	1	04/17/09 16:37	GY	4992374
1,3-Dichlorobenzene	ND		5	1	04/17/09 16:37	GY	4992374
1,4-Dichlorobenzene	ND		5	1	04/17/09 16:37	GY	4992374
2,4,5-Trichlorophenol	ND		10	1	04/17/09 16:37	GY	4992374
2,4,6-Trichlorophenol	ND		5	1	04/17/09 16:37	GY	4992374
2,4-Dichlorophenol	ND		5	1	04/17/09 16:37	GY	4992374
2,4-Dimethylphenol	ND		5	1	04/17/09 16:37	GY	4992374
2,4-Dinitrophenol	ND		25	1	04/17/09 16:37	GY	4992374
2,4-Dinitrotoluene	ND		5	1	04/17/09 16:37	GY	4992374
2,6-Dinitrotoluene	ND		5	1	04/17/09 16:37	GY	4992374
2-Chloronaphthalene	ND		5	1	04/17/09 16:37	GY	4992374
2-Chlorophenol	ND		5	1	04/17/09 16:37	GY	4992374
2-Methylnaphthalene	ND		5	1	04/17/09 16:37	GY	4992374
2-Nitroaniline	ND		25	1	04/17/09 16:37	GY	4992374
2-Nitrophenol	ND		5	1	04/17/09 16:37	GY	4992374
3,3'-Dichlorobenzidine	ND		10	1	04/17/09 16:37	GY	4992374
3-Nitroaniline	ND		25	1	04/17/09 16:37	GY	4992374
4,6-Dinitro-2-methylphenol	ND		25	1	04/17/09 16:37	GY	4992374
4-Bromophenyl phenyl ether	ND		5	1	04/17/09 16:37	GY	4992374
4-Chloro-3-methylphenol	ND		5	1	04/17/09 16:37	GY	4992374
4-Chloroaniline	ND		5	1	04/17/09 16:37	GY	4992374
4-Chlorophenyl phenyl ether	ND		5	1	04/17/09 16:37	GY	4992374
4-Nitroaniline	ND		25	1	04/17/09 16:37	GY	4992374
4-Nitrophenol	ND		25	1	04/17/09 16:37	GY	4992374
Acenaphthene	ND		5	1	04/17/09 16:37	GY	4992374
Acenaphthylene	ND		5	1	04/17/09 16:37	GY	4992374
Aniline	ND		5	1	04/17/09 16:37	GY	4992374
Anthracene	ND		5	1	04/17/09 16:37	GY	4992374
Benz(a)anthracene	ND		5	1	04/17/09 16:37	GY	4992374
Benzo(a)pyrene	ND		5	1	04/17/09 16:37	GY	4992374
Benzo(b)fluoranthene	ND		5	1	04/17/09 16:37	GY	4992374
Benzo(g,h,i)perylene	ND		5	1	04/17/09 16:37	GY	4992374
Benzo(k)fluoranthene	ND		5	1	04/17/09 16:37	GY	4992374
Benzoic acid	ND		25	1	04/17/09 16:37	GY	4992374
Benzyl alcohol	ND		5	1	04/17/09 16:37	GY	4992374
Bis(2-chloroethoxy)methane	ND		5	1	04/17/09 16:37	GY	4992374
Bis(2-chloroethyl)ether	ND		5	1	04/17/09 16:37	GY	4992374

Qualifiers:

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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-1 **Collected:** 04/07/2009 15:09 **SPL Sample ID:** 09040279-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		5	1	04/17/09 16:37	GY	4992374
Bis(2-ethylhexyl)phthalate	ND		5	1	04/17/09 16:37	GY	4992374
Butyl benzyl phthalate	ND		5	1	04/17/09 16:37	GY	4992374
Carbazole	ND		5	1	04/17/09 16:37	GY	4992374
Chrysene	ND		5	1	04/17/09 16:37	GY	4992374
Dibenz(a,h)anthracene	ND		5	1	04/17/09 16:37	GY	4992374
Dibenzofuran	ND		5	1	04/17/09 16:37	GY	4992374
Diethyl phthalate	ND		5	1	04/17/09 16:37	GY	4992374
Dimethyl phthalate	ND		5	1	04/17/09 16:37	GY	4992374
Di-n-butyl phthalate	ND		5	1	04/17/09 16:37	GY	4992374
Di-n-octyl phthalate	ND		5	1	04/17/09 16:37	GY	4992374
Fluoranthene	ND		5	1	04/17/09 16:37	GY	4992374
Fluorene	ND		5	1	04/17/09 16:37	GY	4992374
Hexachlorobenzene	ND		5	1	04/17/09 16:37	GY	4992374
Hexachlorobutadiene	ND		5	1	04/17/09 16:37	GY	4992374
Hexachlorocyclopentadiene	ND		5	1	04/17/09 16:37	GY	4992374
Hexachloroethane	ND		5	1	04/17/09 16:37	GY	4992374
Indeno(1,2,3-cd)pyrene	ND		5	1	04/17/09 16:37	GY	4992374
Isophorone	ND		5	1	04/17/09 16:37	GY	4992374
Naphthalene	ND		5	1	04/17/09 16:37	GY	4992374
Nitrobenzene	ND		5	1	04/17/09 16:37	GY	4992374
N-Nitrosodi-n-propylamine	ND		5	1	04/17/09 16:37	GY	4992374
N-Nitrosodiphenylamine	ND		5	1	04/17/09 16:37	GY	4992374
Pentachlorophenol	ND		25	1	04/17/09 16:37	GY	4992374
Phenanthrene	ND		5	1	04/17/09 16:37	GY	4992374
Phenol	ND		5	1	04/17/09 16:37	GY	4992374
Pyrene	ND		5	1	04/17/09 16:37	GY	4992374
Pyridine	ND		5	1	04/17/09 16:37	GY	4992374
2-Methylphenol	ND		5	1	04/17/09 16:37	GY	4992374
3 & 4-Methylphenol	ND		5	1	04/17/09 16:37	GY	4992374
Surr: 2,4,6-Tribromophenol	81.6		% 10-123	1	04/17/09 16:37	GY	4992374
Surr: 2-Fluorobiphenyl	63.8		% 23-116	1	04/17/09 16:37	GY	4992374
Surr: 2-Fluorophenol	60.9		% 16-110	1	04/17/09 16:37	GY	4992374
Surr: Nitrobenzene-d5	61.8		% 21-114	1	04/17/09 16:37	GY	4992374
Surr: Phenol-d5	41.3		% 10-110	1	04/17/09 16:37	GY	4992374
Surr: Terphenyl-d14	55.8		% 22-141	1	04/17/09 16:37	GY	4992374

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 8:15	N_M	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-1 **Collected:** 04/07/2009 15:09 **SPL Sample ID:** 09040279-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/13/09 18:22	JC	4984550
1,1,1-Trichloroethane	ND		5	1	04/13/09 18:22	JC	4984550
1,1,2,2-Tetrachloroethane	ND		5	1	04/13/09 18:22	JC	4984550
1,1,2-Trichloroethane	ND		5	1	04/13/09 18:22	JC	4984550
1,1-Dichloroethane	ND		5	1	04/13/09 18:22	JC	4984550
1,1-Dichloroethene	ND		5	1	04/13/09 18:22	JC	4984550
1,1-Dichloropropene	ND		5	1	04/13/09 18:22	JC	4984550
1,2,3-Trichlorobenzene	ND		5	1	04/13/09 18:22	JC	4984550
1,2,3-Trichloropropane	ND		5	1	04/13/09 18:22	JC	4984550
1,2,4-Trichlorobenzene	ND		5	1	04/13/09 18:22	JC	4984550
1,2,4-Trimethylbenzene	ND		5	1	04/13/09 18:22	JC	4984550
1,2-Dibromo-3-chloropropane	ND		5	1	04/13/09 18:22	JC	4984550
1,2-Dibromoethane	ND		5	1	04/13/09 18:22	JC	4984550
1,2-Dichlorobenzene	ND		5	1	04/13/09 18:22	JC	4984550
1,2-Dichloroethane	ND		5	1	04/13/09 18:22	JC	4984550
1,2-Dichloropropane	ND		5	1	04/13/09 18:22	JC	4984550
1,3,5-Trimethylbenzene	ND		5	1	04/13/09 18:22	JC	4984550
1,3-Dichlorobenzene	ND		5	1	04/13/09 18:22	JC	4984550
1,3-Dichloropropane	ND		5	1	04/13/09 18:22	JC	4984550
1,4-Dichlorobenzene	ND		5	1	04/13/09 18:22	JC	4984550
2,2-Dichloropropane	ND		5	1	04/13/09 18:22	JC	4984550
2-Butanone	ND		20	1	04/13/09 18:22	JC	4984550
2-Chloroethyl vinyl ether	ND	J	10	1	04/13/09 18:22	JC	4984550
2-Chlorotoluene	ND		5	1	04/13/09 18:22	JC	4984550
2-Hexanone	ND		10	1	04/13/09 18:22	JC	4984550
4-Chlorotoluene	ND		5	1	04/13/09 18:22	JC	4984550
4-Isopropyltoluene	ND		5	1	04/13/09 18:22	JC	4984550
4-Methyl-2-pentanone	ND		10	1	04/13/09 18:22	JC	4984550
Acetone	ND		20	1	04/13/09 18:22	JC	4984550
Acrylonitrile	ND		10	1	04/13/09 18:22	JC	4984550
Benzene	ND		5	1	04/13/09 18:22	JC	4984550
Bromobenzene	ND		5	1	04/13/09 18:22	JC	4984550
Bromochloromethane	ND		5	1	04/13/09 18:22	JC	4984550
Bromodichloromethane	ND		5	1	04/13/09 18:22	JC	4984550
Bromoform	ND		5	1	04/13/09 18:22	JC	4984550
Bromomethane	ND		10	1	04/13/09 18:22	JC	4984550
Carbon disulfide	ND		5	1	04/13/09 18:22	JC	4984550
Carbon tetrachloride	ND		5	1	04/13/09 18:22	JC	4984550
Chlorobenzene	ND		5	1	04/13/09 18:22	JC	4984550

Qualifiers:

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TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-1 **Collected:** 04/07/2009 15:09 **SPL Sample ID:** 09040279-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/13/09 18:22	JC	4984550
Chloroform	ND		5	1	04/13/09 18:22	JC	4984550
Chloromethane	ND		10	1	04/13/09 18:22	JC	4984550
Dibromochloromethane	ND		5	1	04/13/09 18:22	JC	4984550
Dibromomethane	ND		5	1	04/13/09 18:22	JC	4984550
Dichlorodifluoromethane	ND		10	1	04/13/09 18:22	JC	4984550
Ethylbenzene	ND		5	1	04/13/09 18:22	JC	4984550
Hexachlorobutadiene	ND		5	1	04/13/09 18:22	JC	4984550
Isopropylbenzene	ND		5	1	04/13/09 18:22	JC	4984550
Methyl tert-butyl ether	ND		5	1	04/13/09 18:22	JC	4984550
Methylene chloride	ND		5	1	04/13/09 18:22	JC	4984550
Naphthalene	ND		5	1	04/13/09 18:22	JC	4984550
n-Butylbenzene	ND		5	1	04/13/09 18:22	JC	4984550
n-Propylbenzene	ND		5	1	04/13/09 18:22	JC	4984550
sec-Butylbenzene	ND		5	1	04/13/09 18:22	JC	4984550
Styrene	ND		5	1	04/13/09 18:22	JC	4984550
tert-Butylbenzene	ND		5	1	04/13/09 18:22	JC	4984550
Tetrachloroethene	ND		5	1	04/13/09 18:22	JC	4984550
Toluene	ND		5	1	04/13/09 18:22	JC	4984550
Trichloroethene	ND		5	1	04/13/09 18:22	JC	4984550
Trichlorofluoromethane	ND		5	1	04/13/09 18:22	JC	4984550
Vinyl acetate	ND		10	1	04/13/09 18:22	JC	4984550
Vinyl chloride	ND		2	1	04/13/09 18:22	JC	4984550
cis-1,2-Dichloroethene	ND		5	1	04/13/09 18:22	JC	4984550
cis-1,3-Dichloropropene	ND		5	1	04/13/09 18:22	JC	4984550
m,p-Xylene	ND		5	1	04/13/09 18:22	JC	4984550
o-Xylene	ND		5	1	04/13/09 18:22	JC	4984550
trans-1,2-Dichloroethene	ND		5	1	04/13/09 18:22	JC	4984550
trans-1,3-Dichloropropene	ND		5	1	04/13/09 18:22	JC	4984550
1,2-Dichloroethene (total)	ND		5	1	04/13/09 18:22	JC	4984550
Xylenes,Total	ND		5	1	04/13/09 18:22	JC	4984550
Surr: 1,2-Dichloroethane-d4	100		% 65-111	1	04/13/09 18:22	JC	4984550
Surr: 4-Bromofluorobenzene	108		% 87-120	1	04/13/09 18:22	JC	4984550
Surr: Toluene-d8	92.0		% 88-116	1	04/13/09 18:22	JC	4984550

Qualifiers:

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TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TB-4-8-09B **Collected:** 04/08/2009 10:07 **SPL Sample ID:** 09040279-03

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/13/09 18:49	JC	4984551
1,1,1-Trichloroethane	ND		5	1	04/13/09 18:49	JC	4984551
1,1,2,2-Tetrachloroethane	ND		5	1	04/13/09 18:49	JC	4984551
1,1,2-Trichloroethane	ND		5	1	04/13/09 18:49	JC	4984551
1,1-Dichloroethane	ND		5	1	04/13/09 18:49	JC	4984551
1,1-Dichloroethene	ND		5	1	04/13/09 18:49	JC	4984551
1,1-Dichloropropene	ND		5	1	04/13/09 18:49	JC	4984551
1,2,3-Trichlorobenzene	ND		5	1	04/13/09 18:49	JC	4984551
1,2,3-Trichloropropane	ND		5	1	04/13/09 18:49	JC	4984551
1,2,4-Trichlorobenzene	ND		5	1	04/13/09 18:49	JC	4984551
1,2,4-Trimethylbenzene	ND		5	1	04/13/09 18:49	JC	4984551
1,2-Dibromo-3-chloropropane	ND		5	1	04/13/09 18:49	JC	4984551
1,2-Dibromoethane	ND		5	1	04/13/09 18:49	JC	4984551
1,2-Dichlorobenzene	ND		5	1	04/13/09 18:49	JC	4984551
1,2-Dichloroethane	ND		5	1	04/13/09 18:49	JC	4984551
1,2-Dichloropropane	ND		5	1	04/13/09 18:49	JC	4984551
1,3,5-Trimethylbenzene	ND		5	1	04/13/09 18:49	JC	4984551
1,3-Dichlorobenzene	ND		5	1	04/13/09 18:49	JC	4984551
1,3-Dichloropropane	ND		5	1	04/13/09 18:49	JC	4984551
1,4-Dichlorobenzene	ND		5	1	04/13/09 18:49	JC	4984551
2,2-Dichloropropane	ND		5	1	04/13/09 18:49	JC	4984551
2-Butanone	ND		20	1	04/13/09 18:49	JC	4984551
2-Chloroethyl vinyl ether	ND J		10	1	04/13/09 18:49	JC	4984551
2-Chlorotoluene	ND		5	1	04/13/09 18:49	JC	4984551
2-Hexanone	ND		10	1	04/13/09 18:49	JC	4984551
4-Chlorotoluene	ND		5	1	04/13/09 18:49	JC	4984551
4-Isopropyltoluene	ND		5	1	04/13/09 18:49	JC	4984551
4-Methyl-2-pentanone	ND		10	1	04/13/09 18:49	JC	4984551
Acetone	ND		20	1	04/13/09 18:49	JC	4984551
Acrylonitrile	ND		10	1	04/13/09 18:49	JC	4984551
Benzene	ND		5	1	04/13/09 18:49	JC	4984551
Bromobenzene	ND		5	1	04/13/09 18:49	JC	4984551
Bromochloromethane	ND		5	1	04/13/09 18:49	JC	4984551
Bromodichloromethane	ND		5	1	04/13/09 18:49	JC	4984551
Bromoform	ND		5	1	04/13/09 18:49	JC	4984551
Bromomethane	ND		10	1	04/13/09 18:49	JC	4984551
Carbon disulfide	ND		5	1	04/13/09 18:49	JC	4984551
Carbon tetrachloride	ND		5	1	04/13/09 18:49	JC	4984551
Chlorobenzene	ND		5	1	04/13/09 18:49	JC	4984551

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TB-4-8-09B **Collected:** 04/08/2009 10:07 **SPL Sample ID:** 09040279-03

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/13/09 18:49	JC	4984551
Chloroform	ND		5	1	04/13/09 18:49	JC	4984551
Chloromethane	ND		10	1	04/13/09 18:49	JC	4984551
Dibromochloromethane	ND		5	1	04/13/09 18:49	JC	4984551
Dibromomethane	ND		5	1	04/13/09 18:49	JC	4984551
Dichlorodifluoromethane	ND		10	1	04/13/09 18:49	JC	4984551
Ethylbenzene	ND		5	1	04/13/09 18:49	JC	4984551
Hexachlorobutadiene	ND		5	1	04/13/09 18:49	JC	4984551
Isopropylbenzene	ND		5	1	04/13/09 18:49	JC	4984551
Methyl tert-butyl ether	ND		5	1	04/13/09 18:49	JC	4984551
Methylene chloride	ND		5	1	04/13/09 18:49	JC	4984551
Naphthalene	ND		5	1	04/13/09 18:49	JC	4984551
n-Butylbenzene	ND		5	1	04/13/09 18:49	JC	4984551
n-Propylbenzene	ND		5	1	04/13/09 18:49	JC	4984551
sec-Butylbenzene	ND		5	1	04/13/09 18:49	JC	4984551
Styrene	ND		5	1	04/13/09 18:49	JC	4984551
tert-Butylbenzene	ND		5	1	04/13/09 18:49	JC	4984551
Tetrachloroethene	ND		5	1	04/13/09 18:49	JC	4984551
Toluene	ND		5	1	04/13/09 18:49	JC	4984551
Trichloroethene	ND		5	1	04/13/09 18:49	JC	4984551
Trichlorofluoromethane	ND		5	1	04/13/09 18:49	JC	4984551
Vinyl acetate	ND		10	1	04/13/09 18:49	JC	4984551
Vinyl chloride	ND		2	1	04/13/09 18:49	JC	4984551
cis-1,2-Dichloroethene	ND		5	1	04/13/09 18:49	JC	4984551
cis-1,3-Dichloropropene	ND		5	1	04/13/09 18:49	JC	4984551
m,p-Xylene	ND		5	1	04/13/09 18:49	JC	4984551
o-Xylene	ND		5	1	04/13/09 18:49	JC	4984551
trans-1,2-Dichloroethene	ND		5	1	04/13/09 18:49	JC	4984551
trans-1,3-Dichloropropene	ND		5	1	04/13/09 18:49	JC	4984551
1,2-Dichloroethene (total)	ND		5	1	04/13/09 18:49	JC	4984551
Xylenes,Total	ND		5	1	04/13/09 18:49	JC	4984551
Surr: 1,2-Dichloroethane-d4	98.0		% 65-111	1	04/13/09 18:49	JC	4984551
Surr: 4-Bromofluorobenzene	108		% 87-120	1	04/13/09 18:49	JC	4984551
Surr: Toluene-d8	92.0		% 88-116	1	04/13/09 18:49	JC	4984551

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
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Client Sample ID: FB-4-8-09B **Collected:** 04/08/2009 10:10 **SPL Sample ID:** 09040279-04

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/13/09 19:17	JC	4984552
1,1,1-Trichloroethane	ND		5	1	04/13/09 19:17	JC	4984552
1,1,2,2-Tetrachloroethane	ND		5	1	04/13/09 19:17	JC	4984552
1,1,2-Trichloroethane	ND		5	1	04/13/09 19:17	JC	4984552
1,1-Dichloroethane	ND		5	1	04/13/09 19:17	JC	4984552
1,1-Dichloroethene	ND		5	1	04/13/09 19:17	JC	4984552
1,1-Dichloropropene	ND		5	1	04/13/09 19:17	JC	4984552
1,2,3-Trichlorobenzene	ND		5	1	04/13/09 19:17	JC	4984552
1,2,3-Trichloropropane	ND		5	1	04/13/09 19:17	JC	4984552
1,2,4-Trichlorobenzene	ND		5	1	04/13/09 19:17	JC	4984552
1,2,4-Trimethylbenzene	ND		5	1	04/13/09 19:17	JC	4984552
1,2-Dibromo-3-chloropropane	ND		5	1	04/13/09 19:17	JC	4984552
1,2-Dibromoethane	ND		5	1	04/13/09 19:17	JC	4984552
1,2-Dichlorobenzene	ND		5	1	04/13/09 19:17	JC	4984552
1,2-Dichloroethane	ND		5	1	04/13/09 19:17	JC	4984552
1,2-Dichloropropane	ND		5	1	04/13/09 19:17	JC	4984552
1,3,5-Trimethylbenzene	ND		5	1	04/13/09 19:17	JC	4984552
1,3-Dichlorobenzene	ND		5	1	04/13/09 19:17	JC	4984552
1,3-Dichloropropane	ND		5	1	04/13/09 19:17	JC	4984552
1,4-Dichlorobenzene	ND		5	1	04/13/09 19:17	JC	4984552
2,2-Dichloropropane	ND		5	1	04/13/09 19:17	JC	4984552
2-Butanone	ND		20	1	04/13/09 19:17	JC	4984552
2-Chloroethyl vinyl ether	ND	J	10	1	04/13/09 19:17	JC	4984552
2-Chlorotoluene	ND		5	1	04/13/09 19:17	JC	4984552
2-Hexanone	ND		10	1	04/13/09 19:17	JC	4984552
4-Chlorotoluene	ND		5	1	04/13/09 19:17	JC	4984552
4-Isopropyltoluene	ND		5	1	04/13/09 19:17	JC	4984552
4-Methyl-2-pentanone	ND		10	1	04/13/09 19:17	JC	4984552
Acetone	ND		20	1	04/13/09 19:17	JC	4984552
Acrylonitrile	ND		10	1	04/13/09 19:17	JC	4984552
Benzene	ND		5	1	04/13/09 19:17	JC	4984552
Bromobenzene	ND		5	1	04/13/09 19:17	JC	4984552
Bromochloromethane	ND		5	1	04/13/09 19:17	JC	4984552
Bromodichloromethane	ND		5	1	04/13/09 19:17	JC	4984552
Bromoform	ND		5	1	04/13/09 19:17	JC	4984552
Bromomethane	ND		10	1	04/13/09 19:17	JC	4984552
Carbon disulfide	ND		5	1	04/13/09 19:17	JC	4984552
Carbon tetrachloride	ND		5	1	04/13/09 19:17	JC	4984552
Chlorobenzene	ND		5	1	04/13/09 19:17	JC	4984552

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: FB-4-8-09B **Collected:** 04/08/2009 10:10 **SPL Sample ID:** 09040279-04

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/13/09 19:17	JC	4984552
Chloroform	ND		5	1	04/13/09 19:17	JC	4984552
Chloromethane	ND		10	1	04/13/09 19:17	JC	4984552
Dibromochloromethane	ND		5	1	04/13/09 19:17	JC	4984552
Dibromomethane	ND		5	1	04/13/09 19:17	JC	4984552
Dichlorodifluoromethane	ND		10	1	04/13/09 19:17	JC	4984552
Ethylbenzene	ND		5	1	04/13/09 19:17	JC	4984552
Hexachlorobutadiene	ND		5	1	04/13/09 19:17	JC	4984552
Isopropylbenzene	ND		5	1	04/13/09 19:17	JC	4984552
Methyl tert-butyl ether	ND		5	1	04/13/09 19:17	JC	4984552
Methylene chloride	ND		5	1	04/13/09 19:17	JC	4984552
Naphthalene	ND		5	1	04/13/09 19:17	JC	4984552
n-Butylbenzene	ND		5	1	04/13/09 19:17	JC	4984552
n-Propylbenzene	ND		5	1	04/13/09 19:17	JC	4984552
sec-Butylbenzene	ND		5	1	04/13/09 19:17	JC	4984552
Styrene	ND		5	1	04/13/09 19:17	JC	4984552
tert-Butylbenzene	ND		5	1	04/13/09 19:17	JC	4984552
Tetrachloroethene	ND		5	1	04/13/09 19:17	JC	4984552
Toluene	ND		5	1	04/13/09 19:17	JC	4984552
Trichloroethene	ND		5	1	04/13/09 19:17	JC	4984552
Trichlorofluoromethane	ND		5	1	04/13/09 19:17	JC	4984552
Vinyl acetate	ND		10	1	04/13/09 19:17	JC	4984552
Vinyl chloride	ND		2	1	04/13/09 19:17	JC	4984552
cis-1,2-Dichloroethene	ND		5	1	04/13/09 19:17	JC	4984552
cis-1,3-Dichloropropene	ND		5	1	04/13/09 19:17	JC	4984552
m,p-Xylene	ND		5	1	04/13/09 19:17	JC	4984552
o-Xylene	ND		5	1	04/13/09 19:17	JC	4984552
trans-1,2-Dichloroethene	ND		5	1	04/13/09 19:17	JC	4984552
trans-1,3-Dichloropropene	ND		5	1	04/13/09 19:17	JC	4984552
1,2-Dichloroethene (total)	ND		5	1	04/13/09 19:17	JC	4984552
Xylenes,Total	ND		5	1	04/13/09 19:17	JC	4984552
Surr: 1,2-Dichloroethane-d4	100		% 65-111	1	04/13/09 19:17	JC	4984552
Surr: 4-Bromofluorobenzene	108		% 87-120	1	04/13/09 19:17	JC	4984552
Surr: Toluene-d8	92.0		% 88-116	1	04/13/09 19:17	JC	4984552

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Hydrocarbons **WorkOrder:** 09040279
Method: SW8015B **Lab Batch ID:** 89427

Method Blank

RunID: HP_V_090416B-4987505 Units: mg/L
Analysis Date: 04/14/2009 23:43 Analyst: NW
Preparation Date: 04/13/2009 14:10 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040279-02C	MW-1

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.10
Mineral Spirits Range Organics	ND	0.10
Surr: n-Pentacosane	51.2	20-150

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HP_V_090416B-4987506 Units: mg/L
Analysis Date: 04/15/2009 0:03 Analyst: NW
Preparation Date: 04/13/2009 14:10 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics	1.00	0.895	89.5	1.00	0.880	88.0	1.7	40	21	150
Surr: n-Pentacosane	0.0500	0.0494	98.8	0.0500	0.0485	97.0	1.8	30	20	150

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Hydrocarbons
Method: SW8015B
WorkOrder: 09040279
Lab Batch ID: 89434

Method Blank

RunID: HP_V_090414C-4987373
Units: mg/kg
Analysis Date: 04/14/2009 12:47
Analyst: NW
Preparation Date: 04/13/2009 16:58
Prep By: QMT Method SW3550B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040279-01A	MW5-54-55

Analyte	Result	Rep Limit
Diesel Range Organics	ND	5.0
Mineral Spirits Range Organics	ND	10
Surr: n-Pentacosane	92.8	20-154

Laboratory Control Sample (LCS)

RunID: HP_V_090414C-4987374
Units: mg/kg
Analysis Date: 04/14/2009 13:07
Analyst: NW
Preparation Date: 04/13/2009 16:58
Prep By: QMT Method SW3550B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Diesel Range Organics	33.3	29.6	88.9	57	150
Surr: n-Pentacosane	1.66	1.55	93.6	20	154

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: H0904023700
RunID: HP_V_090414C-4987376
Units: mg/kg
Analysis Date: 04/14/2009 15:37
Analyst: NW
Preparation Date: 04/13/2009 16:58
Prep By: QMT Method SW3550B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Diesel Range Organics	8150	33.3	8990	N/C	33.3	9400	N/C	N/C	50	21	175
Surr: n-Pentacosane	ND	1.66	D	D	1.66	D	D	D	30	20	154

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Headspace Gas Analysis
Method: RSK147

WorkOrder: 09040279
Lab Batch ID: R271083

Method Blank

RunID: VARC_090424A-4996391 Units: mg/L
Analysis Date: 04/24/2009 14:37 Analyst: V_L

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040279-02E	MW-1

Analyte	Result	Rep Limit
Methane	ND	0.0012

Sample Duplicate

Original Sample: 09040488-02
RunID: VARC_090424A-4996394 Units: mg/L
Analysis Date: 04/24/2009 15:14 Analyst: V_L

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Methane	0.0037	0.00379	2.8	50

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Gasoline Range Organics
Method: SW8015B
WorkOrder: 09040279
Lab Batch ID: R270269

Method Blank

RunID: HP_P_090413A-4984662 Units: mg/L
Analysis Date: 04/13/2009 5:20 Analyst: CLJ

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040279-02D	MW-1

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	91.5	60-155
Surr: 4-Bromofluorobenzene	104.0	50-158

Laboratory Control Sample (LCS)

RunID: HP_P_090413A-4984660 Units: mg/L
Analysis Date: 04/13/2009 4:22 Analyst: CLJ

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	0.859	85.9	42	136
Surr: 1,4-Difluorobenzene	0.100	0.0949	94.9	60	155
Surr: 4-Bromofluorobenzene	0.100	0.108	108	50	158

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040343-01
RunID: HP_P_090413A-4984664 Units: mg/L
Analysis Date: 04/13/2009 10:44 Analyst: CLJ

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	1	0.852	85.2	1	0.868	86.8	1.92	36	22	174
Surr: 1,4-Difluorobenzene	ND	0.1	0.0922	92.2	0.1	0.0932	93.2	1.08	30	60	155
Surr: 4-Bromofluorobenzene	ND	0.1	0.105	105	0.1	0.107	107	1.41	30	50	158

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040279
Method: SW8270C **Lab Batch ID:** 89412

Method Blank

RunID: H_090417E-4992370 Units: ug/L
Analysis Date: 04/17/2009 9:40 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040279-02B	MW-1

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Diphenylhydrazine	ND	10
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,4,5-Trichlorophenol	ND	10
2,4,6-Trichlorophenol	ND	5.0
2,4-Dichlorophenol	ND	5.0
2,4-Dimethylphenol	ND	5.0
2,4-Dinitrophenol	ND	25
2,4-Dinitrotoluene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Chlorophenol	ND	5.0
2-Methylnaphthalene	ND	5.0
2-Nitroaniline	ND	25
2-Nitrophenol	ND	5.0
3,3'-Dichlorobenzidine	ND	10
3-Nitroaniline	ND	25
4,6-Dinitro-2-methylphenol	ND	25
4-Bromophenyl phenyl ether	ND	5.0
4-Chloro-3-methylphenol	ND	5.0
4-Chloroaniline	ND	5.0
4-Chlorophenyl phenyl ether	ND	5.0
4-Nitroaniline	ND	25
4-Nitrophenol	ND	25
Acenaphthene	ND	5.0
Acenaphthylene	ND	5.0
Aniline	ND	5.0
Anthracene	ND	5.0
Benz(a)anthracene	ND	5.0
Benzo(a)pyrene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzoic acid	ND	25
Benzyl alcohol	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Butyl benzyl phthalate	ND	5.0
Carbazole	ND	5.0
Chrysene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Dibenzofuran	ND	5.0

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
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TNTC - Too numerous to count
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HOUSTON LABORATORY
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09040279
Lab Batch ID: 89412

Method Blank

RunID: H_090417E-4992370 Units: ug/L
Analysis Date: 04/17/2009 9:40 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	5.0
Dimethyl phthalate	ND	5.0
Di-n-butyl phthalate	ND	5.0
Di-n-octyl phthalate	ND	5.0
Fluoranthene	ND	5.0
Fluorene	ND	5.0
Hexachlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
Hexachloroethane	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Isophorone	ND	5.0
Naphthalene	ND	5.0
Nitrobenzene	ND	5.0
N-Nitrosodi-n-propylamine	ND	5.0
N-Nitrosodiphenylamine	ND	5.0
Pentachlorophenol	ND	25
Phenanthrene	ND	5.0
Phenol	ND	5.0
Pyrene	ND	5.0
Pyridine	ND	5.0
2-Methylphenol	ND	5.0
3 & 4-Methylphenol	ND	5.0
Surr: 2,4,6-Tribromophenol	95.2	10-123
Surr: 2-Fluorobiphenyl	72.6	23-116
Surr: 2-Fluorophenol	76.1	16-110
Surr: Nitrobenzene-d5	68.4	21-114
Surr: Phenol-d5	62.5	10-110
Surr: Terphenyl-d14	68.4	22-141

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2,4-Trichlorobenzene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	39	21	120
1,2-Dichlorobenzene	25.0	15.4	61.6	25.0	16.7	66.8	8.1	50	20	150

Qualifiers:

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MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09040279
Lab Batch ID: 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371
Analysis Date: 04/17/2009 10:42
Preparation Date: 04/13/2009 8:15
Units: ug/L
Analyst: GY
Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Diphenylhydrazine	25.0	16.5	66.0	25.0	17.6	70.4	6.5	50	10	251
1,3-Dichlorobenzene	25.0	15.4	61.6	25.0	16.5	66.0	6.9	50	20	150
1,4-Dichlorobenzene	25.0	15.3	61.2	25.0	16.2	64.8	5.7	45	20	150
2,4,5-Trichlorophenol	25.0	14.9	59.6	25.0	15.4	61.6	3.3	50	30	150
2,4,6-Trichlorophenol	25.0	15.2	60.8	25.0	16.0	64.0	5.1	50	30	150
2,4-Dichlorophenol	25.0	14.5	58.0	25.0	15.9	63.6	9.2	50	30	150
2,4-Dimethylphenol	25.0	15.4	61.6	25.0	16.0	64.0	3.8	50	32	140
2,4-Dinitrophenol	25.0	11.9	47.6	25.0	12.8	51.2	7.3	50	10	160
2,4-Dinitrotoluene	25.0	16.1	64.4	25.0	16.3	65.2	1.2	50	30	150
2,6-Dinitrotoluene	25.0	15.8	63.2	25.0	15.7	62.8	0.6	50	30	150
2-Chloronaphthalene	25.0	15.8	63.2	25.0	16.5	66.0	4.3	50	30	150
2-Chlorophenol	25.0	15.4	61.6	25.0	15.9	63.6	3.2	40	23	134
2-Methylnaphthalene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	50	20	170
2-Nitroaniline	25.0	14.8	59.2	25.0	15.9	63.6	7.2	50	20	160
2-Nitrophenol	25.0	14.9	59.6	25.0	15.8	63.2	5.9	50	29	182
3,3'-Dichlorobenzidine	25.0	13.3	53.2	25.0	13.7	54.8	3.0	50	30	200
3-Nitroaniline	25.0	14.4	57.6	25.0	14.8	59.2	2.7	50	20	160
4,6-Dinitro-2-methylphenol	25.0	13.7	54.8	25.0	14.2	56.8	3.6	50	10	160
4-Bromophenyl phenyl ether	25.0	15.6	62.4	25.0	15.8	63.2	1.3	50	30	150
4-Chloro-3-methylphenol	25.0	15.2	60.8	25.0	16.1	64.4	5.8	42	25	160
4-Chloroaniline	25.0	15.5	62.0	25.0	16.2	64.8	4.4	50	20	160
4-Chlorophenyl phenyl ether	25.0	15.7	62.8	25.0	16.3	65.2	3.8	50	25	158
4-Nitroaniline	25.0	13.9	55.6	25.0	14.8	59.2	6.3	50	20	160
4-Nitrophenol	25.0	13.0	52.0	25.0	14.8	59.2	12.9	50	10	132
Acenaphthene	25.0	15.3	61.2	25.0	16.3	65.2	6.3	31	30	150
Acenaphthylene	25.0	15.4	61.6	25.0	16.4	65.6	6.3	50	33	250
Aniline	50.0	29.9	59.8	50.0	30.9	61.8	3.3	50	10	135
Anthracene	25.0	15.6	62.4	25.0	16.5	66.0	5.6	50	27	133
Benz(a)anthracene	25.0	15.6	62.4	25.0	16.4	65.6	5.0	50	33	143
Benzo(a)pyrene	25.0	12.2	48.8	25.0	12.7	50.8	4.0	50	17	163
Benzo(b)fluoranthene	25.0	14.9	59.6	25.0	15.2	60.8	2.0	50	24	159
Benzo(g,h,i)perylene	25.0	15.7	62.8	25.0	15.9	63.6	1.3	50	30	160
Benzo(k)fluoranthene	25.0	15.0	60.0	25.0	15.2	60.8	1.3	50	11	162

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040279
Method: SW8270C **Lab Batch ID:** 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzoic acid	25.0	15.7	62.8	25.0	16.0	64.0	1.9	50	10	400
Benzyl alcohol	25.0	14.7	58.8	25.0	16.2	64.8	9.7	50	30	160
Bis(2-chloroethoxy)methane	25.0	15.2	60.8	25.0	15.8	63.2	3.9	50	33	184
Bis(2-chloroethyl)ether	25.0	15.8	63.2	25.0	16.7	66.8	5.5	50	12	158
Bis(2-chloroisopropyl)ether	25.0	15.6	62.4	25.0	16.1	64.4	3.2	50	20	160
Bis(2-ethylhexyl)phthalate	25.0	16.1	64.4	25.0	17.0	68.0	5.4	50	10	158
Butyl benzyl phthalate	25.0	16.3	65.2	25.0	17.0	68.0	4.2	50	30	160
Carbazole	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	30	150
Chrysene	25.0	15.0	60.0	25.0	16.0	64.0	6.5	50	17	168
Dibenz(a,h)anthracene	25.0	15.5	62.0	25.0	15.7	62.8	1.3	50	30	160
Dibenzofuran	25.0	15.7	62.8	25.0	16.4	65.6	4.4	50	30	150
Diethyl phthalate	25.0	16.0	64.0	25.0	17.1	68.4	6.6	50	30	160
Dimethyl phthalate	25.0	15.7	62.8	25.0	16.8	67.2	6.8	50	30	160
Di-n-butyl phthalate	25.0	16.6	66.4	25.0	17.1	68.4	3.0	50	30	160
Di-n-octyl phthalate	25.0	16.2	64.8	25.0	17.0	68.0	4.8	50	20	150
Fluoranthene	25.0	15.9	63.6	25.0	16.3	65.2	2.5	50	26	137
Fluorene	25.0	15.4	61.6	25.0	16.3	65.2	5.7	50	30	150
Hexachlorobenzene	25.0	15.4	61.6	25.0	16.6	66.4	7.5	50	20	150
Hexachlorobutadiene	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	20	140
Hexachlorocyclopentadiene	25.0	17.2	68.8	25.0	19.1	76.4	10.5	50	10	150
Hexachloroethane	25.0	15.0	60.0	25.0	16.3	65.2	8.3	50	14	120
Indeno(1,2,3-cd)pyrene	25.0	16.3	65.2	25.0	17.5	70.0	7.1	50	30	160
Isophorone	25.0	16.2	64.8	25.0	17.3	69.2	6.6	50	21	196
Naphthalene	25.0	15.4	61.6	25.0	16.2	64.8	5.1	50	21	133
Nitrobenzene	25.0	15.3	61.2	25.0	16.0	64.0	4.5	50	20	160
N-Nitrosodi-n-propylamine	25.0	15.6	62.4	25.0	15.4	61.6	1.3	38	30	160
N-Nitrosodiphenylamine	50.0	38.0	76.0	50.0	40.4	80.8	6.1	50	30	150
Pentachlorophenol	25.0	11.5	46.0	25.0	12.8	51.2	10.7	50	14	176
Phenanthrene	25.0	15.3	61.2	25.0	16.1	64.4	5.1	50	10	140
Phenol	25.0	15.2	60.8	25.0	15.8	63.2	3.9	42	40	132
Pyrene	25.0	15.8	63.2	25.0	16.6	66.4	4.9	38	30	150
Pyridine	50.0	27.0	54.0	50.0	29.4	58.8	8.5	50	10	150
2-Methylphenol	25.0	15.7	62.8	25.0	16.2	64.8	3.1	50	30	160

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040279
Method: SW8270C **Lab Batch ID:** 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
3 & 4-Methylphenol	25.0	16.6	66.4	25.0	17.2	68.8	3.6	50	10	160
Surr: 2,4,6-Tribromophenol	75.0	61.1	81.5	75.0	60.8	81.1	0.5	30	10	123
Surr: 2-Fluorobiphenyl	50.0	28.6	57.2	50.0	29.5	59.0	3.1	30	23	116
Surr: 2-Fluorophenol	75.0	50.0	66.7	75.0	50.8	67.7	1.6	30	16	110
Surr: Nitrobenzene-d5	50.0	29.0	58.0	50.0	30.0	60.0	3.4	30	21	114
Surr: Phenol-d5	75.0	43.1	57.5	75.0	44.2	58.9	2.5	30	10	110
Surr: Terphenyl-d14	50.0	28.4	56.8	50.0	28.7	57.4	1.1	30	22	141

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09040279
Lab Batch ID: 89418

Method Blank

RunID: R_090415F-4986260
Units: ug/kg
Analysis Date: 04/16/2009 0:41
Analyst: E_R
Preparation Date: 04/13/2009 11:33
Prep By: QMT Method SW3550B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040279-01A	MW5-54-55

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
1,2-Diphenylhydrazine	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
2,4,5-Trichlorophenol	ND	800
2,4,6-Trichlorophenol	ND	330
2,4-Dichlorophenol	ND	330
2,4-Dimethylphenol	ND	330
2,4-Dinitrophenol	ND	800
2,4-Dinitrotoluene	ND	800
2,6-Dinitrotoluene	ND	330
2-Chloronaphthalene	ND	330
2-Chlorophenol	ND	330
2-Methylnaphthalene	ND	330
2-Nitroaniline	ND	800
2-Nitrophenol	ND	330
3,3'-Dichlorobenzidine	ND	330
3-Nitroaniline	ND	800
4,6-Dinitro-2-methylphenol	ND	800
4-Bromophenyl phenyl ether	ND	330
4-Chloro-3-methylphenol	ND	330
4-Chloroaniline	ND	330
4-Chlorophenyl phenyl ether	ND	330
4-Nitroaniline	ND	800
4-Nitrophenol	ND	800
Acenaphthene	ND	330
Acenaphthylene	ND	330
Aniline	ND	330
Anthracene	ND	330
Benz(a)anthracene	ND	330
Benzo(a)pyrene	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(g,h,i)perylene	ND	330
Benzo(k)fluoranthene	ND	330
Benzoic acid	ND	1600
Benzyl alcohol	ND	330
Bis(2-chloroethoxy)methane	ND	330
Bis(2-chloroethyl)ether	ND	330
Bis(2-chloroisopropyl)ether	ND	330
Bis(2-ethylhexyl)phthalate	ND	330
Butyl benzyl phthalate	ND	330
Carbazole	ND	330
Chrysene	ND	330
Dibenz(a,h)anthracene	ND	330
Dibenzofuran	ND	330

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040279
Method: SW8270C **Lab Batch ID:** 89418

Method Blank

RunID: R_090415F-4986260 Units: ug/kg
Analysis Date: 04/16/2009 0:41 Analyst: E_R
Preparation Date: 04/13/2009 11:33 Prep By: QMT Method SW3550B

Analyte	Result	Rep Limit
Diethyl phthalate	ND	330
Dimethyl phthalate	ND	330
Di-n-butyl phthalate	ND	330
Di-n-octyl phthalate	ND	330
Fluoranthene	ND	330
Fluorene	ND	330
Hexachlorobenzene	ND	330
Hexachlorobutadiene	ND	330
Hexachlorocyclopentadiene	ND	330
Hexachloroethane	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Isophorone	ND	330
Naphthalene	ND	330
Nitrobenzene	ND	330
N-Nitrosodi-n-propylamine	ND	330
N-Nitrosodiphenylamine	ND	330
Pentachlorophenol	ND	800
Phenanthrene	ND	330
Phenol	ND	330
Pyrene	ND	330
Pyridine	ND	330
2-Methylphenol	ND	330
3 & 4-Methylphenol	ND	330
Surr: 2,4,6-Tribromophenol	128.8	19-135
Surr: 2-Fluorobiphenyl	85.9	15-140
Surr: 2-Fluorophenol	114.8	15-122
Surr: Nitrobenzene-d5	78.2	10-134
Surr: Phenol-d5	115.6	10-123
Surr: Terphenyl-d14	89.4	18-166

Laboratory Control Sample (LCS)

RunID: R_090415F-4986261 Units: ug/kg
Analysis Date: 04/16/2009 1:17 Analyst: E_R
Preparation Date: 04/13/2009 11:33 Prep By: QMT Method SW3550B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,2,4-Trichlorobenzene	850	437	51.4	34	116
1,2-Dichlorobenzene	850	444	52.2	32	129
1,2-Diphenylhydrazine	850	430	50.6	10	256

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040279
Method: SW8270C **Lab Batch ID:** 89418

Laboratory Control Sample (LCS)

RunID: R_090415F-4986261 Units: ug/kg
Analysis Date: 04/16/2009 1:17 Analyst: E_R
Preparation Date: 04/13/2009 11:33 Prep By: QMT Method SW3550B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,3-Dichlorobenzene	850	434	51.1	10	172
1,4-Dichlorobenzene	850	426	50.1	20	124
2,4,5-Trichlorophenol	850	421	49.5	40	150
2,4,6-Trichlorophenol	850	470	55.3	37	144
2,4-Dichlorophenol	850	445	52.4	39	135
2,4-Dimethylphenol	850	443	52.1	32	119
2,4-Dinitrophenol	850	276	32.5	10	191
2,4-Dinitrotoluene	850	409	48.1	30	150
2,6-Dinitrotoluene	850	419	49.3	30	150
2-Chloronaphthalene	850	460	54.1	20	175
2-Chlorophenol	850	463	54.5	23	134
2-Methylnaphthalene	850	427	50.2	30	135
2-Nitroaniline	850	400	47.1	20	175
2-Nitrophenol	850	421	49.5	29	182
3,3'-Dichlorobenzidine	850	421	49.5	10	261
3-Nitroaniline	850	389	45.8	20	175
4,6-Dinitro-2-methylphenol	850	260	30.6	10	181
4-Bromophenyl phenyl ether	850	450	52.9	20	175
4-Chloro-3-methylphenol	850	469	55.2	22	147
4-Chloroaniline	850	443	52.1	20	175
4-Chlorophenyl phenyl ether	850	443	52.1	25	158
4-Nitroaniline	850	396	46.6	20	175
4-Nitrophenol	850	446	52.5	10	132
Acenaphthene	850	433	50.9	30	160
Acenaphthylene	850	449	52.8	10	150
Aniline	1700	846	49.8	10	160
Anthracene	850	441	51.9	27	133
Benz(a)anthracene	850	454	53.4	33	143
Benzo(a)pyrene	850	368	43.3	17	163
Benzo(b)fluoranthene	850	432	50.8	24	159
Benzo(g,h,i)perylene	850	439	51.6	10	219
Benzo(k)fluoranthene	850	420	49.4	11	162
Benzoic acid	850	127	14.9	10	450
Benzyl alcohol	850	500	58.8	30	160

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09040279
Lab Batch ID: 89418

Laboratory Control Sample (LCS)

RunID: R_090415F-4986261
Analysis Date: 04/16/2009 1:17
Preparation Date: 04/13/2009 11:33
Units: ug/kg
Analyst: E_R
Prep By: QMT Method SW3550B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Bis(2-chloroethoxy)methane	850	419	49.3	33	184
Bis(2-chloroethyl)ether	850	438	51.5	28	158
Bis(2-chloroisopropyl)ether	850	412	48.5	36	166
Bis(2-ethylhexyl)phthalate	850	389	45.8	10	158
Butyl benzyl phthalate	850	412	48.5	10	152
Carbazole	850	430	50.6	45	135
Chrysene	850	450	52.9	17	168
Dibenz(a,h)anthracene	850	442	52.0	10	227
Dibenzofuran	850	447	52.6	30	160
Diethyl phthalate	850	421	49.5	10	160
Dimethyl phthalate	850	438	51.5	10	112
Di-n-butyl phthalate	850	411	48.4	40	132
Di-n-octyl phthalate	850	433	50.9	10	146
Fluoranthene	850	459	54.0	26	137
Fluorene	850	435	51.2	35	135
Hexachlorobenzene	850	466	54.8	10	152
Hexachlorobutadiene	850	427	50.2	20	140
Hexachlorocyclopentadiene	850	344	40.5	10	152
Hexachloroethane	850	396	46.6	25	118
Indeno(1,2,3-cd)pyrene	850	515	60.6	10	171
Isophorone	850	444	52.2	21	196
Naphthalene	850	433	50.9	21	133
Nitrobenzene	850	397	46.7	35	180
N-Nitrosodi-n-propylamine	850	418	49.2	10	230
N-Nitrosodiphenylamine	1700	1070	62.9	30	160
Pentachlorophenol	850	420	49.4	14	176
Phenanthrene	850	428	50.4	35	135
Phenol	850	495	58.2	44	120
Pyrene	850	442	52.0	34	138
Pyridine	1700	767	45.1	10	150
2-Methylphenol	850	472	55.5	40	160
3 & 4-Methylphenol	850	420	49.4	40	160
Surr: 2,4,6-Tribromophenol	2500	1780	71.2	19	135
Surr: 2-Fluorobiphenyl	1700	851	50.1	15	140

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040279
Method: SW8270C **Lab Batch ID:** 89418

Laboratory Control Sample (LCS)

RunID: R_090415F-4986261 Units: ug/kg
Analysis Date: 04/16/2009 1:17 Analyst: E_R
Preparation Date: 04/13/2009 11:33 Prep By: QMT Method SW3550B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Surr: 2-Fluorophenol	2500	1720	68.8	15	122
Surr: Nitrobenzene-d5	1700	783	46.1	32	153
Surr: Phenol-d5	2500	1710	68.4	10	123
Surr: Terphenyl-d14	1700	807	47.5	18	166

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040279-01
RunID: R_090416C-4987093 Units: ug/kg
Analysis Date: 04/16/2009 15:41 Analyst: E_R
Preparation Date: 04/13/2009 11:33 Prep By: QMT Method SW3550B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2,4-Trichlorobenzene	ND	850	727	85.5	850	732	86.1	0.685	28	34	116
1,2-Dichlorobenzene	ND	850	710	83.5	850	715	84.1	0.702	60	32	129
1,2-Diphenylhydrazine	ND	850	710	83.5	850	736	86.6	3.60	60	10	256
1,3-Dichlorobenzene	ND	850	693	81.5	850	688	80.9	0.724	60	10	172
1,4-Dichlorobenzene	ND	850	687	80.8	850	696	81.9	1.30	28	20	124
2,4,5-Trichlorophenol	ND	850	775	91.2	850	741	87.2	4.49	60	40	150
2,4,6-Trichlorophenol	ND	850	776	91.3	850	796	93.6	2.54	60	37	144
2,4-Dichlorophenol	ND	850	763	89.8	850	760	89.4	0.394	60	39	135
2,4-Dimethylphenol	ND	850	769	90.5	850	749	88.1	2.64	60	32	119
2,4-Dinitrophenol	ND	850	502	59.1	850	359	42.2	33.2	60	10	191
2,4-Dinitrotoluene	ND	850	796	93.6	850	742	87.3	7.02	50	30	150
2,6-Dinitrotoluene	ND	850	753	88.6	850	739	86.9	1.88	60	30	150
2-Chloronaphthalene	ND	850	745	87.6	850	754	88.7	1.20	60	20	175
2-Chlorophenol	ND	850	764	89.9	850	774	91.1	1.30	40	23	134
2-Methylnaphthalene	ND	850	726	85.4	850	727	85.5	0.138	60	30	135
2-Nitroaniline	ND	850	727	85.5	850	703	82.7	3.36	60	20	175
2-Nitrophenol	ND	850	749	88.1	850	744	87.5	0.670	60	29	182
3,3'-Dichlorobenzidine	ND	850	680	80.0	850	702	82.6	3.18	60	10	261

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040279
Method: SW8270C **Lab Batch ID:** 89418

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040279-01
RunID: R_090416C-4987093 Units: ug/kg
Analysis Date: 04/16/2009 15:41 Analyst: E_R
Preparation Date: 04/13/2009 11:33 Prep By: QMT Method SW3550B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
3-Nitroaniline	ND	850	776	91.3	850	722	84.9	7.21	60	20	175
4,6-Dinitro-2-methylphenol	ND	850	594	69.9	850	430	50.6	32.0	60	10	181
4-Bromophenyl phenyl ether	ND	850	732	86.1	850	760	89.4	3.75	60	20	175
4-Chloro-3-methylphenol	ND	850	831	97.8	850	816	96.0	1.82	42	22	147
4-Chloroaniline	ND	850	782	92.0	850	760	89.4	2.85	60	20	175
4-Chlorophenyl phenyl ether	ND	850	747	87.9	850	750	88.2	0.401	60	25	158
4-Nitroaniline	ND	850	759	89.3	850	685	80.6	10.2	60	20	175
4-Nitrophenol	ND	850	777	91.4	850	671	78.9	14.6	50	10	132
Acenaphthene	ND	850	726	85.4	850	729	85.8	0.412	31	30	160
Acenaphthylene	ND	850	752	88.5	850	749	88.1	0.400	50	10	150
Aniline	ND	1700	1430	84.1	1700	1380	81.2	3.56	60	10	160
Anthracene	ND	850	764	89.9	850	756	88.9	1.05	50	27	133
Benz(a)anthracene	ND	850	788	92.7	850	791	93.1	0.380	50	33	143
Benzo(a)pyrene	ND	850	632	74.4	850	645	75.9	2.04	60	17	163
Benzo(b)fluoranthene	ND	850	737	86.7	850	767	90.2	3.99	60	24	159
Benzo(g,h,i)perylene	ND	850	773	90.9	850	770	90.6	0.389	60	10	219
Benzo(k)fluoranthene	ND	850	752	88.5	850	718	84.5	4.63	60	11	162
Benzoic acid	ND	850	248	29.2	850	185	21.8	29.1	60	10	450
Benzyl alcohol	ND	850	864	102	850	866	102	0.231	60	30	160
Bis(2-chloroethoxy)methane	ND	850	711	83.6	850	706	83.1	0.706	60	33	184
Bis(2-chloroethyl)ether	ND	850	710	83.5	850	718	84.5	1.12	60	28	158
Bis(2-chloroisopropyl)ether	ND	850	670	78.8	850	674	79.3	0.595	60	36	166
Bis(2-ethylhexyl)phthalate	ND	850	731	86.0	850	734	86.4	0.410	60	10	158
Butyl benzyl phthalate	ND	850	737	86.7	850	729	85.8	1.09	60	10	152
Carbazole	ND	850	767	90.2	850	736	86.6	4.13	60	45	135
Chrysene	ND	850	784	92.2	850	770	90.6	1.80	60	17	168
Dibenz(a,h)anthracene	ND	850	776	91.3	850	809	95.2	4.16	60	10	227
Dibenzofuran	ND	850	756	88.9	850	751	88.4	0.664	60	45	135
Diethyl phthalate	ND	850	723	85.1	850	716	84.2	0.973	60	10	160
Dimethyl phthalate	ND	850	746	87.8	850	732	86.1	1.89	60	10	112
Di-n-butyl phthalate	ND	850	756	88.9	850	750	88.2	0.797	60	40	132
Di-n-octyl phthalate	ND	850	675	79.4	850	701	82.5	3.78	60	10	146

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040279
Method: SW8270C **Lab Batch ID:** 89418

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040279-01
RunID: R_090416C-4987093 Units: ug/kg
Analysis Date: 04/16/2009 15:41 Analyst: E_R
Preparation Date: 04/13/2009 11:33 Prep By: QMT Method SW3550B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Fluoranthene	ND	850	822	96.7	850	782	92.0	4.99	60	26	137
Fluorene	ND	850	748	88.0	850	735	86.5	1.75	60	45	135
Hexachlorobenzene	ND	850	773	90.9	850	791	93.1	2.30	60	10	152
Hexachlorobutadiene	ND	850	686	80.7	850	702	82.6	2.31	60	20	140
Hexachlorocyclopentadiene	ND	850	651	76.6	850	547	64.4	17.4	60	10	152
Hexachloroethane	ND	850	639	75.2	850	640	75.3	0.156	60	25	118
Indeno(1,2,3-cd)pyrene	ND	850	782	92.0	850	826	97.2	5.47	60	10	171
Isophorone	ND	850	759	89.3	850	750	88.2	1.19	60	21	196
Naphthalene	ND	850	732	86.1	850	720	84.7	1.65	60	21	133
Nitrobenzene	ND	850	693	81.5	850	671	78.9	3.23	60	35	180
N-Nitrosodi-n-propylamine	ND	850	693	81.5	850	699	82.2	0.862	38	10	230
N-Nitrosodiphenylamine	ND	1700	1780	105	1700	1840	108	3.31	60	30	160
Pentachlorophenol	ND	850	681	80.1	850	690	81.2	1.31	50	14	176
Phenanthrene	ND	850	737	86.7	850	735	86.5	0.272	60	45	135
Phenol	ND	850	861	101	850	828	97.4	3.91	42	44	120
Pyrene	ND	850	774	91.1	850	757	89.1	2.22	31	26	127
Pyridine	ND	1700	1230	72.4	1700	1200	70.6	2.47	60	10	150
2-Methylphenol	ND	850	814	95.8	850	796	93.6	2.24	60	40	160
3 & 4-Methylphenol	ND	850	737	86.7	850	724	85.2	1.78	60	40	160
Surr: 2,4,6-Tribromophenol	ND	2500	3160	126	2500	3060	122	3.22	30	19	135
Surr: 2-Fluorobiphenyl	ND	1700	1390	81.8	1700	1410	82.9	1.43	30	15	140
Surr: 2-Fluorophenol	ND	2500	2850	114	2500	2800	112	1.77	30	15	122
Surr: Nitrobenzene-d5	ND	1700	1340	78.8	1700	1310	77.1	2.26	30	10	134
Surr: Phenol-d5	ND	2500	2930	117	2500	2840	114	3.12	30	10	123
Surr: Terphenyl-d14	ND	1700	1390	81.8	1700	1380	81.2	0.722	30	18	166

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040279
Lab Batch ID: R270179

Method Blank

RunID: Q_090413A-4983274 Units: ug/L
Analysis Date: 04/13/2009 9:17 Analyst: JC
Preparation Date: 04/13/2009 9:17 Prep By: Method

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040279-02A	MW-1
09040279-03A	TB-4-8-09B
09040279-04A	FB-4-8-09B

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	20
Acrylonitrile	ND	10
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040279
Lab Batch ID: R270179

Method Blank

RunID: Q_090413A-4983274 Units: ug/L
Analysis Date: 04/13/2009 9:17 Analyst: JC
Preparation Date: 04/13/2009 9:17 Prep By: Method

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	2.0
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	100.0	62-130
Surr: 4-Bromofluorobenzene	108.0	70-130
Surr: Toluene-d8	94.0	74-122

Laboratory Control Sample (LCS)

RunID: Q_090413A-4983272 Units: ug/L
Analysis Date: 04/13/2009 8:49 Analyst: JC
Preparation Date: 04/13/2009 8:49 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	21.0	105	71	136
1,1,1-Trichloroethane	20.0	22.0	110	66	132
1,1,2,2-Tetrachloroethane	20.0	21.0	105	55	139
1,1,2-Trichloroethane	20.0	21.0	105	70	130
1,1-Dichloroethane	20.0	21.0	105	67	131

Qualifiers:

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J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040279
Lab Batch ID: R270179

Laboratory Control Sample (LCS)

RunID: Q_090413A-4983272 Units: ug/L
Analysis Date: 04/13/2009 8:49 Analyst: JC
Preparation Date: 04/13/2009 8:49 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	24.0	120	71	146
1,1-Dichloropropene	20.0	20.0	100	59	138
1,2,3-Trichlorobenzene	20.0	18.0	90.0	37	155
1,2,3-Trichloropropane	20.0	20.0	100	70	145
1,2,4-Trichlorobenzene	20.0	17.0	85.0	39	133
1,2,4-Trimethylbenzene	20.0	17.0	85.0	53	147
1,2-Dibromo-3-chloropropane	20.0	16.0	80.0	43	137
1,2-Dibromoethane	20.0	21.0	105	63	126
1,2-Dichlorobenzene	20.0	18.0	90.0	70	130
1,2-Dichloroethane	20.0	19.0	95.0	64	150
1,2-Dichloropropane	20.0	20.0	100	76	124
1,3,5-Trimethylbenzene	20.0	17.0	85.0	57	146
1,3-Dichlorobenzene	20.0	18.0	90.0	72	134
1,3-Dichloropropane	20.0	19.0	95.0	78	130
1,4-Dichlorobenzene	20.0	18.0	90.0	70	130
2,2-Dichloropropane	20.0	18.0	90.0	45	156
2-Butanone	20.0	20.0	100	20	235
2-Chloroethyl vinyl ether	20.0	18.0	90.0	13	179
2-Chlorotoluene	20.0	18.0	90.0	64	122
2-Hexanone	20.0	18.0	90.0	34	182
4-Chlorotoluene	20.0	18.0	90.0	64	142
4-Isopropyltoluene	20.0	17.0	85.0	60	134
4-Methyl-2-pentanone	20.0	18.0	90.0	11	145
Acetone	20.0	21.0	105	13	386
Acrylonitrile	20.0	20.0	100	43	194
Benzene	20.0	21.0	105	76	126
Bromobenzene	20.0	18.0	90.0	70	130
Bromochloromethane	20.0	24.0	120	63	131
Bromodichloromethane	20.0	21.0	105	77	138
Bromoform	20.0	20.0	100	55	129
Bromomethane	20.0	24.0	120	58	148
Carbon disulfide	20.0	22.0	110	46	146
Carbon tetrachloride	20.0	21.0	105	66	137
Chlorobenzene	20.0	21.0	105	67	136

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040279
Lab Batch ID: R270179

Laboratory Control Sample (LCS)

RunID: Q_090413A-4983272
Analysis Date: 04/13/2009 8:49
Preparation Date: 04/13/2009 8:49
Units: ug/L
Analyst: JC
Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	22.0	110	50	137
Chloroform	20.0	22.0	110	70	135
Chloromethane	20.0	19.0	95.0	51	140
Dibromochloromethane	20.0	20.0	100	69	127
Dibromomethane	20.0	21.0	105	74	130
Dichlorodifluoromethane	20.0	18.0	90.0	32	161
Ethylbenzene	20.0	20.0	100	67	122
Hexachlorobutadiene	20.0	16.0	80.0	43	144
Isopropylbenzene	20.0	17.0	85.0	60	135
Methyl tert-butyl ether	40.0	47.0	118	48	160
Methylene chloride	20.0	23.0	115	52	143
Naphthalene	20.0	17.0	85.0	24	150
n-Butylbenzene	20.0	16.0	80.0	50	140
n-Propylbenzene	20.0	16.0	80.0	62	137
sec-Butylbenzene	20.0	17.0	85.0	66	126
Styrene	20.0	20.0	100	60	139
tert-Butylbenzene	20.0	17.0	85.0	67	140
Tetrachloroethene	20.0	26.0	130	26	200
Toluene	20.0	20.0	100	70	131
Trichloroethene	20.0	22.0	110	64	137
Trichlorofluoromethane	20.0	23.0	115	46	167
Vinyl acetate	20.0	15.0	75.0	10	193
Vinyl chloride	20.0	21.0	105	31	147
cis-1,2-Dichloroethene	20.0	24.0	120	70	142
cis-1,3-Dichloropropene	20.0	17.0	85.0	61	134
m,p-Xylene	40.0	41.0	102	72	150
o-Xylene	20.0	21.0	105	78	141
trans-1,2-Dichloroethene	20.0	24.0	120	67	141
trans-1,3-Dichloropropene	20.0	16.0	80.0	56	136
1,2-Dichloroethene (total)	40	48	120	73	139
Xylenes,Total	60	62	100	72	150
Surr: 1,2-Dichloroethane-d4	50.0	48	96.0	62	130
Surr: 4-Bromofluorobenzene	50.0	54	108	70	130
Surr: Toluene-d8	50.0	47	94.0	74	122

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040279
Method: SW8260B **Lab Batch ID:** R270179

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040341-01
RunID: Q_090413A-4983276 Units: ug/L
Analysis Date: 04/13/2009 10:12 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
1,1,1-Trichloroethane	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	35	175
1,1,2,2-Tetrachloroethane	ND	20	12.0	60.0	20	13.0	65.0	8.00	20	35	175
1,1,2-Trichloroethane	ND	20	10.0	50.0	20	10.0	50.0	0	20	35	175
1,1-Dichloroethane	ND	20	19.0	90.0	20	18.0	85.0	5.41	20	35	175
1,1-Dichloroethene	ND	20	19.0	95.0	20	19.0	95.0	0	22	61	145
1,1-Dichloropropene	ND	20	20.0	100	20	20.0	100	0	20	35	175
1,2,3-Trichlorobenzene	ND	20	17.0	85.0	20	18.0	90.0	5.71	20	27	187
1,2,3-Trichloropropane	ND	20	22.0	110	20	23.0	115	4.44	20	35	175
1,2,4-Trichlorobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	34	150
1,2,4-Trimethylbenzene	260	20	250	N/C	20	250	N/C	N/C	20	35	175
1,2-Dibromo-3-chloropropane	ND	20	24.0	120	20	23.0	115	4.26	20	15	175
1,2-Dibromoethane	380	20	390	N/C	20	380	N/C	N/C	20	35	175
1,2-Dichlorobenzene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
1,2-Dichloroethane	900	20	880	N/C	20	870	N/C	N/C	20	35	175
1,2-Dichloropropane	ND	20	27.0	135	20	27.0	135	0	20	35	175
1,3,5-Trimethylbenzene	190	20	190	N/C	20	190	N/C	N/C	20	35	175
1,3-Dichlorobenzene	ND	20	19.0	95.0	20	18.0	90.0	5.41	20	35	175
1,3-Dichloropropane	ND	20	60.0	300 *	20	62.0	310 *	3.28	20	35	175
1,4-Dichlorobenzene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
2,2-Dichloropropane	ND	20	15.0	75.0	20	16.0	80.0	6.45	20	35	175
2-Butanone	3400	20	3400	N/C	20	3200	N/C	N/C	20	10	230
2-Chloroethyl vinyl ether	ND	20	2.00	10.0	20	1.00	5.00 *	66.7 *	20	10	250
2-Chlorotoluene	ND	20	19.0	95.0	20	19.0	95.0	0	20	31	175
2-Hexanone	320	20	320	N/C	20	280	N/C	N/C	20	10	250
4-Chlorotoluene	ND	20	17.0	85.0	20	17.0	85.0	0	20	31	175
4-Isopropyltoluene	ND	20	21.0	105	20	20.0	100	4.88	20	35	175
4-Methyl-2-pentanone	110	20	120	N/C	20	110	N/C	N/C	20	10	175
Acetone	2100	20	1800	N/C	20	1800	N/C	N/C	20	10	400
Acrylonitrile	ND	20	26.0	130	20	24.0	120	8.00	20	15	250

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HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040279
Method: SW8260B **Lab Batch ID:** R270179

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040341-01
RunID: Q_090413A-4983276 Units: ug/L
Analysis Date: 04/13/2009 10:12 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	1100	20	1000	N/C	20	1000	N/C	N/C	22	76	127
Bromobenzene	ND	20	20.0	100	20	19.0	95.0	5.13	20	35	175
Bromochloromethane	ND	20	21.0	105	20	22.0	110	4.65	20	35	175
Bromodichloromethane	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
Bromoform	ND	20	0	0 *	20	0	0 *	0	20	35	175
Bromomethane	ND	20	16.0	80.0	20	18.0	90.0	11.8	20	35	175
Carbon disulfide	ND	20	21.0	90.0	20	21.0	90.0	0	20	30	225
Carbon tetrachloride	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	35	175
Chlorobenzene	ND	20	20.0	100	20	20.0	100	0	21	70	130
Chloroethane	ND	20	20.0	75.0	20	20.0	75.0	0	20	35	175
Chloroform	ND	20	21.0	105	20	21.0	105	0	20	35	175
Chloromethane	ND	20	13.0	65.0	20	14.0	70.0	7.41	20	35	175
Dibromochloromethane	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
Dibromomethane	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
Dichlorodifluoromethane	ND	20	13.0	65.0	20	13.0	65.0	0	20	35	175
Ethylbenzene	960	20	930	N/C	20	930	N/C	N/C	20	35	175
Hexachlorobutadiene	ND	20	16.0	80.0	20	16.0	80.0	0	20	43	144
Isopropylbenzene	60.0	20	74.0	70.0	20	73.0	65.0	1.36	20	35	175
Methyl tert-butyl ether	750	40	750	N/C	40	740	N/C	N/C	20	35	175
Methylene chloride	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	52	143
Naphthalene	240	20	230	N/C	20	230	N/C	N/C	20	20	210
n-Butylbenzene	15.0	20	31.0	80.0	20	31.0	80.0	0	20	35	175
n-Propylbenzene	160	20	180	N/C	20	170	N/C	N/C	20	35	175
sec-Butylbenzene	ND	20	26.0	130	20	26.0	130	0	20	35	175
Styrene	ND	20	18.0	85.0	20	19.0	90.0	5.41	20	35	175
tert-Butylbenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	35	175
Tetrachloroethene	ND	20	25.0	125	20	26.0	130	3.92	20	30	250
Toluene	1600	20	1400	N/C	20	1400	N/C	N/C	24	70	131
Trichloroethene	ND	20	22.0	110	20	21.0	105	4.65	21	60	140
Trichlorofluoromethane	ND	20	16.0	80.0	20	16.0	80.0	0	20	17	250
Vinyl acetate	ND	20	15.0	75.0	20	15.0	75.0	0	20	10	250
Vinyl chloride	ND	20	17.0	85.0	20	17.0	85.0	0	20	35	175

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040279
Method: SW8260B **Lab Batch ID:** R270179

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040341-01
RunID: Q_090413A-4983276 Units: ug/L
Analysis Date: 04/13/2009 10:12 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	20	21.0	105	20	22.0	110	4.65	20	35	175
cis-1,3-Dichloropropene	ND	20	19.0	95.0	20	18.0	90.0	5.41	20	35	175
m,p-Xylene	1200	40	1200	N/C	40	1200	N/C	N/C	20	35	175
o-Xylene	920	20	860	N/C	20	880	N/C	N/C	20	35	175
trans-1,2-Dichloroethene	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
trans-1,3-Dichloropropene	ND	20	18.0	90.0	20	15.0	75.0	18.2	20	35	175
1,2-Dichloroethene (total)	ND	40	40	100	40	41	100	2.5	20	35	175
Xylenes,Total	2120	60	2060	N/C	60	2080	N/C	N/C	20	35	175
Surr: 1,2-Dichloroethane-d4	ND	50	43	86.0	50	42.0	84.0	2.35	30	62	130
Surr: 4-Bromofluorobenzene	ND	50	50	100	50	51.0	102	1.98	30	70	130
Surr: Toluene-d8	ND	50	47	94.0	50	48.0	96.0	2.11	30	74	122

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Alkalinity (as CaCO3), Total
Method: E310.1
WorkOrder: 09040279
Lab Batch ID: R270144

Method Blank

RunID: WET_090413F-4982657 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040279-02F	MW-1

Analyte	Result	Rep Limit
Alkalinity, Total (As CaCO3)	ND	2.0

Laboratory Control Sample (LCS)

RunID: WET_090413F-4982659 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Total (As CaCO3)	38.70	39.00	100.8	90	110

Sample Duplicate

Original Sample: 09040278-01
RunID: WET_090413F-4982660 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Total (As CaCO3)	174	175	0.573	20

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 09040279
Lab Batch ID: R270277A

Method Blank

RunID: IC2_090409A-4984862 Units: mg/L
Analysis Date: 04/09/2009 12:18 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040279-02F	MW-1

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090409A-4984863 Units: mg/L
Analysis Date: 04/09/2009 12:36 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10.00	9.147	91.47	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040169-02
RunID: IC2_090409A-4984879 Units: mg/L
Analysis Date: 04/09/2009 18:26 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	10	10.10	101.0	10	10.09	100.9	0.06932	20	80	120

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 09040279
Lab Batch ID: R270297

Method Blank

RunID: IC2_090414D-4985092 Units: mg/L
Analysis Date: 04/14/2009 10:38 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040279-02F	MW-1

Analyte	Result	Rep Limit
Chloride	ND	0.50
Sulfate	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090414D-4985093 Units: mg/L
Analysis Date: 04/14/2009 10:55 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	10.00	10.52	105.2	85	115
Sulfate	10.00	10.57	105.7	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040254-01
RunID: IC2_090414D-4985097 Units: mg/L
Analysis Date: 04/14/2009 12:05 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	ND	10	10.68	106.8	10	10.66	106.6	0.2155	20	80	120
Sulfate	ND	10	11.07	110.7	10	10.07	100.7	9.423	20	80	120

Qualifiers:

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Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**09040279**	Received By:	**BF**
Date and Time Received:	**4/9/2009 10:00:00 AM**	Carrier name:	**Fedex-Standard Overnight**
Temperature:	**3.0°C**	Chilled by:	**Water Ice**

1. **Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐	
2. **Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐	
3. **Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑	
4. **Chain of custody present?**	Yes ☑	No ☐		
5. **Chain of custody signed when relinquished and received?**	Yes ☑	No ☐		
6. **Chain of custody agrees with sample labels?** 1 Received 3 vials w/HCL for CH4 Methane but not written on chain, placed on hold.	Yes ☐	No ☑		
7. **Samples in proper container/bottle?**	Yes ☑	No ☐		
8. **Sample containers intact?**	Yes ☑	No ☐		
9. **Sufficient sample volume for indicated test?**	Yes ☑	No ☐		
10. **All samples received within holding time?**	Yes ☑	No ☐		
11. **Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐		
12. **Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐	
13. **Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☑	Not Applicable ☐	

***VOA Preservation Checked After Sample Analysis**

SPL Representative: Rodriguez, Alisha C. **Contact Date & Time:** 4/9/2009 2:53:00 PM

Client Name Contacted: Rick Rexroad w/Brown & Caldwell

Non Conformance Issues:

Client Instructions: Client emailed back at 13:31 on Monday 04/13/09 requesting that the extra vials be analyzed for Methane only

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No. 322330
09040279
page 1 of 1

Client Name: Brown and Caldwell
Address: 1415 Louisiana #2500
City Houston State TX Zip 77002
Phone/Fax: 713-759-0999 / 713-308-3886
Client Contact: R Rexroad Email: RRexroad@Browncald.com
Project Name/No.: 128125 - BJ Services
Site Name: Fracmaster
Site Location: Hobbs, NM
Invoice To: R Rexroad Ph: 713-646-1129

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: TPH-D/o (8015)	SVOCs (8270)	TPH-G (8015)	VOCs (8260)	Chloride (300.0)	Alkalinity/Mg/SO4
MWS-54-55	4-7-09	1431		X	S	G	8	-	1	X	X				
MW-1	↓	1509		X	W	VAP	40/1/16	Lab	14	X	X	X	X	X	X
TB-4-8-09 B	4/8/09	1007		X	W	V	40	Lab	2				X		
FB-4-8-09 B	↓	1010		X	W	V	40	Lab	3				X		

RUSH

Client/Consultant Remarks:

Laboratory remarks:

Intact? Y N
Ice? Y N
Temp: 3.0C

Requested TAT
- 1 Business Day
- 2 Business Days
- 3 Business Days
- Contract
- Standard
- Other
Rush TAT requires prior notice

Special Reporting Requirements Results: Fax Email PDF
Standard QC Level 3 QC Level 4 QC TX TRRP LA RECAP

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler:	date 4/8/09	time 1020	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 4/9/09	time 1000	6. Received by Laboratory:

8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09040278

Report To:		Project Name:	Fracmaster
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	4/27/2009
ph: (713) 759-0999	fax:		

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

For Volatile Organics analysis (8260B), the results for 2-chloroethyl vinyl ether are estimated due to sample preservation. The result for this compound is reported as "ND J" for all samples in the report.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID:89427 for the Semivolatile Hydrocarbons analysis by Method 8015B. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID:89412 for the Semivolatile Organics analysis by SW846 Method 8270C. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Agnes V. Vicknair

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

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Brown & Caldwell

Certificate of Analysis Number:

09040278

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To:

Project Name: Fracmaster
Site: Hobbs NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 4/27/2009

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-3	09040278-01	Water	4/8/2009 8:12:00 AM	4/9/2009 10:00:00 AM	322329	☐
TB-4-8-09A	09040278-02	Water	4/8/2009 8:32:00 AM	4/9/2009 10:00:00 AM	322329	☐
FB-4-8-09A	09040278-03	Water	4/8/2009 9:03:00 AM	4/9/2009 10:00:00 AM	322329	☐

Agnes V. Vicknair
Project Manager

4/27/2009
Date

Kesavalu M. Bagawandoss
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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Client Sample ID: MW-3 **Collected:** 04/08/2009 8:12 **SPL Sample ID:** 09040278-01

Site: Hobbs NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
ALKALINITY (AS CACO3), TOTAL					**MCL**	**E310.1**	**Units: mg/L**	
Alkalinity, Total (As CaCO3)	174			2	1	04/13/09 11:20	PAC	4982660
GASOLINE RANGE ORGANICS					**MCL**	**SW8015B**	**Units: mg/L**	
Gasoline Range Organics	ND			0.1	1	04/13/09 16:21	CLJ	4984671
Surr: 1,4-Difluorobenzene	92.0		%	60-155	1	04/13/09 16:21	CLJ	4984671
Surr: 4-Bromofluorobenzene	104		%	50-158	1	04/13/09 16:21	CLJ	4984671
HEADSPACE GAS ANALYSIS					**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND			0.0012	1	04/24/09 16:07	V_L	4996399
ION CHROMATOGRAPHY					**MCL**	**E300.0**	**Units: mg/L**	
Chloride	52.5			5	10	04/14/09 22:00	BDG	4985115
Sulfate	83.6			5	10	04/14/09 22:00	BDG	4985115
Nitrogen,Nitrate (As N)	ND			0.5	1	04/09/09 15:13	BDG	4984872
SEMIVOLATILE HYDROCARBONS					**MCL**	**SW8015B**	**Units: mg/L**	
Diesel Range Organics	ND			0.1	1	04/16/09 23:39	NW	4987512
Mineral Spirits Range Organics	ND			0.1	1	04/16/09 23:39	NW	4987512
Surr: n-Pentacosane	48.4		%	20-150	1	04/16/09 23:39	NW	4987512

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 14:10	N_M	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	04/17/09 15:26	GY	4992373
1,2-Dichlorobenzene	ND		5	1	04/17/09 15:26	GY	4992373
1,2-Diphenylhydrazine	ND		10	1	04/17/09 15:26	GY	4992373
1,3-Dichlorobenzene	ND		5	1	04/17/09 15:26	GY	4992373
1,4-Dichlorobenzene	ND		5	1	04/17/09 15:26	GY	4992373
2,4,5-Trichlorophenol	ND		10	1	04/17/09 15:26	GY	4992373
2,4,6-Trichlorophenol	ND		5	1	04/17/09 15:26	GY	4992373
2,4-Dichlorophenol	ND		5	1	04/17/09 15:26	GY	4992373
2,4-Dimethylphenol	ND		5	1	04/17/09 15:26	GY	4992373
2,4-Dinitrophenol	ND		25	1	04/17/09 15:26	GY	4992373
2,4-Dinitrotoluene	ND		5	1	04/17/09 15:26	GY	4992373
2,6-Dinitrotoluene	ND		5	1	04/17/09 15:26	GY	4992373
2-Chloronaphthalene	ND		5	1	04/17/09 15:26	GY	4992373
2-Chlorophenol	ND		5	1	04/17/09 15:26	GY	4992373
2-Methylnaphthalene	ND		5	1	04/17/09 15:26	GY	4992373
2-Nitroaniline	ND		25	1	04/17/09 15:26	GY	4992373
2-Nitrophenol	ND		5	1	04/17/09 15:26	GY	4992373
3,3'-Dichlorobenzidine	ND		10	1	04/17/09 15:26	GY	4992373
3-Nitroaniline	ND		25	1	04/17/09 15:26	GY	4992373
4,6-Dinitro-2-methylphenol	ND		25	1	04/17/09 15:26	GY	4992373
4-Bromophenyl phenyl ether	ND		5	1	04/17/09 15:26	GY	4992373
4-Chloro-3-methylphenol	ND		5	1	04/17/09 15:26	GY	4992373
4-Chloroaniline	ND		5	1	04/17/09 15:26	GY	4992373
4-Chlorophenyl phenyl ether	ND		5	1	04/17/09 15:26	GY	4992373
4-Nitroaniline	ND		25	1	04/17/09 15:26	GY	4992373
4-Nitrophenol	ND		25	1	04/17/09 15:26	GY	4992373
Acenaphthene	ND		5	1	04/17/09 15:26	GY	4992373
Acenaphthylene	ND		5	1	04/17/09 15:26	GY	4992373
Aniline	ND		5	1	04/17/09 15:26	GY	4992373
Anthracene	ND		5	1	04/17/09 15:26	GY	4992373
Benz(a)anthracene	ND		5	1	04/17/09 15:26	GY	4992373
Benzo(a)pyrene	ND		5	1	04/17/09 15:26	GY	4992373
Benzo(b)fluoranthene	ND		5	1	04/17/09 15:26	GY	4992373
Benzo(g,h,i)perylene	ND		5	1	04/17/09 15:26	GY	4992373
Benzo(k)fluoranthene	ND		5	1	04/17/09 15:26	GY	4992373
Benzoic acid	ND		25	1	04/17/09 15:26	GY	4992373
Benzyl alcohol	ND		5	1	04/17/09 15:26	GY	4992373
Bis(2-chloroethoxy)methane	ND		5	1	04/17/09 15:26	GY	4992373
Bis(2-chloroethyl)ether	ND		5	1	04/17/09 15:26	GY	4992373

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MI - Matrix Interference

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8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-3 **Collected:** 04/08/2009 8:12 **SPL Sample ID:** 09040278-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		5	1	04/17/09 15:26	GY	4992373
Bis(2-ethylhexyl)phthalate	ND		5	1	04/17/09 15:26	GY	4992373
Butyl benzyl phthalate	ND		5	1	04/17/09 15:26	GY	4992373
Carbazole	ND		5	1	04/17/09 15:26	GY	4992373
Chrysene	ND		5	1	04/17/09 15:26	GY	4992373
Dibenz(a,h)anthracene	ND		5	1	04/17/09 15:26	GY	4992373
Dibenzofuran	ND		5	1	04/17/09 15:26	GY	4992373
Diethyl phthalate	ND		5	1	04/17/09 15:26	GY	4992373
Dimethyl phthalate	ND		5	1	04/17/09 15:26	GY	4992373
Di-n-butyl phthalate	ND		5	1	04/17/09 15:26	GY	4992373
Di-n-octyl phthalate	ND		5	1	04/17/09 15:26	GY	4992373
Fluoranthene	ND		5	1	04/17/09 15:26	GY	4992373
Fluorene	ND		5	1	04/17/09 15:26	GY	4992373
Hexachlorobenzene	ND		5	1	04/17/09 15:26	GY	4992373
Hexachlorobutadiene	ND		5	1	04/17/09 15:26	GY	4992373
Hexachlorocyclopentadiene	ND		5	1	04/17/09 15:26	GY	4992373
Hexachloroethane	ND		5	1	04/17/09 15:26	GY	4992373
Indeno(1,2,3-cd)pyrene	ND		5	1	04/17/09 15:26	GY	4992373
Isophorone	ND		5	1	04/17/09 15:26	GY	4992373
Naphthalene	ND		5	1	04/17/09 15:26	GY	4992373
Nitrobenzene	ND		5	1	04/17/09 15:26	GY	4992373
N-Nitrosodi-n-propylamine	ND		5	1	04/17/09 15:26	GY	4992373
N-Nitrosodiphenylamine	ND		5	1	04/17/09 15:26	GY	4992373
Pentachlorophenol	ND		25	1	04/17/09 15:26	GY	4992373
Phenanthrene	ND		5	1	04/17/09 15:26	GY	4992373
Phenol	ND		5	1	04/17/09 15:26	GY	4992373
Pyrene	ND		5	1	04/17/09 15:26	GY	4992373
Pyridine	ND		5	1	04/17/09 15:26	GY	4992373
2-Methylphenol	ND		5	1	04/17/09 15:26	GY	4992373
3 & 4-Methylphenol	ND		5	1	04/17/09 15:26	GY	4992373
Surr: 2,4,6-Tribromophenol	108		% 10-123	1	04/17/09 15:26	GY	4992373
Surr: 2-Fluorobiphenyl	82.4		% 23-116	1	04/17/09 15:26	GY	4992373
Surr: 2-Fluorophenol	70.1		% 16-110	1	04/17/09 15:26	GY	4992373
Surr: Nitrobenzene-d5	78.8		% 21-114	1	04/17/09 15:26	GY	4992373
Surr: Phenol-d5	50.5		% 10-110	1	04/17/09 15:26	GY	4992373
Surr: Terphenyl-d14	73.2		% 22-141	1	04/17/09 15:26	GY	4992373

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 8:15	N_M	1.00

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Client Sample ID: MW-3 **Collected:** 04/08/2009 8:12 **SPL Sample ID:** 09040278-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,1,1-Trichloroethane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,1,2,2-Tetrachloroethane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,1,2-Trichloroethane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,1-Dichloroethane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,1-Dichloroethene	ND		5	1	04/11/09 22:20	LU_L	4981669
1,1-Dichloropropene	ND		5	1	04/11/09 22:20	LU_L	4981669
1,2,3-Trichlorobenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
1,2,3-Trichloropropane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,2,4-Trichlorobenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
1,2,4-Trimethylbenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
1,2-Dibromo-3-chloropropane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,2-Dibromoethane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,2-Dichlorobenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
1,2-Dichloroethane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,2-Dichloropropane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,3,5-Trimethylbenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
1,3-Dichlorobenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
1,3-Dichloropropane	ND		5	1	04/11/09 22:20	LU_L	4981669
1,4-Dichlorobenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
2,2-Dichloropropane	ND		5	1	04/11/09 22:20	LU_L	4981669
2-Butanone	ND		20	1	04/11/09 22:20	LU_L	4981669
2-Chloroethyl vinyl ether	ND J		10	1	04/11/09 22:20	LU_L	4981669
2-Chlorotoluene	ND		5	1	04/11/09 22:20	LU_L	4981669
2-Hexanone	ND		10	1	04/11/09 22:20	LU_L	4981669
4-Chlorotoluene	ND		5	1	04/11/09 22:20	LU_L	4981669
4-Isopropyltoluene	ND		5	1	04/11/09 22:20	LU_L	4981669
4-Methyl-2-pentanone	ND		10	1	04/11/09 22:20	LU_L	4981669
Acetone	ND		20	1	04/11/09 22:20	LU_L	4981669
Acrylonitrile	ND		10	1	04/11/09 22:20	LU_L	4981669
Benzene	ND		5	1	04/11/09 22:20	LU_L	4981669
Bromobenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
Bromochloromethane	ND		5	1	04/11/09 22:20	LU_L	4981669
Bromodichloromethane	ND		5	1	04/11/09 22:20	LU_L	4981669
Bromoform	ND		5	1	04/11/09 22:20	LU_L	4981669
Bromomethane	ND		10	1	04/11/09 22:20	LU_L	4981669
Carbon disulfide	ND		5	1	04/11/09 22:20	LU_L	4981669
Carbon tetrachloride	ND		5	1	04/11/09 22:20	LU_L	4981669
Chlorobenzene	ND		5	1	04/11/09 22:20	LU_L	4981669

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Client Sample ID: MW-3 **Collected:** 04/08/2009 8:12 **SPL Sample ID:** 09040278-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/11/09 22:20	LU_L	4981669
Chloroform	ND		5	1	04/11/09 22:20	LU_L	4981669
Chloromethane	ND		10	1	04/11/09 22:20	LU_L	4981669
Dibromochloromethane	ND		5	1	04/11/09 22:20	LU_L	4981669
Dibromomethane	ND		5	1	04/11/09 22:20	LU_L	4981669
Dichlorodifluoromethane	ND		10	1	04/11/09 22:20	LU_L	4981669
Ethylbenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
Hexachlorobutadiene	ND		5	1	04/11/09 22:20	LU_L	4981669
Isopropylbenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
Methyl tert-butyl ether	ND		5	1	04/11/09 22:20	LU_L	4981669
Methylene chloride	ND		5	1	04/11/09 22:20	LU_L	4981669
Naphthalene	ND		5	1	04/11/09 22:20	LU_L	4981669
n-Butylbenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
n-Propylbenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
sec-Butylbenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
Styrene	ND		5	1	04/11/09 22:20	LU_L	4981669
tert-Butylbenzene	ND		5	1	04/11/09 22:20	LU_L	4981669
Tetrachloroethene	ND		5	1	04/11/09 22:20	LU_L	4981669
Toluene	ND		5	1	04/11/09 22:20	LU_L	4981669
Trichloroethene	ND		5	1	04/11/09 22:20	LU_L	4981669
Trichlorofluoromethane	ND		5	1	04/11/09 22:20	LU_L	4981669
Vinyl acetate	ND		10	1	04/11/09 22:20	LU_L	4981669
Vinyl chloride	ND		2	1	04/11/09 22:20	LU_L	4981669
cis-1,2-Dichloroethene	ND		5	1	04/11/09 22:20	LU_L	4981669
cis-1,3-Dichloropropene	ND		5	1	04/11/09 22:20	LU_L	4981669
m,p-Xylene	ND		5	1	04/11/09 22:20	LU_L	4981669
o-Xylene	ND		5	1	04/11/09 22:20	LU_L	4981669
trans-1,2-Dichloroethene	ND		5	1	04/11/09 22:20	LU_L	4981669
trans-1,3-Dichloropropene	ND		5	1	04/11/09 22:20	LU_L	4981669
1,2-Dichloroethene (total)	ND		5	1	04/11/09 22:20	LU_L	4981669
Xylenes,Total	ND		5	1	04/11/09 22:20	LU_L	4981669
Surr: 1,2-Dichloroethane-d4	92.0		% 62-130	1	04/11/09 22:20	LU_L	4981669
Surr: 4-Bromofluorobenzene	108		% 70-130	1	04/11/09 22:20	LU_L	4981669
Surr: Toluene-d8	96.0		% 74-122	1	04/11/09 22:20	LU_L	4981669

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TB-4-8-09A **Collected:** 04/08/2009 8:32 **SPL Sample ID:** 09040278-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,1,1-Trichloroethane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,1,2,2-Tetrachloroethane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,1,2-Trichloroethane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,1-Dichloroethane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,1-Dichloroethene	ND		5	1	04/11/09 21:23	LU_L	4981667
1,1-Dichloropropene	ND		5	1	04/11/09 21:23	LU_L	4981667
1,2,3-Trichlorobenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
1,2,3-Trichloropropane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,2,4-Trichlorobenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
1,2,4-Trimethylbenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
1,2-Dibromo-3-chloropropane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,2-Dibromoethane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,2-Dichlorobenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
1,2-Dichloroethane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,2-Dichloropropane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,3,5-Trimethylbenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
1,3-Dichlorobenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
1,3-Dichloropropane	ND		5	1	04/11/09 21:23	LU_L	4981667
1,4-Dichlorobenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
2,2-Dichloropropane	ND		5	1	04/11/09 21:23	LU_L	4981667
2-Butanone	ND		20	1	04/11/09 21:23	LU_L	4981667
2-Chloroethyl vinyl ether	ND J		10	1	04/11/09 21:23	LU_L	4981667
2-Chlorotoluene	ND		5	1	04/11/09 21:23	LU_L	4981667
2-Hexanone	ND		10	1	04/11/09 21:23	LU_L	4981667
4-Chlorotoluene	ND		5	1	04/11/09 21:23	LU_L	4981667
4-Isopropyltoluene	ND		5	1	04/11/09 21:23	LU_L	4981667
4-Methyl-2-pentanone	ND		10	1	04/11/09 21:23	LU_L	4981667
Acetone	ND		20	1	04/11/09 21:23	LU_L	4981667
Acrylonitrile	ND		10	1	04/11/09 21:23	LU_L	4981667
Benzene	ND		5	1	04/11/09 21:23	LU_L	4981667
Bromobenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
Bromochloromethane	ND		5	1	04/11/09 21:23	LU_L	4981667
Bromodichloromethane	ND		5	1	04/11/09 21:23	LU_L	4981667
Bromoform	ND		5	1	04/11/09 21:23	LU_L	4981667
Bromomethane	ND		10	1	04/11/09 21:23	LU_L	4981667
Carbon disulfide	ND		5	1	04/11/09 21:23	LU_L	4981667
Carbon tetrachloride	ND		5	1	04/11/09 21:23	LU_L	4981667
Chlorobenzene	ND		5	1	04/11/09 21:23	LU_L	4981667

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TB-4-8-09A **Collected:** 04/08/2009 8:32 **SPL Sample ID:** 09040278-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/11/09 21:23	LU_L	4981667
Chloroform	ND		5	1	04/11/09 21:23	LU_L	4981667
Chloromethane	ND		10	1	04/11/09 21:23	LU_L	4981667
Dibromochloromethane	ND		5	1	04/11/09 21:23	LU_L	4981667
Dibromomethane	ND		5	1	04/11/09 21:23	LU_L	4981667
Dichlorodifluoromethane	ND		10	1	04/11/09 21:23	LU_L	4981667
Ethylbenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
Hexachlorobutadiene	ND		5	1	04/11/09 21:23	LU_L	4981667
Isopropylbenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
Methyl tert-butyl ether	ND		5	1	04/11/09 21:23	LU_L	4981667
Methylene chloride	ND		5	1	04/11/09 21:23	LU_L	4981667
Naphthalene	ND		5	1	04/11/09 21:23	LU_L	4981667
n-Butylbenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
n-Propylbenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
sec-Butylbenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
Styrene	ND		5	1	04/11/09 21:23	LU_L	4981667
tert-Butylbenzene	ND		5	1	04/11/09 21:23	LU_L	4981667
Tetrachloroethene	ND		5	1	04/11/09 21:23	LU_L	4981667
Toluene	ND		5	1	04/11/09 21:23	LU_L	4981667
Trichloroethene	ND		5	1	04/11/09 21:23	LU_L	4981667
Trichlorofluoromethane	ND		5	1	04/11/09 21:23	LU_L	4981667
Vinyl acetate	ND		10	1	04/11/09 21:23	LU_L	4981667
Vinyl chloride	ND		2	1	04/11/09 21:23	LU_L	4981667
cis-1,2-Dichloroethene	ND		5	1	04/11/09 21:23	LU_L	4981667
cis-1,3-Dichloropropene	ND		5	1	04/11/09 21:23	LU_L	4981667
m,p-Xylene	ND		5	1	04/11/09 21:23	LU_L	4981667
o-Xylene	ND		5	1	04/11/09 21:23	LU_L	4981667
trans-1,2-Dichloroethene	ND		5	1	04/11/09 21:23	LU_L	4981667
trans-1,3-Dichloropropene	ND		5	1	04/11/09 21:23	LU_L	4981667
1,2-Dichloroethene (total)	ND		5	1	04/11/09 21:23	LU_L	4981667
Xylenes,Total	ND		5	1	04/11/09 21:23	LU_L	4981667
Surr: 1,2-Dichloroethane-d4	96.0		% 62-130	1	04/11/09 21:23	LU_L	4981667
Surr: 4-Bromofluorobenzene	104		% 70-130	1	04/11/09 21:23	LU_L	4981667
Surr: Toluene-d8	98.0		% 74-122	1	04/11/09 21:23	LU_L	4981667

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: FB-4-8-09A **Collected:** 04/08/2009 9:03 **SPL Sample ID:** 09040278-03

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,1,1-Trichloroethane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,1,2,2-Tetrachloroethane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,1,2-Trichloroethane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,1-Dichloroethane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,1-Dichloroethene	ND		5	1	04/11/09 21:52	LU_L	4981668
1,1-Dichloropropene	ND		5	1	04/11/09 21:52	LU_L	4981668
1,2,3-Trichlorobenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
1,2,3-Trichloropropane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,2,4-Trichlorobenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
1,2,4-Trimethylbenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
1,2-Dibromo-3-chloropropane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,2-Dibromoethane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,2-Dichlorobenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
1,2-Dichloroethane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,2-Dichloropropane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,3,5-Trimethylbenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
1,3-Dichlorobenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
1,3-Dichloropropane	ND		5	1	04/11/09 21:52	LU_L	4981668
1,4-Dichlorobenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
2,2-Dichloropropane	ND		5	1	04/11/09 21:52	LU_L	4981668
2-Butanone	ND		20	1	04/11/09 21:52	LU_L	4981668
2-Chloroethyl vinyl ether	ND	J	10	1	04/11/09 21:52	LU_L	4981668
2-Chlorotoluene	ND		5	1	04/11/09 21:52	LU_L	4981668
2-Hexanone	ND		10	1	04/11/09 21:52	LU_L	4981668
4-Chlorotoluene	ND		5	1	04/11/09 21:52	LU_L	4981668
4-Isopropyltoluene	ND		5	1	04/11/09 21:52	LU_L	4981668
4-Methyl-2-pentanone	ND		10	1	04/11/09 21:52	LU_L	4981668
Acetone	ND		20	1	04/11/09 21:52	LU_L	4981668
Acrylonitrile	ND		10	1	04/11/09 21:52	LU_L	4981668
Benzene	ND		5	1	04/11/09 21:52	LU_L	4981668
Bromobenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
Bromochloromethane	ND		5	1	04/11/09 21:52	LU_L	4981668
Bromodichloromethane	ND		5	1	04/11/09 21:52	LU_L	4981668
Bromoform	ND		5	1	04/11/09 21:52	LU_L	4981668
Bromomethane	ND		10	1	04/11/09 21:52	LU_L	4981668
Carbon disulfide	ND		5	1	04/11/09 21:52	LU_L	4981668
Carbon tetrachloride	ND		5	1	04/11/09 21:52	LU_L	4981668
Chlorobenzene	ND		5	1	04/11/09 21:52	LU_L	4981668

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: FB-4-8-09A **Collected:** 04/08/2009 9:03 **SPL Sample ID:** 09040278-03

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/11/09 21:52	LU_L	4981668
Chloroform	ND		5	1	04/11/09 21:52	LU_L	4981668
Chloromethane	ND		10	1	04/11/09 21:52	LU_L	4981668
Dibromochloromethane	ND		5	1	04/11/09 21:52	LU_L	4981668
Dibromomethane	ND		5	1	04/11/09 21:52	LU_L	4981668
Dichlorodifluoromethane	ND		10	1	04/11/09 21:52	LU_L	4981668
Ethylbenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
Hexachlorobutadiene	ND		5	1	04/11/09 21:52	LU_L	4981668
Isopropylbenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
Methyl tert-butyl ether	ND		5	1	04/11/09 21:52	LU_L	4981668
Methylene chloride	ND		5	1	04/11/09 21:52	LU_L	4981668
Naphthalene	ND		5	1	04/11/09 21:52	LU_L	4981668
n-Butylbenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
n-Propylbenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
sec-Butylbenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
Styrene	ND		5	1	04/11/09 21:52	LU_L	4981668
tert-Butylbenzene	ND		5	1	04/11/09 21:52	LU_L	4981668
Tetrachloroethene	ND		5	1	04/11/09 21:52	LU_L	4981668
Toluene	ND		5	1	04/11/09 21:52	LU_L	4981668
Trichloroethene	ND		5	1	04/11/09 21:52	LU_L	4981668
Trichlorofluoromethane	ND		5	1	04/11/09 21:52	LU_L	4981668
Vinyl acetate	ND		10	1	04/11/09 21:52	LU_L	4981668
Vinyl chloride	ND		2	1	04/11/09 21:52	LU_L	4981668
cis-1,2-Dichloroethene	ND		5	1	04/11/09 21:52	LU_L	4981668
cis-1,3-Dichloropropene	ND		5	1	04/11/09 21:52	LU_L	4981668
m,p-Xylene	ND		5	1	04/11/09 21:52	LU_L	4981668
o-Xylene	ND		5	1	04/11/09 21:52	LU_L	4981668
trans-1,2-Dichloroethene	ND		5	1	04/11/09 21:52	LU_L	4981668
trans-1,3-Dichloropropene	ND		5	1	04/11/09 21:52	LU_L	4981668
1,2-Dichloroethene (total)	ND		5	1	04/11/09 21:52	LU_L	4981668
Xylenes,Total	ND		5	1	04/11/09 21:52	LU_L	4981668
Surr: 1,2-Dichloroethane-d4	98.0		% 62-130	1	04/11/09 21:52	LU_L	4981668
Surr: 4-Bromofluorobenzene	106		% 70-130	1	04/11/09 21:52	LU_L	4981668
Surr: Toluene-d8	96.0		% 74-122	1	04/11/09 21:52	LU_L	4981668

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Hydrocarbons
Method: SW8015B
WorkOrder: 09040278
Lab Batch ID: 89427

Method Blank

RunID: HP_V_090416B-4987505 Units: mg/L
Analysis Date: 04/14/2009 23:43 Analyst: NW
Preparation Date: 04/13/2009 14:10 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040278-01C	MW-3

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.10
Mineral Spirits Range Organics	ND	0.10
Surr: n-Pentacosane	51.2	20-150

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HP_V_090416B-4987506 Units: mg/L
Analysis Date: 04/15/2009 0:03 Analyst: NW
Preparation Date: 04/13/2009 14:10 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics	1.00	0.895	89.5	1.00	0.880	88.0	1.7	40	21	150
Surr: n-Pentacosane	0.0500	0.0494	98.8	0.0500	0.0485	97.0	1.8	30	20	150

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Headspace Gas Analysis
Method: RSK147

WorkOrder: 09040278
Lab Batch ID: R271083

Method Blank

RunID: VARC_090424A-4996391 Units: mg/L
Analysis Date: 04/24/2009 14:37 Analyst: V_L

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040278-01E	MW-3

Analyte	Result	Rep Limit
Methane	ND	0.0012

Sample Duplicate

Original Sample: 09040488-02
RunID: VARC_090424A-4996394 Units: mg/L
Analysis Date: 04/24/2009 15:14 Analyst: V_L

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Methane	0.0037	0.00379	2.8	50

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Gasoline Range Organics
Method: SW8015B
WorkOrder: 09040278
Lab Batch ID: R270269

Method Blank

RunID: HP_P_090413A-4984662 Units: mg/L
Analysis Date: 04/13/2009 5:20 Analyst: CLJ

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040278-01D	MW-3

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	91.5	60-155
Surr: 4-Bromofluorobenzene	104.0	50-158

Laboratory Control Sample (LCS)

RunID: HP_P_090413A-4984660 Units: mg/L
Analysis Date: 04/13/2009 4:22 Analyst: CLJ

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	0.859	85.9	42	136
Surr: 1,4-Difluorobenzene	0.100	0.0949	94.9	60	155
Surr: 4-Bromofluorobenzene	0.100	0.108	108	50	158

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040343-01
RunID: HP_P_090413A-4984664 Units: mg/L
Analysis Date: 04/13/2009 10:44 Analyst: CLJ

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	1	0.852	85.2	1	0.868	86.8	1.92	36	22	174
Surr: 1,4-Difluorobenzene	ND	0.1	0.0922	92.2	0.1	0.0932	93.2	1.08	30	60	155
Surr: 4-Bromofluorobenzene	ND	0.1	0.105	105	0.1	0.107	107	1.41	30	50	158

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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HOUSTON LABORATORY
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09040278
Lab Batch ID: 89412

Method Blank

RunID: H_090417E-4992370
Units: ug/L
Analysis Date: 04/17/2009 9:40
Analyst: GY
Preparation Date: 04/13/2009 8:15
Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040278-01B	MW-3

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Diphenylhydrazine	ND	10
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,4,5-Trichlorophenol	ND	10
2,4,6-Trichlorophenol	ND	5.0
2,4-Dichlorophenol	ND	5.0
2,4-Dimethylphenol	ND	5.0
2,4-Dinitrophenol	ND	25
2,4-Dinitrotoluene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Chlorophenol	ND	5.0
2-Methylnaphthalene	ND	5.0
2-Nitroaniline	ND	25
2-Nitrophenol	ND	5.0
3,3'-Dichlorobenzidine	ND	10
3-Nitroaniline	ND	25
4,6-Dinitro-2-methylphenol	ND	25
4-Bromophenyl phenyl ether	ND	5.0
4-Chloro-3-methylphenol	ND	5.0
4-Chloroaniline	ND	5.0
4-Chlorophenyl phenyl ether	ND	5.0
4-Nitroaniline	ND	25
4-Nitrophenol	ND	25
Acenaphthene	ND	5.0
Acenaphthylene	ND	5.0
Aniline	ND	5.0
Anthracene	ND	5.0
Benz(a)anthracene	ND	5.0
Benzo(a)pyrene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzoic acid	ND	25
Benzyl alcohol	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Butyl benzyl phthalate	ND	5.0
Carbazole	ND	5.0
Chrysene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Dibenzofuran	ND	5.0

Qualifiers:

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E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09040278
Lab Batch ID: 89412

Method Blank

RunID: H_090417E-4992370
Units: ug/L
Analysis Date: 04/17/2009 9:40
Analyst: GY
Preparation Date: 04/13/2009 8:15
Prep By: N_M Method SW3510C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	5.0
Dimethyl phthalate	ND	5.0
Di-n-butyl phthalate	ND	5.0
Di-n-octyl phthalate	ND	5.0
Fluoranthene	ND	5.0
Fluorene	ND	5.0
Hexachlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
Hexachloroethane	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Isophorone	ND	5.0
Naphthalene	ND	5.0
Nitrobenzene	ND	5.0
N-Nitrosodi-n-propylamine	ND	5.0
N-Nitrosodiphenylamine	ND	5.0
Pentachlorophenol	ND	25
Phenanthrene	ND	5.0
Phenol	ND	5.0
Pyrene	ND	5.0
Pyridine	ND	5.0
2-Methylphenol	ND	5.0
3 & 4-Methylphenol	ND	5.0
Surr: 2,4,6-Tribromophenol	95.2	10-123
Surr: 2-Fluorobiphenyl	72.6	23-116
Surr: 2-Fluorophenol	76.1	16-110
Surr: Nitrobenzene-d5	68.4	21-114
Surr: Phenol-d5	62.5	10-110
Surr: Terphenyl-d14	68.4	22-141

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371
Units: ug/L
Analysis Date: 04/17/2009 10:42
Analyst: GY
Preparation Date: 04/13/2009 8:15
Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2,4-Trichlorobenzene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	39	21	120
1,2-Dichlorobenzene	25.0	15.4	61.6	25.0	16.7	66.8	8.1	50	20	150

Qualifiers:

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E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040278
Method: SW8270C **Lab Batch ID:** 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Diphenylhydrazine	25.0	16.5	66.0	25.0	17.6	70.4	6.5	50	10	251
1,3-Dichlorobenzene	25.0	15.4	61.6	25.0	16.5	66.0	6.9	50	20	150
1,4-Dichlorobenzene	25.0	15.3	61.2	25.0	16.2	64.8	5.7	45	20	150
2,4,5-Trichlorophenol	25.0	14.9	59.6	25.0	15.4	61.6	3.3	50	30	150
2,4,6-Trichlorophenol	25.0	15.2	60.8	25.0	16.0	64.0	5.1	50	30	150
2,4-Dichlorophenol	25.0	14.5	58.0	25.0	15.9	63.6	9.2	50	30	150
2,4-Dimethylphenol	25.0	15.4	61.6	25.0	16.0	64.0	3.8	50	32	140
2,4-Dinitrophenol	25.0	11.9	47.6	25.0	12.8	51.2	7.3	50	10	160
2,4-Dinitrotoluene	25.0	16.1	64.4	25.0	16.3	65.2	1.2	50	30	150
2,6-Dinitrotoluene	25.0	15.8	63.2	25.0	15.7	62.8	0.6	50	30	150
2-Chloronaphthalene	25.0	15.8	63.2	25.0	16.5	66.0	4.3	50	30	150
2-Chlorophenol	25.0	15.4	61.6	25.0	15.9	63.6	3.2	40	23	134
2-Methylnaphthalene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	50	20	170
2-Nitroaniline	25.0	14.8	59.2	25.0	15.9	63.6	7.2	50	20	160
2-Nitrophenol	25.0	14.9	59.6	25.0	15.8	63.2	5.9	50	29	182
3,3'-Dichlorobenzidine	25.0	13.3	53.2	25.0	13.7	54.8	3.0	50	30	200
3-Nitroaniline	25.0	14.4	57.6	25.0	14.8	59.2	2.7	50	20	160
4,6-Dinitro-2-methylphenol	25.0	13.7	54.8	25.0	14.2	56.8	3.6	50	10	160
4-Bromophenyl phenyl ether	25.0	15.6	62.4	25.0	15.8	63.2	1.3	50	30	150
4-Chloro-3-methylphenol	25.0	15.2	60.8	25.0	16.1	64.4	5.8	42	25	160
4-Chloroaniline	25.0	15.5	62.0	25.0	16.2	64.8	4.4	50	20	160
4-Chlorophenyl phenyl ether	25.0	15.7	62.8	25.0	16.3	65.2	3.8	50	25	158
4-Nitroaniline	25.0	13.9	55.6	25.0	14.8	59.2	6.3	50	20	160
4-Nitrophenol	25.0	13.0	52.0	25.0	14.8	59.2	12.9	50	10	132
Acenaphthene	25.0	15.3	61.2	25.0	16.3	65.2	6.3	31	30	150
Acenaphthylene	25.0	15.4	61.6	25.0	16.4	65.6	6.3	50	33	250
Aniline	50.0	29.9	59.8	50.0	30.9	61.8	3.3	50	10	135
Anthracene	25.0	15.6	62.4	25.0	16.5	66.0	5.6	50	27	133
Benz(a)anthracene	25.0	15.6	62.4	25.0	16.4	65.6	5.0	50	33	143
Benzo(a)pyrene	25.0	12.2	48.8	25.0	12.7	50.8	4.0	50	17	163
Benzo(b)fluoranthene	25.0	14.9	59.6	25.0	15.2	60.8	2.0	50	24	159
Benzo(g,h,i)perylene	25.0	15.7	62.8	25.0	15.9	63.6	1.3	50	30	160
Benzo(k)fluoranthene	25.0	15.0	60.0	25.0	15.2	60.8	1.3	50	11	162

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040278
Method: SW8270C **Lab Batch ID:** 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzoic acid	25.0	15.7	62.8	25.0	16.0	64.0	1.9	50	10	400
Benzyl alcohol	25.0	14.7	58.8	25.0	16.2	64.8	9.7	50	30	160
Bis(2-chloroethoxy)methane	25.0	15.2	60.8	25.0	15.8	63.2	3.9	50	33	184
Bis(2-chloroethyl)ether	25.0	15.8	63.2	25.0	16.7	66.8	5.5	50	12	158
Bis(2-chloroisopropyl)ether	25.0	15.6	62.4	25.0	16.1	64.4	3.2	50	20	160
Bis(2-ethylhexyl)phthalate	25.0	16.1	64.4	25.0	17.0	68.0	5.4	50	10	158
Butyl benzyl phthalate	25.0	16.3	65.2	25.0	17.0	68.0	4.2	50	30	160
Carbazole	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	30	150
Chrysene	25.0	15.0	60.0	25.0	16.0	64.0	6.5	50	17	168
Dibenz(a,h)anthracene	25.0	15.5	62.0	25.0	15.7	62.8	1.3	50	30	160
Dibenzofuran	25.0	15.7	62.8	25.0	16.4	65.6	4.4	50	30	150
Diethyl phthalate	25.0	16.0	64.0	25.0	17.1	68.4	6.6	50	30	160
Dimethyl phthalate	25.0	15.7	62.8	25.0	16.8	67.2	6.8	50	30	160
Di-n-butyl phthalate	25.0	16.6	66.4	25.0	17.1	68.4	3.0	50	30	160
Di-n-octyl phthalate	25.0	16.2	64.8	25.0	17.0	68.0	4.8	50	20	150
Fluoranthene	25.0	15.9	63.6	25.0	16.3	65.2	2.5	50	26	137
Fluorene	25.0	15.4	61.6	25.0	16.3	65.2	5.7	50	30	150
Hexachlorobenzene	25.0	15.4	61.6	25.0	16.6	66.4	7.5	50	20	150
Hexachlorobutadiene	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	20	140
Hexachlorocyclopentadiene	25.0	17.2	68.8	25.0	19.1	76.4	10.5	50	10	150
Hexachloroethane	25.0	15.0	60.0	25.0	16.3	65.2	8.3	50	14	120
Indeno(1,2,3-cd)pyrene	25.0	16.3	65.2	25.0	17.5	70.0	7.1	50	30	160
Isophorone	25.0	16.2	64.8	25.0	17.3	69.2	6.6	50	21	196
Naphthalene	25.0	15.4	61.6	25.0	16.2	64.8	5.1	50	21	133
Nitrobenzene	25.0	15.3	61.2	25.0	16.0	64.0	4.5	50	20	160
N-Nitrosodi-n-propylamine	25.0	15.6	62.4	25.0	15.4	61.6	1.3	38	30	160
N-Nitrosodiphenylamine	50.0	38.0	76.0	50.0	40.4	80.8	6.1	50	30	150
Pentachlorophenol	25.0	11.5	46.0	25.0	12.8	51.2	10.7	50	14	176
Phenanthrene	25.0	15.3	61.2	25.0	16.1	64.4	5.1	50	10	140
Phenol	25.0	15.2	60.8	25.0	15.8	63.2	3.9	42	40	132
Pyrene	25.0	15.8	63.2	25.0	16.6	66.4	4.9	38	30	150
Pyridine	50.0	27.0	54.0	50.0	29.4	58.8	8.5	50	10	150
2-Methylphenol	25.0	15.7	62.8	25.0	16.2	64.8	3.1	50	30	160

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis:	**Semivolatile Organics by Method 8270C**	**WorkOrder:**	**09040278**
Method:	**SW8270C**	**Lab Batch ID:**	**89412**

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID:	H_090417E-4992371	Units:	ug/L
Analysis Date:	04/17/2009 10:42	Analyst:	GY
Preparation Date:	04/13/2009 8:15	Prep By:	N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
3 & 4-Methylphenol	25.0	16.6	66.4	25.0	17.2	68.8	3.6	50	10	160
Surr: 2,4,6-Tribromophenol	75.0	61.1	81.5	75.0	60.8	81.1	0.5	30	10	123
Surr: 2-Fluorobiphenyl	50.0	28.6	57.2	50.0	29.5	59.0	3.1	30	23	116
Surr: 2-Fluorophenol	75.0	50.0	66.7	75.0	50.8	67.7	1.6	30	16	110
Surr: Nitrobenzene-d5	50.0	29.0	58.0	50.0	30.0	60.0	3.4	30	21	114
Surr: Phenol-d5	75.0	43.1	57.5	75.0	44.2	58.9	2.5	30	10	110
Surr: Terphenyl-d14	50.0	28.4	56.8	50.0	28.7	57.4	1.1	30	22	141

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040278
Method: SW8260B **Lab Batch ID:** R270073

Method Blank

RunID: N_090411A-4981661 Units: ug/L
Analysis Date: 04/11/2009 12:58 Analyst: LU_L
Preparation Date: 04/11/2009 12:58 Prep By: Method

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040278-01A	MW-3
09040278-02A	TB-4-8-09A
09040278-03A	FB-4-8-09A

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	20
Acrylonitrile	ND	10
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040278
Lab Batch ID: R270073

Method Blank

RunID: N_090411A-4981661 Units: ug/L
Analysis Date: 04/11/2009 12:58 Analyst: LU_L
Preparation Date: 04/11/2009 12:58 Prep By: Method

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	2.0
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	94.0	62-130
Surr: 4-Bromofluorobenzene	104.0	70-130
Surr: Toluene-d8	96.0	74-122

Laboratory Control Sample (LCS)

RunID: N_090411A-4981660 Units: ug/L
Analysis Date: 04/11/2009 11:50 Analyst: LU_L
Preparation Date: 04/11/2009 11:50 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	25.0	125	71	136
1,1,1-Trichloroethane	20.0	26.0	130	66	132
1,1,2,2-Tetrachloroethane	20.0	25.0	125	55	139
1,1,2-Trichloroethane	20.0	25.0	125	70	130
1,1-Dichloroethane	20.0	22.0	110	67	131

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040278
Lab Batch ID: R270073

Laboratory Control Sample (LCS)

RunID: N_090411A-4981660
Analysis Date: 04/11/2009 11:50
Preparation Date: 04/11/2009 11:50
Units: ug/L
Analyst: LU_L
Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	23.0	115	71	146
1,1-Dichloropropene	20.0	25.0	125	59	138
1,2,3-Trichlorobenzene	20.0	21.0	105	37	155
1,2,3-Trichloropropane	20.0	26.0	130	70	145
1,2,4-Trichlorobenzene	20.0	23.0	115	39	133
1,2,4-Trimethylbenzene	20.0	22.0	110	53	147
1,2-Dibromo-3-chloropropane	20.0	24.0	120	43	137
1,2-Dibromoethane	20.0	25.0	125	63	126
1,2-Dichlorobenzene	20.0	23.0	115	70	130
1,2-Dichloroethane	20.0	24.0	120	64	150
1,2-Dichloropropane	20.0	24.0	120	76	124
1,3,5-Trimethylbenzene	20.0	23.0	115	57	146
1,3-Dichlorobenzene	20.0	22.0	110	72	134
1,3-Dichloropropane	20.0	24.0	120	78	130
1,4-Dichlorobenzene	20.0	22.0	110	70	130
2,2-Dichloropropane	20.0	26.0	130	45	156
2-Butanone	20.0	30.0	150	20	235
2-Chloroethyl vinyl ether	20.0	22.0	110	13	179
2-Chlorotoluene	20.0	24.0	120	64	122
2-Hexanone	20.0	31.0	155	34	182
4-Chlorotoluene	20.0	23.0	115	64	142
4-Isopropyltoluene	20.0	22.0	110	60	134
4-Methyl-2-pentanone	20.0	27.0	135	11	145
Acetone	20.0	34.0	170	13	386
Acrylonitrile	20.0	25.0	125	43	194
Benzene	20.0	24.0	120	76	126
Bromobenzene	20.0	22.0	110	70	130
Bromochloromethane	20.0	25.0	125	63	131
Bromodichloromethane	20.0	24.0	120	77	138
Bromoform	20.0	25.0	125	55	129
Bromomethane	20.0	20.0	100	58	148
Carbon disulfide	20.0	22.0	110	46	146
Carbon tetrachloride	20.0	27.0	135	66	137
Chlorobenzene	20.0	24.0	120	67	136

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040278
Lab Batch ID: R270073

Laboratory Control Sample (LCS)

RunID: N_090411A-4981660 Units: ug/L
Analysis Date: 04/11/2009 11:50 Analyst: LU_L
Preparation Date: 04/11/2009 11:50 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	20.0	100	50	137
Chloroform	20.0	24.0	120	70	135
Chloromethane	20.0	20.0	100	51	140
Dibromochloromethane	20.0	25.0	125	69	127
Dibromomethane	20.0	26.0	130	74	130
Dichlorodifluoromethane	20.0	22.0	110	32	161
Ethylbenzene	20.0	24.0	120	67	122
Hexachlorobutadiene	20.0	26.0	130	43	144
Isopropylbenzene	20.0	22.0	110	60	135
Methyl tert-butyl ether	40.0	46.0	115	48	160
Methylene chloride	20.0	22.0	110	52	143
Naphthalene	20.0	22.0	110	24	150
n-Butylbenzene	20.0	24.0	120	50	140
n-Propylbenzene	20.0	23.0	115	62	137
sec-Butylbenzene	20.0	23.0	115	66	126
Styrene	20.0	24.0	120	60	139
tert-Butylbenzene	20.0	23.0	115	67	140
Tetrachloroethene	20.0	27.0	135	26	200
Toluene	20.0	24.0	120	70	131
Trichloroethene	20.0	27.0	135	64	137
Trichlorofluoromethane	20.0	24.0	120	46	167
Vinyl acetate	20.0	24.0	120	10	193
Vinyl chloride	20.0	20.0	100	31	147
cis-1,2-Dichloroethene	20.0	24.0	120	70	142
cis-1,3-Dichloropropene	20.0	25.0	125	61	134
m,p-Xylene	40.0	49.0	123	72	150
o-Xylene	20.0	25.0	125	78	141
trans-1,2-Dichloroethene	20.0	23.0	115	67	141
trans-1,3-Dichloropropene	20.0	26.0	130	56	136
1,2-Dichloroethene (total)	40	47	120	73	139
Xylenes,Total	60	74	120	72	150
Surr: 1,2-Dichloroethane-d4	50.0	47	94.0	62	130
Surr: 4-Bromofluorobenzene	50.0	54	108	70	130
Surr: Toluene-d8	50.0	48	96.0	74	122

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040278
Method: SW8260B **Lab Batch ID:** R270073

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040124-02
RunID: N_090411A-4981665 Units: ug/L
Analysis Date: 04/11/2009 18:35 Analyst: LU_L

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	20	20.0	100	20	21.0	105	4.88	20	35	175
1,1,1-Trichloroethane	ND	20	22.0	110	20	24.0	120	8.70	20	35	175
1,1,2,2-Tetrachloroethane	ND	20	23.0	115	20	22.0	110	4.44	20	35	175
1,1,2-Trichloroethane	ND	20	22.0	110	20	22.0	110	0	20	35	175
1,1-Dichloroethane	ND	20	20.0	100	20	21.0	105	4.88	20	35	175
1,1-Dichloroethene	ND	20	20.0	100	20	21.0	105	4.88	22	61	145
1,1-Dichloropropene	ND	20	22.0	110	20	22.0	110	0	20	35	175
1,2,3-Trichlorobenzene	ND	20	10.0	50.0	20	11.0	55.0	9.52	20	27	187
1,2,3-Trichloropropane	ND	20	25.0	125	20	23.0	115	8.33	20	35	175
1,2,4-Trichlorobenzene	ND	20	13.0	65.0	20	13.0	65.0	0	20	34	150
1,2,4-Trimethylbenzene	ND	20	20.0	90.0	20	20.0	90.0	0	20	35	175
1,2-Dibromo-3-chloropropane	ND	20	18.0	90.0	20	18.0	90.0	0	20	15	175
1,2-Dibromoethane	ND	20	23.0	115	20	22.0	110	4.44	20	35	175
1,2-Dichlorobenzene	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
1,2-Dichloroethane	ND	20	22.0	110	20	22.0	110	0	20	35	175
1,2-Dichloropropane	ND	20	21.0	105	20	21.0	105	0	20	35	175
1,3,5-Trimethylbenzene	ND	20	19.0	90.0	20	20.0	95.0	5.13	20	35	175
1,3-Dichlorobenzene	ND	20	19.0	95.0	20	18.0	90.0	5.41	20	35	175
1,3-Dichloropropane	ND	20	22.0	110	20	22.0	110	0	20	35	175
1,4-Dichlorobenzene	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	35	175
2,2-Dichloropropane	ND	20	25.0	125	20	24.0	120	4.08	20	35	175
2-Butanone	ND	20	20.0	100	20	21.0	105	4.88	20	10	230
2-Chloroethyl vinyl ether	ND	20	0	0 *	20	0	0 *	0	20	10	250
2-Chlorotoluene	ND	20	20.0	100	20	20.0	100	0	20	31	175
2-Hexanone	ND	20	27.0	135	20	26.0	130	3.77	20	10	250
4-Chlorotoluene	ND	20	19.0	95.0	20	19.0	95.0	0	20	31	175
4-Isopropyltoluene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
4-Methyl-2-pentanone	ND	20	26.0	130	20	25.0	125	3.92	20	10	175
Acetone	ND	20	20.0	100	20	21.0	105	4.88	20	10	400
Acrylonitrile	ND	20	22.0	110	20	22.0	110	0	20	15	250

Qualifiers:
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040278
Method: SW8260B **Lab Batch ID:** R270073

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040124-02
RunID: N_090411A-4981665 Units: ug/L
Analysis Date: 04/11/2009 18:35 Analyst: LU_L

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	21.0	105	20	22.0	110	4.65	22	76	127
Bromobenzene	ND	20	20.0	100	20	19.0	95.0	5.13	20	35	175
Bromochloromethane	ND	20	23.0	115	20	21.0	105	9.09	20	35	175
Bromodichloromethane	ND	20	21.0	105	20	21.0	105	0	20	35	175
Bromoform	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
Bromomethane	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
Carbon disulfide	ND	20	19.0	95.0	20	20.0	100	5.13	20	30	225
Carbon tetrachloride	ND	20	23.0	115	20	23.0	115	0	20	35	175
Chlorobenzene	ND	20	21.0	105	20	20.0	100	4.88	21	70	130
Chloroethane	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	35	175
Chloroform	ND	20	23.0	115	20	21.0	105	9.09	20	35	175
Chloromethane	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
Dibromochloromethane	ND	20	20.0	100	20	19.0	95.0	5.13	20	35	175
Dibromomethane	ND	20	22.0	110	20	24.0	120	8.70	20	35	175
Dichlorodifluoromethane	ND	20	19.0	95.0	20	20.0	100	5.13	20	35	175
Ethylbenzene	ND	20	21.0	105	20	21.0	105	0	20	35	175
Hexachlorobutadiene	ND	20	11.0	55.0	20	10.0	50.0	9.52	20	43	144
Isopropylbenzene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
Methyl tert-butyl ether	70.0	40	110	100	40	110	100	0	20	35	175
Methylene chloride	ND	20	19.0	95.0	20	20.0	100	5.13	20	35	175
Naphthalene	ND	20	14.0	70.0	20	14.0	70.0	0	20	20	210
n-Butylbenzene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
n-Propylbenzene	ND	20	19.0	90.0	20	20.0	95.0	5.13	20	35	175
sec-Butylbenzene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
Styrene	ND	20	20.0	100	20	20.0	100	0	20	35	175
tert-Butylbenzene	ND	20	18.0	85.0	20	18.0	85.0	0	20	35	175
Tetrachloroethene	ND	20	22.0	110	20	22.0	110	0	20	30	250
Toluene	ND	20	21.0	105	20	21.0	105	0	24	70	131
Trichloroethene	ND	20	23.0	115	20	23.0	115	0	21	60	140
Trichlorofluoromethane	ND	20	21.0	105	20	22.0	110	4.65	20	17	250
Vinyl acetate	ND	20	20.0	100	20	20.0	100	0	20	10	250
Vinyl chloride	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	35	175

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040278
Method: SW8260B **Lab Batch ID:** R270073

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040124-02
RunID: N_090411A-4981665 Units: ug/L
Analysis Date: 04/11/2009 18:35 Analyst: LU_L

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	20	22.0	110	20	21.0	105	4.65	20	35	175
cis-1,3-Dichloropropene	ND	20	20.0	100	20	21.0	105	4.88	20	35	175
m,p-Xylene	ND	40	42.0	100	40	42.0	100	0	20	35	175
o-Xylene	ND	20	23.0	105	20	23.0	105	0	20	35	175
trans-1,2-Dichloroethene	ND	20	20.0	100	20	20.0	100	0	20	35	175
trans-1,3-Dichloropropene	ND	20	20.0	100	20	20.0	100	0	20	35	175
1,2-Dichloroethene (total)	ND	40	42	100	40	41	100	2.4	20	35	175
Xylenes,Total	ND	60	65	100	60	65	100	0	20	35	175
Surr: 1,2-Dichloroethane-d4	ND	50	47	94.0	50	48.0	96.0	2.11	30	62	130
Surr: 4-Bromofluorobenzene	ND	50	52	104	50	52.0	104	0	30	70	130
Surr: Toluene-d8	ND	50	48	96.0	50	48.0	96.0	0	30	74	122

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Alkalinity (as CaCO3), Total **WorkOrder:** 09040278
Method: E310.1 **Lab Batch ID:** R270144

Method Blank

RunID: WET_090413F-4982657 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040278-01F	MW-3

Analyte	Result	Rep Limit
Alkalinity, Total (As CaCO3)	ND	2.0

Laboratory Control Sample (LCS)

RunID: WET_090413F-4982659 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Total (As CaCO3)	38.70	39.00	100.8	90	110

Sample Duplicate

Original Sample: 09040278-01
RunID: WET_090413F-4982660 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Total (As CaCO3)	174	175	0.573	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Ion Chromatography **WorkOrder:** 09040278
Method: E300.0 **Lab Batch ID:** R270277A

Method Blank

RunID: IC2_090409A-4984862 Units: mg/L
Analysis Date: 04/09/2009 12:18 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040278-01F	MW-3

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090409A-4984863 Units: mg/L
Analysis Date: 04/09/2009 12:36 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10.00	9.147	91.47	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040169-02
RunID: IC2_090409A-4984879 Units: mg/L
Analysis Date: 04/09/2009 18:26 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	10	10.10	101.0	10	10.09	100.9	0.06932	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 09040278
Lab Batch ID: R270297

Method Blank

RunID: IC2_090414D-4985092 Units: mg/L
Analysis Date: 04/14/2009 10:38 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040278-01F	MW-3

Analyte	Result	Rep Limit
Chloride	ND	0.50
Sulfate	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090414D-4985093 Units: mg/L
Analysis Date: 04/14/2009 10:55 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	10.00	10.52	105.2	85	115
Sulfate	10.00	10.57	105.7	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040254-01
RunID: IC2_090414D-4985097 Units: mg/L
Analysis Date: 04/14/2009 12:05 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	ND	10	10.68	106.8	10	10.66	106.6	0.2155	20	80	120
Sulfate	ND	10	11.07	110.7	10	10.07	100.7	9.423	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**09040278**	Received By:	**BF**
Date and Time Received:	**4/9/2009 10:00:00 AM**	Carrier name:	**FedEx**
Temperature:	**2.0°C**	Chilled by:	**Water Ice**

1. **Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐	
2. **Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐	
3. **Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑	
4. **Chain of custody present?**	Yes ☑	No ☐		
5. **Chain of custody signed when relinquished and received?**	Yes ☑	No ☐		
6. **Chain of custody agrees with sample labels?** 1 Received 3 vials w/HCL for CH4 Methane but not written on chain, placed on hold.	Yes ☐	No ☑		
7. **Samples in proper container/bottle?**	Yes ☑	No ☐		
8. **Sample containers intact?**	Yes ☑	No ☐		
9. **Sufficient sample volume for indicated test?**	Yes ☑	No ☐		
10. **All samples received within holding time?**	Yes ☑	No ☐		
11. **Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐		
12. **Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐	
13. **Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☐	Not Applicable ☑	

***VOA Preservation Checked After Sample Analysis**

SPL Representative: Rodriguez, Alisha C. **Contact Date & Time:** 4/9/2009 2:53:00 PM

Client Name Contacted: Rick Rexroad w/Brown & Caldwell

Non Conformance Issues:

Client Instructions: Client emailed back at 13:31 on Monday 04/13/09 requesting that the extra vials be analyzed for Methane only

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No. 09040278 — 322329 — page 1 of 1

Client Name: Brown and Caldwell
Address: 1415 Louisiana # 2500
City: Houston State: TX Zip: 77002
Phone/Fax: 713-759-0999 / 713-308-3886
Client Contact: Rick Rexroad Email: RRexroad@Browncald.com
Project Name/No.: BJ Services 128125
Site Name: FracMaster
Site Location: Hobbs, NM
Invoice To: RRexroad Ph: 713-646-1129

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: VOCs (8260)	SVOCs (8270)	TPH-DRO/M (8015)	Chloride (300.0)	Alkalinity/HCO3 Ba
MW-3	4/8/09	0812		X	W	VAP	40ml	Lab	14	X	X	X	X	X
TB-4-8-09A	↓	0832		X	W	V	40	Lab	2	X				
FB-4-8-09A	↓	0903		X	W	V	40	Lab	3	X				

RUSH

Client/Consultant Remarks:

Laboratory remarks:

Intact? Y N
Ice? Y N
Temp: 2.0c

Requested TAT
- 1 Business Day
- 2 Business Days
- 3 Business Days
- Other
- Contract
- Standard

Rush TAT requires prior notice

Special Reporting Requirements Results: Fax Email PDF
Standard QC Level 3 QC Level 4 QC TX TRRP LA RECAP

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: RRexroad	date 4/8/09	time 10 10	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 4/8/09	time 1000	6. Received by Laboratory:

8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09040323

Report To:		Project Name:	Fracmaster BJ Service,#128125
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	4/27/2009
ph: (713) 759-0999	fax: (713) 308-3886		

This Report Contains A Total Of 32 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

4/27/2009

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09040323

Report To:		Project Name:	Fracmaster BJ Service,#128125
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-			
ph: (713) 759-0999	fax: (713) 308-3886	Date Reported:	4/27/2009

For Volatile Organics analysis (8260B), the results for 2-chloroethyl vinyl ether are estimated due to sample preservation. The result for this compound is reported as "ND J" for all samples in the report.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID:89427 for the Semivolatile Hydrocarbons analysis by Method 8015B. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID:89412 for the Semivolatile Organics analysis by SW846 Method 8270C. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs. Prep Comments for PR3510_DRO, Sample 09040323-01C: Unpreserved bottle

Agnes V. Vicknair

4/27/2009

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09040323

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: Fracmaster BJ Service,#128125
Site: Hobbs NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 4/27/2009

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-5	09040323-01	Water	4/9/2009 8:45:00 AM	4/9/2009 10:00:00 AM	322332	☐
TB-4-9-09	09040323-02	Water	4/9/2009 9:25:00 AM	4/9/2009 10:00:00 AM	322332	☐
FB-4-9-09	09040323-03	Water	4/9/2009 9:31:00 AM	4/9/2009 10:00:00 AM	322332	☐

Agnes V. Vicknair
Project Manager

4/27/2009
Date

Kesavalu M. Bagawandoss
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-5 **Collected:** 04/09/2009 8:45 **SPL Sample ID:** 09040323-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
ALKALINITY (AS CACO3), TOTAL				**MCL**	**E310.1**	**Units: mg/L**		
Alkalinity, Total (As CaCO3)	195		2		1	04/13/09 11:20	PAC	4982664
GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND		0.1		1	04/13/09 18:16	CLJ	4984675
Surr: 1,4-Difluorobenzene	91.6		% 60-155		1	04/13/09 18:16	CLJ	4984675
Surr: 4-Bromofluorobenzene	105		% 50-158		1	04/13/09 18:16	CLJ	4984675
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**		
Methane	0.0039		0.0012		1	04/23/09 18:57	V_L	4994608
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**		
Chloride	64.4		5		10	04/14/09 23:28	BDG	4985120
Sulfate	89		5		10	04/14/09 23:28	BDG	4985120
Nitrogen,Nitrate (As N)	ND		0.5		1	04/10/09 17:13	BDG	4982582
SEMIVOLATILE HYDROCARBONS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics	0.14		0.1		1	04/17/09 1:01	NW	4987516
Mineral Spirits Range Organics	ND		0.1		1	04/17/09 1:01	NW	4987516
Surr: n-Pentacosane	82.8		% 20-150		1	04/17/09 1:01	NW	4987516

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 14:10	N_M	1.00

Qualifiers:

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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-5 **Collected:** 04/09/2009 8:45 **SPL Sample ID:** 09040323-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	04/22/09 17:05	GY	4993775
1,2-Dichlorobenzene	ND		5	1	04/22/09 17:05	GY	4993775
1,2-Diphenylhydrazine	ND		10	1	04/22/09 17:05	GY	4993775
1,3-Dichlorobenzene	ND		5	1	04/22/09 17:05	GY	4993775
1,4-Dichlorobenzene	ND		5	1	04/22/09 17:05	GY	4993775
2,4,5-Trichlorophenol	ND		10	1	04/22/09 17:05	GY	4993775
2,4,6-Trichlorophenol	ND		5	1	04/22/09 17:05	GY	4993775
2,4-Dichlorophenol	ND		5	1	04/22/09 17:05	GY	4993775
2,4-Dimethylphenol	ND		5	1	04/22/09 17:05	GY	4993775
2,4-Dinitrophenol	ND		25	1	04/22/09 17:05	GY	4993775
2,4-Dinitrotoluene	ND		5	1	04/22/09 17:05	GY	4993775
2,6-Dinitrotoluene	ND		5	1	04/22/09 17:05	GY	4993775
2-Chloronaphthalene	ND		5	1	04/22/09 17:05	GY	4993775
2-Chlorophenol	ND		5	1	04/22/09 17:05	GY	4993775
2-Methylnaphthalene	ND		5	1	04/22/09 17:05	GY	4993775
2-Nitroaniline	ND		25	1	04/22/09 17:05	GY	4993775
2-Nitrophenol	ND		5	1	04/22/09 17:05	GY	4993775
3,3'-Dichlorobenzidine	ND		10	1	04/22/09 17:05	GY	4993775
3-Nitroaniline	ND		25	1	04/22/09 17:05	GY	4993775
4,6-Dinitro-2-methylphenol	ND		25	1	04/22/09 17:05	GY	4993775
4-Bromophenyl phenyl ether	ND		5	1	04/22/09 17:05	GY	4993775
4-Chloro-3-methylphenol	ND		5	1	04/22/09 17:05	GY	4993775
4-Chloroaniline	ND		5	1	04/22/09 17:05	GY	4993775
4-Chlorophenyl phenyl ether	ND		5	1	04/22/09 17:05	GY	4993775
4-Nitroaniline	ND		25	1	04/22/09 17:05	GY	4993775
4-Nitrophenol	ND		25	1	04/22/09 17:05	GY	4993775
Acenaphthene	ND		5	1	04/22/09 17:05	GY	4993775
Acenaphthylene	ND		5	1	04/22/09 17:05	GY	4993775
Aniline	ND		5	1	04/22/09 17:05	GY	4993775
Anthracene	ND		5	1	04/22/09 17:05	GY	4993775
Benz(a)anthracene	ND		5	1	04/22/09 17:05	GY	4993775
Benzo(a)pyrene	ND		5	1	04/22/09 17:05	GY	4993775
Benzo(b)fluoranthene	ND		5	1	04/22/09 17:05	GY	4993775
Benzo(g,h,i)perylene	ND		5	1	04/22/09 17:05	GY	4993775
Benzo(k)fluoranthene	ND		5	1	04/22/09 17:05	GY	4993775
Benzoic acid	ND		25	1	04/22/09 17:05	GY	4993775
Benzyl alcohol	ND		5	1	04/22/09 17:05	GY	4993775
Bis(2-chloroethoxy)methane	ND		5	1	04/22/09 17:05	GY	4993775
Bis(2-chloroethyl)ether	ND		5	1	04/22/09 17:05	GY	4993775

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-5 **Collected:** 04/09/2009 8:45 **SPL Sample ID:** 09040323-01

Site: Hobbs NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND			5	1	04/22/09 17:05	GY	4993775
Bis(2-ethylhexyl)phthalate	ND			5	1	04/22/09 17:05	GY	4993775
Butyl benzyl phthalate	ND			5	1	04/22/09 17:05	GY	4993775
Carbazole	ND			5	1	04/22/09 17:05	GY	4993775
Chrysene	ND			5	1	04/22/09 17:05	GY	4993775
Dibenz(a,h)anthracene	ND			5	1	04/22/09 17:05	GY	4993775
Dibenzofuran	ND			5	1	04/22/09 17:05	GY	4993775
Diethyl phthalate	ND			5	1	04/22/09 17:05	GY	4993775
Dimethyl phthalate	ND			5	1	04/22/09 17:05	GY	4993775
Di-n-butyl phthalate	ND			5	1	04/22/09 17:05	GY	4993775
Di-n-octyl phthalate	ND			5	1	04/22/09 17:05	GY	4993775
Fluoranthene	ND			5	1	04/22/09 17:05	GY	4993775
Fluorene	ND			5	1	04/22/09 17:05	GY	4993775
Hexachlorobenzene	ND			5	1	04/22/09 17:05	GY	4993775
Hexachlorobutadiene	ND			5	1	04/22/09 17:05	GY	4993775
Hexachlorocyclopentadiene	ND			5	1	04/22/09 17:05	GY	4993775
Hexachloroethane	ND			5	1	04/22/09 17:05	GY	4993775
Indeno(1,2,3-cd)pyrene	ND			5	1	04/22/09 17:05	GY	4993775
Isophorone	ND			5	1	04/22/09 17:05	GY	4993775
Naphthalene	ND			5	1	04/22/09 17:05	GY	4993775
Nitrobenzene	ND			5	1	04/22/09 17:05	GY	4993775
N-Nitrosodi-n-propylamine	ND			5	1	04/22/09 17:05	GY	4993775
N-Nitrosodiphenylamine	ND			5	1	04/22/09 17:05	GY	4993775
Pentachlorophenol	ND			25	1	04/22/09 17:05	GY	4993775
Phenanthrene	ND			5	1	04/22/09 17:05	GY	4993775
Phenol	ND			5	1	04/22/09 17:05	GY	4993775
Pyrene	ND			5	1	04/22/09 17:05	GY	4993775
Pyridine	ND			5	1	04/22/09 17:05	GY	4993775
2-Methylphenol	ND			5	1	04/22/09 17:05	GY	4993775
3 & 4-Methylphenol	ND			5	1	04/22/09 17:05	GY	4993775
Surr: 2,4,6-Tribromophenol	74.7		%	10-123	1	04/22/09 17:05	GY	4993775
Surr: 2-Fluorobiphenyl	57.2		%	23-116	1	04/22/09 17:05	GY	4993775
Surr: 2-Fluorophenol	49.6		%	16-110	1	04/22/09 17:05	GY	4993775
Surr: Nitrobenzene-d5	56.2		%	21-114	1	04/22/09 17:05	GY	4993775
Surr: Phenol-d5	32.0		%	10-110	1	04/22/09 17:05	GY	4993775
Surr: Terphenyl-d14	49.6		%	22-141	1	04/22/09 17:05	GY	4993775

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 8:15	N_M	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-5 **Collected:** 04/09/2009 8:45 **SPL Sample ID:** 09040323-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/14/09 21:24	JC	4985230
1,1,1-Trichloroethane	ND		5	1	04/14/09 21:24	JC	4985230
1,1,2,2-Tetrachloroethane	ND		5	1	04/14/09 21:24	JC	4985230
1,1,2-Trichloroethane	ND		5	1	04/14/09 21:24	JC	4985230
1,1-Dichloroethane	ND		5	1	04/14/09 21:24	JC	4985230
1,1-Dichloroethene	ND		5	1	04/14/09 21:24	JC	4985230
1,1-Dichloropropene	ND		5	1	04/14/09 21:24	JC	4985230
1,2,3-Trichlorobenzene	ND		5	1	04/14/09 21:24	JC	4985230
1,2,3-Trichloropropane	ND		5	1	04/14/09 21:24	JC	4985230
1,2,4-Trichlorobenzene	ND		5	1	04/14/09 21:24	JC	4985230
1,2,4-Trimethylbenzene	ND		5	1	04/14/09 21:24	JC	4985230
1,2-Dibromo-3-chloropropane	ND		5	1	04/14/09 21:24	JC	4985230
1,2-Dibromoethane	ND		5	1	04/14/09 21:24	JC	4985230
1,2-Dichlorobenzene	ND		5	1	04/14/09 21:24	JC	4985230
1,2-Dichloroethane	ND		5	1	04/14/09 21:24	JC	4985230
1,2-Dichloropropane	ND		5	1	04/14/09 21:24	JC	4985230
1,3,5-Trimethylbenzene	ND		5	1	04/14/09 21:24	JC	4985230
1,3-Dichlorobenzene	ND		5	1	04/14/09 21:24	JC	4985230
1,3-Dichloropropane	ND		5	1	04/14/09 21:24	JC	4985230
1,4-Dichlorobenzene	ND		5	1	04/14/09 21:24	JC	4985230
2,2-Dichloropropane	ND		5	1	04/14/09 21:24	JC	4985230
2-Butanone	ND		20	1	04/14/09 21:24	JC	4985230
2-Chloroethyl vinyl ether	ND J		10	1	04/14/09 21:24	JC	4985230
2-Chlorotoluene	ND		5	1	04/14/09 21:24	JC	4985230
2-Hexanone	ND		10	1	04/14/09 21:24	JC	4985230
4-Chlorotoluene	ND		5	1	04/14/09 21:24	JC	4985230
4-Isopropyltoluene	ND		5	1	04/14/09 21:24	JC	4985230
4-Methyl-2-pentanone	ND		10	1	04/14/09 21:24	JC	4985230
Acetone	ND		20	1	04/14/09 21:24	JC	4985230
Acrylonitrile	ND		10	1	04/14/09 21:24	JC	4985230
Benzene	ND		5	1	04/14/09 21:24	JC	4985230
Bromobenzene	ND		5	1	04/14/09 21:24	JC	4985230
Bromochloromethane	ND		5	1	04/14/09 21:24	JC	4985230
Bromodichloromethane	ND		5	1	04/14/09 21:24	JC	4985230
Bromoform	ND		5	1	04/14/09 21:24	JC	4985230
Bromomethane	ND		10	1	04/14/09 21:24	JC	4985230
Carbon disulfide	ND		5	1	04/14/09 21:24	JC	4985230
Carbon tetrachloride	ND		5	1	04/14/09 21:24	JC	4985230
Chlorobenzene	ND		5	1	04/14/09 21:24	JC	4985230

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-5 **Collected:** 04/09/2009 8:45 **SPL Sample ID:** 09040323-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/14/09 21:24	JC	4985230
Chloroform	ND		5	1	04/14/09 21:24	JC	4985230
Chloromethane	ND		10	1	04/14/09 21:24	JC	4985230
Dibromochloromethane	ND		5	1	04/14/09 21:24	JC	4985230
Dibromomethane	ND		5	1	04/14/09 21:24	JC	4985230
Dichlorodifluoromethane	ND		10	1	04/14/09 21:24	JC	4985230
Ethylbenzene	ND		5	1	04/14/09 21:24	JC	4985230
Hexachlorobutadiene	ND		5	1	04/14/09 21:24	JC	4985230
Isopropylbenzene	ND		5	1	04/14/09 21:24	JC	4985230
Methyl tert-butyl ether	ND		5	1	04/14/09 21:24	JC	4985230
Methylene chloride	ND		5	1	04/14/09 21:24	JC	4985230
Naphthalene	ND		5	1	04/14/09 21:24	JC	4985230
n-Butylbenzene	ND		5	1	04/14/09 21:24	JC	4985230
n-Propylbenzene	ND		5	1	04/14/09 21:24	JC	4985230
sec-Butylbenzene	ND		5	1	04/14/09 21:24	JC	4985230
Styrene	ND		5	1	04/14/09 21:24	JC	4985230
tert-Butylbenzene	ND		5	1	04/14/09 21:24	JC	4985230
Tetrachloroethene	ND		5	1	04/14/09 21:24	JC	4985230
Toluene	ND		5	1	04/14/09 21:24	JC	4985230
Trichloroethene	ND		5	1	04/14/09 21:24	JC	4985230
Trichlorofluoromethane	ND		5	1	04/14/09 21:24	JC	4985230
Vinyl acetate	ND		10	1	04/14/09 21:24	JC	4985230
Vinyl chloride	ND		2	1	04/14/09 21:24	JC	4985230
cis-1,2-Dichloroethene	ND		5	1	04/14/09 21:24	JC	4985230
cis-1,3-Dichloropropene	ND		5	1	04/14/09 21:24	JC	4985230
m,p-Xylene	ND		5	1	04/14/09 21:24	JC	4985230
o-Xylene	ND		5	1	04/14/09 21:24	JC	4985230
trans-1,2-Dichloroethene	ND		5	1	04/14/09 21:24	JC	4985230
trans-1,3-Dichloropropene	ND		5	1	04/14/09 21:24	JC	4985230
1,2-Dichloroethene (total)	ND		5	1	04/14/09 21:24	JC	4985230
Xylenes,Total	ND		5	1	04/14/09 21:24	JC	4985230
Surr: 1,2-Dichloroethane-d4	96.0		% 65-111	1	04/14/09 21:24	JC	4985230
Surr: 4-Bromofluorobenzene	108		% 87-120	1	04/14/09 21:24	JC	4985230
Surr: Toluene-d8	96.0		% 88-116	1	04/14/09 21:24	JC	4985230

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TB-4-9-09 **Collected:** 04/09/2009 9:25 **SPL Sample ID:** 09040323-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/14/09 21:51	JC	4985231
1,1,1-Trichloroethane	ND		5	1	04/14/09 21:51	JC	4985231
1,1,2,2-Tetrachloroethane	ND		5	1	04/14/09 21:51	JC	4985231
1,1,2-Trichloroethane	ND		5	1	04/14/09 21:51	JC	4985231
1,1-Dichloroethane	ND		5	1	04/14/09 21:51	JC	4985231
1,1-Dichloroethene	ND		5	1	04/14/09 21:51	JC	4985231
1,1-Dichloropropene	ND		5	1	04/14/09 21:51	JC	4985231
1,2,3-Trichlorobenzene	ND		5	1	04/14/09 21:51	JC	4985231
1,2,3-Trichloropropane	ND		5	1	04/14/09 21:51	JC	4985231
1,2,4-Trichlorobenzene	ND		5	1	04/14/09 21:51	JC	4985231
1,2,4-Trimethylbenzene	ND		5	1	04/14/09 21:51	JC	4985231
1,2-Dibromo-3-chloropropane	ND		5	1	04/14/09 21:51	JC	4985231
1,2-Dibromoethane	ND		5	1	04/14/09 21:51	JC	4985231
1,2-Dichlorobenzene	ND		5	1	04/14/09 21:51	JC	4985231
1,2-Dichloroethane	ND		5	1	04/14/09 21:51	JC	4985231
1,2-Dichloropropane	ND		5	1	04/14/09 21:51	JC	4985231
1,3,5-Trimethylbenzene	ND		5	1	04/14/09 21:51	JC	4985231
1,3-Dichlorobenzene	ND		5	1	04/14/09 21:51	JC	4985231
1,3-Dichloropropane	ND		5	1	04/14/09 21:51	JC	4985231
1,4-Dichlorobenzene	ND		5	1	04/14/09 21:51	JC	4985231
2,2-Dichloropropane	ND		5	1	04/14/09 21:51	JC	4985231
2-Butanone	ND		20	1	04/14/09 21:51	JC	4985231
2-Chloroethyl vinyl ether	ND	J	10	1	04/14/09 21:51	JC	4985231
2-Chlorotoluene	ND		5	1	04/14/09 21:51	JC	4985231
2-Hexanone	ND		10	1	04/14/09 21:51	JC	4985231
4-Chlorotoluene	ND		5	1	04/14/09 21:51	JC	4985231
4-Isopropyltoluene	ND		5	1	04/14/09 21:51	JC	4985231
4-Methyl-2-pentanone	ND		10	1	04/14/09 21:51	JC	4985231
Acetone	ND		20	1	04/14/09 21:51	JC	4985231
Acrylonitrile	ND		10	1	04/14/09 21:51	JC	4985231
Benzene	ND		5	1	04/14/09 21:51	JC	4985231
Bromobenzene	ND		5	1	04/14/09 21:51	JC	4985231
Bromochloromethane	ND		5	1	04/14/09 21:51	JC	4985231
Bromodichloromethane	ND		5	1	04/14/09 21:51	JC	4985231
Bromoform	ND		5	1	04/14/09 21:51	JC	4985231
Bromomethane	ND		10	1	04/14/09 21:51	JC	4985231
Carbon disulfide	ND		5	1	04/14/09 21:51	JC	4985231
Carbon tetrachloride	ND		5	1	04/14/09 21:51	JC	4985231
Chlorobenzene	ND		5	1	04/14/09 21:51	JC	4985231

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TB-4-9-09 **Collected:** 04/09/2009 9:25 **SPL Sample ID:** 09040323-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/14/09 21:51	JC	4985231
Chloroform	ND		5	1	04/14/09 21:51	JC	4985231
Chloromethane	ND		10	1	04/14/09 21:51	JC	4985231
Dibromochloromethane	ND		5	1	04/14/09 21:51	JC	4985231
Dibromomethane	ND		5	1	04/14/09 21:51	JC	4985231
Dichlorodifluoromethane	ND		10	1	04/14/09 21:51	JC	4985231
Ethylbenzene	ND		5	1	04/14/09 21:51	JC	4985231
Hexachlorobutadiene	ND		5	1	04/14/09 21:51	JC	4985231
Isopropylbenzene	ND		5	1	04/14/09 21:51	JC	4985231
Methyl tert-butyl ether	ND		5	1	04/14/09 21:51	JC	4985231
Methylene chloride	ND		5	1	04/14/09 21:51	JC	4985231
Naphthalene	ND		5	1	04/14/09 21:51	JC	4985231
n-Butylbenzene	ND		5	1	04/14/09 21:51	JC	4985231
n-Propylbenzene	ND		5	1	04/14/09 21:51	JC	4985231
sec-Butylbenzene	ND		5	1	04/14/09 21:51	JC	4985231
Styrene	ND		5	1	04/14/09 21:51	JC	4985231
tert-Butylbenzene	ND		5	1	04/14/09 21:51	JC	4985231
Tetrachloroethene	ND		5	1	04/14/09 21:51	JC	4985231
Toluene	ND		5	1	04/14/09 21:51	JC	4985231
Trichloroethene	ND		5	1	04/14/09 21:51	JC	4985231
Trichlorofluoromethane	ND		5	1	04/14/09 21:51	JC	4985231
Vinyl acetate	ND		10	1	04/14/09 21:51	JC	4985231
Vinyl chloride	ND		2	1	04/14/09 21:51	JC	4985231
cis-1,2-Dichloroethene	ND		5	1	04/14/09 21:51	JC	4985231
cis-1,3-Dichloropropene	ND		5	1	04/14/09 21:51	JC	4985231
m,p-Xylene	ND		5	1	04/14/09 21:51	JC	4985231
o-Xylene	ND		5	1	04/14/09 21:51	JC	4985231
trans-1,2-Dichloroethene	ND		5	1	04/14/09 21:51	JC	4985231
trans-1,3-Dichloropropene	ND		5	1	04/14/09 21:51	JC	4985231
1,2-Dichloroethene (total)	ND		5	1	04/14/09 21:51	JC	4985231
Xylenes,Total	ND		5	1	04/14/09 21:51	JC	4985231
Surr: 1,2-Dichloroethane-d4	98.0		% 65-111	1	04/14/09 21:51	JC	4985231
Surr: 4-Bromofluorobenzene	108		% 87-120	1	04/14/09 21:51	JC	4985231
Surr: Toluene-d8	94.0		% 88-116	1	04/14/09 21:51	JC	4985231

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: FB-4-9-09 **Collected:** 04/09/2009 9:31 **SPL Sample ID:** 09040323-03

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/14/09 22:19	JC	4985232
1,1,1-Trichloroethane	ND		5	1	04/14/09 22:19	JC	4985232
1,1,2,2-Tetrachloroethane	ND		5	1	04/14/09 22:19	JC	4985232
1,1,2-Trichloroethane	ND		5	1	04/14/09 22:19	JC	4985232
1,1-Dichloroethane	ND		5	1	04/14/09 22:19	JC	4985232
1,1-Dichloroethene	ND		5	1	04/14/09 22:19	JC	4985232
1,1-Dichloropropene	ND		5	1	04/14/09 22:19	JC	4985232
1,2,3-Trichlorobenzene	ND		5	1	04/14/09 22:19	JC	4985232
1,2,3-Trichloropropane	ND		5	1	04/14/09 22:19	JC	4985232
1,2,4-Trichlorobenzene	ND		5	1	04/14/09 22:19	JC	4985232
1,2,4-Trimethylbenzene	ND		5	1	04/14/09 22:19	JC	4985232
1,2-Dibromo-3-chloropropane	ND		5	1	04/14/09 22:19	JC	4985232
1,2-Dibromoethane	ND		5	1	04/14/09 22:19	JC	4985232
1,2-Dichlorobenzene	ND		5	1	04/14/09 22:19	JC	4985232
1,2-Dichloroethane	ND		5	1	04/14/09 22:19	JC	4985232
1,2-Dichloropropane	ND		5	1	04/14/09 22:19	JC	4985232
1,3,5-Trimethylbenzene	ND		5	1	04/14/09 22:19	JC	4985232
1,3-Dichlorobenzene	ND		5	1	04/14/09 22:19	JC	4985232
1,3-Dichloropropane	ND		5	1	04/14/09 22:19	JC	4985232
1,4-Dichlorobenzene	ND		5	1	04/14/09 22:19	JC	4985232
2,2-Dichloropropane	ND		5	1	04/14/09 22:19	JC	4985232
2-Butanone	ND		20	1	04/14/09 22:19	JC	4985232
2-Chloroethyl vinyl ether	ND J		10	1	04/14/09 22:19	JC	4985232
2-Chlorotoluene	ND		5	1	04/14/09 22:19	JC	4985232
2-Hexanone	ND		10	1	04/14/09 22:19	JC	4985232
4-Chlorotoluene	ND		5	1	04/14/09 22:19	JC	4985232
4-Isopropyltoluene	ND		5	1	04/14/09 22:19	JC	4985232
4-Methyl-2-pentanone	ND		10	1	04/14/09 22:19	JC	4985232
Acetone	ND		20	1	04/14/09 22:19	JC	4985232
Acrylonitrile	ND		10	1	04/14/09 22:19	JC	4985232
Benzene	ND		5	1	04/14/09 22:19	JC	4985232
Bromobenzene	ND		5	1	04/14/09 22:19	JC	4985232
Bromochloromethane	ND		5	1	04/14/09 22:19	JC	4985232
Bromodichloromethane	ND		5	1	04/14/09 22:19	JC	4985232
Bromoform	ND		5	1	04/14/09 22:19	JC	4985232
Bromomethane	ND		10	1	04/14/09 22:19	JC	4985232
Carbon disulfide	ND		5	1	04/14/09 22:19	JC	4985232
Carbon tetrachloride	ND		5	1	04/14/09 22:19	JC	4985232
Chlorobenzene	ND		5	1	04/14/09 22:19	JC	4985232

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: FB-4-9-09 **Collected:** 04/09/2009 9:31 **SPL Sample ID:** 09040323-03

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/14/09 22:19	JC	4985232
Chloroform	ND		5	1	04/14/09 22:19	JC	4985232
Chloromethane	ND		10	1	04/14/09 22:19	JC	4985232
Dibromochloromethane	ND		5	1	04/14/09 22:19	JC	4985232
Dibromomethane	ND		5	1	04/14/09 22:19	JC	4985232
Dichlorodifluoromethane	ND		10	1	04/14/09 22:19	JC	4985232
Ethylbenzene	ND		5	1	04/14/09 22:19	JC	4985232
Hexachlorobutadiene	ND		5	1	04/14/09 22:19	JC	4985232
Isopropylbenzene	ND		5	1	04/14/09 22:19	JC	4985232
Methyl tert-butyl ether	ND		5	1	04/14/09 22:19	JC	4985232
Methylene chloride	ND		5	1	04/14/09 22:19	JC	4985232
Naphthalene	ND		5	1	04/14/09 22:19	JC	4985232
n-Butylbenzene	ND		5	1	04/14/09 22:19	JC	4985232
n-Propylbenzene	ND		5	1	04/14/09 22:19	JC	4985232
sec-Butylbenzene	ND		5	1	04/14/09 22:19	JC	4985232
Styrene	ND		5	1	04/14/09 22:19	JC	4985232
tert-Butylbenzene	ND		5	1	04/14/09 22:19	JC	4985232
Tetrachloroethene	ND		5	1	04/14/09 22:19	JC	4985232
Toluene	ND		5	1	04/14/09 22:19	JC	4985232
Trichloroethene	ND		5	1	04/14/09 22:19	JC	4985232
Trichlorofluoromethane	ND		5	1	04/14/09 22:19	JC	4985232
Vinyl acetate	ND		10	1	04/14/09 22:19	JC	4985232
Vinyl chloride	ND		2	1	04/14/09 22:19	JC	4985232
cis-1,2-Dichloroethene	ND		5	1	04/14/09 22:19	JC	4985232
cis-1,3-Dichloropropene	ND		5	1	04/14/09 22:19	JC	4985232
m,p-Xylene	ND		5	1	04/14/09 22:19	JC	4985232
o-Xylene	ND		5	1	04/14/09 22:19	JC	4985232
trans-1,2-Dichloroethene	ND		5	1	04/14/09 22:19	JC	4985232
trans-1,3-Dichloropropene	ND		5	1	04/14/09 22:19	JC	4985232
1,2-Dichloroethene (total)	ND		5	1	04/14/09 22:19	JC	4985232
Xylenes,Total	ND		5	1	04/14/09 22:19	JC	4985232
Surr: 1,2-Dichloroethane-d4	98.0		% 65-111	1	04/14/09 22:19	JC	4985232
Surr: 4-Bromofluorobenzene	108		% 87-120	1	04/14/09 22:19	JC	4985232
Surr: Toluene-d8	92.0		% 88-116	1	04/14/09 22:19	JC	4985232

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Hydrocarbons **WorkOrder:** 09040323
Method: SW8015B **Lab Batch ID:** 89427

Method Blank

RunID: HP_V_090416B-4987505 Units: mg/L
Analysis Date: 04/14/2009 23:43 Analyst: NW
Preparation Date: 04/13/2009 14:10 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040323-01C	MW-5

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.10
Mineral Spirits Range Organics	ND	0.10
Surr: n-Pentacosane	51.2	20-150

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HP_V_090416B-4987506 Units: mg/L
Analysis Date: 04/15/2009 0:03 Analyst: NW
Preparation Date: 04/13/2009 14:10 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics	1.00	0.895	89.5	1.00	0.880	88.0	1.7	40	21	150
Surr: n-Pentacosane	0.0500	0.0494	98.8	0.0500	0.0485	97.0	1.8	30	20	150

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Headspace Gas Analysis **WorkOrder:** 09040323
Method: RSK147 **Lab Batch ID:** R270984

Method Blank

RunID: VARC_090423A-4994604 Units: mg/L
Analysis Date: 04/23/2009 15:49 Analyst: V_L

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040323-01E	MW-5

Analyte	Result	Rep Limit
Methane	ND	0.0012

Sample Duplicate

Original Sample: H0904040100
RunID: VARC_090423A-4994605 Units: mg/L
Analysis Date: 04/23/2009 16:06 Analyst: V_L

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Methane	ND	ND	0	50

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Gasoline Range Organics
Method: SW8015B
WorkOrder: 09040323
Lab Batch ID: R270269

Method Blank

RunID: HP_P_090413A-4984662 Units: mg/L
Analysis Date: 04/13/2009 5:20 Analyst: CLJ

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040323-01D	MW-5

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	91.5	60-155
Surr: 4-Bromofluorobenzene	104.0	50-158

Laboratory Control Sample (LCS)

RunID: HP_P_090413A-4984660 Units: mg/L
Analysis Date: 04/13/2009 4:22 Analyst: CLJ

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	0.859	85.9	42	136
Surr: 1,4-Difluorobenzene	0.100	0.0949	94.9	60	155
Surr: 4-Bromofluorobenzene	0.100	0.108	108	50	158

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040343-01
RunID: HP_P_090413A-4984664 Units: mg/L
Analysis Date: 04/13/2009 10:44 Analyst: CLJ

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	1	0.852	85.2	1	0.868	86.8	1.92	36	22	174
Surr: 1,4-Difluorobenzene	ND	0.1	0.0922	92.2	0.1	0.0932	93.2	1.08	30	60	155
Surr: 4-Bromofluorobenzene	ND	0.1	0.105	105	0.1	0.107	107	1.41	30	50	158

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C
WorkOrder: 09040323
Method: SW8270C
Lab Batch ID: 89412

Method Blank

RunID: H_090417E-4992370
Units: ug/L
Analysis Date: 04/17/2009 9:40
Analyst: GY
Preparation Date: 04/13/2009 8:15
Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040323-01B	MW-5

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Diphenylhydrazine	ND	10
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,4,5-Trichlorophenol	ND	10
2,4,6-Trichlorophenol	ND	5.0
2,4-Dichlorophenol	ND	5.0
2,4-Dimethylphenol	ND	5.0
2,4-Dinitrophenol	ND	25
2,4-Dinitrotoluene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Chlorophenol	ND	5.0
2-Methylnaphthalene	ND	5.0
2-Nitroaniline	ND	25
2-Nitrophenol	ND	5.0
3,3'-Dichlorobenzidine	ND	10
3-Nitroaniline	ND	25
4,6-Dinitro-2-methylphenol	ND	25
4-Bromophenyl phenyl ether	ND	5.0
4-Chloro-3-methylphenol	ND	5.0
4-Chloroaniline	ND	5.0
4-Chlorophenyl phenyl ether	ND	5.0
4-Nitroaniline	ND	25
4-Nitrophenol	ND	25
Acenaphthene	ND	5.0
Acenaphthylene	ND	5.0
Aniline	ND	5.0
Anthracene	ND	5.0
Benz(a)anthracene	ND	5.0
Benzo(a)pyrene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzoic acid	ND	25
Benzyl alcohol	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Butyl benzyl phthalate	ND	5.0
Carbazole	ND	5.0
Chrysene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Dibenzofuran	ND	5.0

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040323
Method: SW8270C **Lab Batch ID:** 89412

Method Blank

RunID: H_090417E-4992370 Units: ug/L
Analysis Date: 04/17/2009 9:40 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	5.0
Dimethyl phthalate	ND	5.0
Di-n-butyl phthalate	ND	5.0
Di-n-octyl phthalate	ND	5.0
Fluoranthene	ND	5.0
Fluorene	ND	5.0
Hexachlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
Hexachloroethane	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Isophorone	ND	5.0
Naphthalene	ND	5.0
Nitrobenzene	ND	5.0
N-Nitrosodi-n-propylamine	ND	5.0
N-Nitrosodiphenylamine	ND	5.0
Pentachlorophenol	ND	25
Phenanthrene	ND	5.0
Phenol	ND	5.0
Pyrene	ND	5.0
Pyridine	ND	5.0
2-Methylphenol	ND	5.0
3 & 4-Methylphenol	ND	5.0
Surr: 2,4,6-Tribromophenol	95.2	10-123
Surr: 2-Fluorobiphenyl	72.6	23-116
Surr: 2-Fluorophenol	76.1	16-110
Surr: Nitrobenzene-d5	68.4	21-114
Surr: Phenol-d5	62.5	10-110
Surr: Terphenyl-d14	68.4	22-141

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2,4-Trichlorobenzene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	39	21	120
1,2-Dichlorobenzene	25.0	15.4	61.6	25.0	16.7	66.8	8.1	50	20	150

Qualifiers:
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B/V - Analyte detected in the associated Method Blank
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TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040323
Method: SW8270C **Lab Batch ID:** 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Diphenylhydrazine	25.0	16.5	66.0	25.0	17.6	70.4	6.5	50	10	251
1,3-Dichlorobenzene	25.0	15.4	61.6	25.0	16.5	66.0	6.9	50	20	150
1,4-Dichlorobenzene	25.0	15.3	61.2	25.0	16.2	64.8	5.7	45	20	150
2,4,5-Trichlorophenol	25.0	14.9	59.6	25.0	15.4	61.6	3.3	50	30	150
2,4,6-Trichlorophenol	25.0	15.2	60.8	25.0	16.0	64.0	5.1	50	30	150
2,4-Dichlorophenol	25.0	14.5	58.0	25.0	15.9	63.6	9.2	50	30	150
2,4-Dimethylphenol	25.0	15.4	61.6	25.0	16.0	64.0	3.8	50	32	140
2,4-Dinitrophenol	25.0	11.9	47.6	25.0	12.8	51.2	7.3	50	10	160
2,4-Dinitrotoluene	25.0	16.1	64.4	25.0	16.3	65.2	1.2	50	30	150
2,6-Dinitrotoluene	25.0	15.8	63.2	25.0	15.7	62.8	0.6	50	30	150
2-Chloronaphthalene	25.0	15.8	63.2	25.0	16.5	66.0	4.3	50	30	150
2-Chlorophenol	25.0	15.4	61.6	25.0	15.9	63.6	3.2	40	23	134
2-Methylnaphthalene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	50	20	170
2-Nitroaniline	25.0	14.8	59.2	25.0	15.9	63.6	7.2	50	20	160
2-Nitrophenol	25.0	14.9	59.6	25.0	15.8	63.2	5.9	50	29	182
3,3'-Dichlorobenzidine	25.0	13.3	53.2	25.0	13.7	54.8	3.0	50	30	200
3-Nitroaniline	25.0	14.4	57.6	25.0	14.8	59.2	2.7	50	20	160
4,6-Dinitro-2-methylphenol	25.0	13.7	54.8	25.0	14.2	56.8	3.6	50	10	160
4-Bromophenyl phenyl ether	25.0	15.6	62.4	25.0	15.8	63.2	1.3	50	30	150
4-Chloro-3-methylphenol	25.0	15.2	60.8	25.0	16.1	64.4	5.8	42	25	160
4-Chloroaniline	25.0	15.5	62.0	25.0	16.2	64.8	4.4	50	20	160
4-Chlorophenyl phenyl ether	25.0	15.7	62.8	25.0	16.3	65.2	3.8	50	25	158
4-Nitroaniline	25.0	13.9	55.6	25.0	14.8	59.2	6.3	50	20	160
4-Nitrophenol	25.0	13.0	52.0	25.0	14.8	59.2	12.9	50	10	132
Acenaphthene	25.0	15.3	61.2	25.0	16.3	65.2	6.3	31	30	150
Acenaphthylene	25.0	15.4	61.6	25.0	16.4	65.6	6.3	50	33	250
Aniline	50.0	29.9	59.8	50.0	30.9	61.8	3.3	50	10	135
Anthracene	25.0	15.6	62.4	25.0	16.5	66.0	5.6	50	27	133
Benz(a)anthracene	25.0	15.6	62.4	25.0	16.4	65.6	5.0	50	33	143
Benzo(a)pyrene	25.0	12.2	48.8	25.0	12.7	50.8	4.0	50	17	163
Benzo(b)fluoranthene	25.0	14.9	59.6	25.0	15.2	60.8	2.0	50	24	159
Benzo(g,h,i)perylene	25.0	15.7	62.8	25.0	15.9	63.6	1.3	50	30	160
Benzo(k)fluoranthene	25.0	15.0	60.0	25.0	15.2	60.8	1.3	50	11	162

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C
WorkOrder: 09040323
Method: SW8270C
Lab Batch ID: 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzoic acid	25.0	15.7	62.8	25.0	16.0	64.0	1.9	50	10	400
Benzyl alcohol	25.0	14.7	58.8	25.0	16.2	64.8	9.7	50	30	160
Bis(2-chloroethoxy)methane	25.0	15.2	60.8	25.0	15.8	63.2	3.9	50	33	184
Bis(2-chloroethyl)ether	25.0	15.8	63.2	25.0	16.7	66.8	5.5	50	12	158
Bis(2-chloroisopropyl)ether	25.0	15.6	62.4	25.0	16.1	64.4	3.2	50	20	160
Bis(2-ethylhexyl)phthalate	25.0	16.1	64.4	25.0	17.0	68.0	5.4	50	10	158
Butyl benzyl phthalate	25.0	16.3	65.2	25.0	17.0	68.0	4.2	50	30	160
Carbazole	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	30	150
Chrysene	25.0	15.0	60.0	25.0	16.0	64.0	6.5	50	17	168
Dibenz(a,h)anthracene	25.0	15.5	62.0	25.0	15.7	62.8	1.3	50	30	160
Dibenzofuran	25.0	15.7	62.8	25.0	16.4	65.6	4.4	50	30	150
Diethyl phthalate	25.0	16.0	64.0	25.0	17.1	68.4	6.6	50	30	160
Dimethyl phthalate	25.0	15.7	62.8	25.0	16.8	67.2	6.8	50	30	160
Di-n-butyl phthalate	25.0	16.6	66.4	25.0	17.1	68.4	3.0	50	30	160
Di-n-octyl phthalate	25.0	16.2	64.8	25.0	17.0	68.0	4.8	50	20	150
Fluoranthene	25.0	15.9	63.6	25.0	16.3	65.2	2.5	50	26	137
Fluorene	25.0	15.4	61.6	25.0	16.3	65.2	5.7	50	30	150
Hexachlorobenzene	25.0	15.4	61.6	25.0	16.6	66.4	7.5	50	20	150
Hexachlorobutadiene	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	20	140
Hexachlorocyclopentadiene	25.0	17.2	68.8	25.0	19.1	76.4	10.5	50	10	150
Hexachloroethane	25.0	15.0	60.0	25.0	16.3	65.2	8.3	50	14	120
Indeno(1,2,3-cd)pyrene	25.0	16.3	65.2	25.0	17.5	70.0	7.1	50	30	160
Isophorone	25.0	16.2	64.8	25.0	17.3	69.2	6.6	50	21	196
Naphthalene	25.0	15.4	61.6	25.0	16.2	64.8	5.1	50	21	133
Nitrobenzene	25.0	15.3	61.2	25.0	16.0	64.0	4.5	50	20	160
N-Nitrosodi-n-propylamine	25.0	15.6	62.4	25.0	15.4	61.6	1.3	38	30	160
N-Nitrosodiphenylamine	50.0	38.0	76.0	50.0	40.4	80.8	6.1	50	30	150
Pentachlorophenol	25.0	11.5	46.0	25.0	12.8	51.2	10.7	50	14	176
Phenanthrene	25.0	15.3	61.2	25.0	16.1	64.4	5.1	50	10	140
Phenol	25.0	15.2	60.8	25.0	15.8	63.2	3.9	42	40	132
Pyrene	25.0	15.8	63.2	25.0	16.6	66.4	4.9	38	30	150
Pyridine	50.0	27.0	54.0	50.0	29.4	58.8	8.5	50	10	150
2-Methylphenol	25.0	15.7	62.8	25.0	16.2	64.8	3.1	50	30	160

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040323
Method: SW8270C **Lab Batch ID:** 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
3 & 4-Methylphenol	25.0	16.6	66.4	25.0	17.2	68.8	3.6	50	10	160
Surr: 2,4,6-Tribromophenol	75.0	61.1	81.5	75.0	60.8	81.1	0.5	30	10	123
Surr: 2-Fluorobiphenyl	50.0	28.6	57.2	50.0	29.5	59.0	3.1	30	23	116
Surr: 2-Fluorophenol	75.0	50.0	66.7	75.0	50.8	67.7	1.6	30	16	110
Surr: Nitrobenzene-d5	50.0	29.0	58.0	50.0	30.0	60.0	3.4	30	21	114
Surr: Phenol-d5	75.0	43.1	57.5	75.0	44.2	58.9	2.5	30	10	110
Surr: Terphenyl-d14	50.0	28.4	56.8	50.0	28.7	57.4	1.1	30	22	141

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040323
Lab Batch ID: R270264

Method Blank

RunID: Q_090414A-4985214 Units: ug/L
Analysis Date: 04/14/2009 14:10 Analyst: JC
Preparation Date: 04/14/2009 14:10 Prep By: Method

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040323-01A	MW-5
09040323-02A	TB-4-9-09
09040323-03A	FB-4-9-09

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	20
Acrylonitrile	ND	10
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Qualifiers:

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J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040323
Method: SW8260B **Lab Batch ID:** R270264

Method Blank

RunID: Q_090414A-4985214 Units: ug/L
Analysis Date: 04/14/2009 14:10 Analyst: JC
Preparation Date: 04/14/2009 14:10 Prep By: Method

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	2.0
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	98.0	65-111
Surr: 4-Bromofluorobenzene	108.0	87-120
Surr: Toluene-d8	92.0	88-116

Laboratory Control Sample (LCS)

RunID: Q_090414A-4985213 Units: ug/L
Analysis Date: 04/14/2009 13:43 Analyst: JC
Preparation Date: 04/14/2009 13:43 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	19.0	95.0	71	128
1,1,1-Trichloroethane	20.0	20.0	100	61	135
1,1,2,2-Tetrachloroethane	20.0	18.0	90.0	60	133
1,1,2-Trichloroethane	20.0	18.0	90.0	77	127
1,1-Dichloroethane	20.0	20.0	100	68	132

Qualifiers:

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J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040323
Method: SW8260B **Lab Batch ID:** R270264

Laboratory Control Sample (LCS)

RunID: Q_090414A-4985213 Units: ug/L
Analysis Date: 04/14/2009 13:43 Analyst: JC
Preparation Date: 04/14/2009 13:43 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	22.0	110	65	134
1,1-Dichloropropene	20.0	18.0	90.0	68	126
1,2,3-Trichlorobenzene	20.0	16.0	80.0	36	154
1,2,3-Trichloropropane	20.0	19.0	95.0	38	153
1,2,4-Trichlorobenzene	20.0	16.0	80.0	69	144
1,2,4-Trimethylbenzene	20.0	14.0	70.0	64	128
1,2-Dibromo-3-chloropropane	20.0	14.0	70.0	44	141
1,2-Dibromoethane	20.0	19.0	95.0	75	124
1,2-Dichlorobenzene	20.0	16.0	80.0	68	124
1,2-Dichloroethane	20.0	18.0	90.0	61	138
1,2-Dichloropropane	20.0	18.0	90.0	76	123
1,3,5-Trimethylbenzene	20.0	14.0	70.0	61	127
1,3-Dichlorobenzene	20.0	16.0	80.0	68	127
1,3-Dichloropropane	20.0	17.0	85.0	76	125
1,4-Dichlorobenzene	20.0	15.0	75.0	68	124
2,2-Dichloropropane	20.0	19.0	95.0	42	142
2-Butanone	20.0	20.0	100	22	183
2-Chloroethyl vinyl ether	20.0	18.0	90.0	10	179
2-Chlorotoluene	20.0	15.0	75.0	64	132
2-Hexanone	20.0	16.0	80.0	31	178
4-Chlorotoluene	20.0	15.0	75.0	61	132
4-Isopropyltoluene	20.0	14.0	70.0	63	136
4-Methyl-2-pentanone	20.0	16.0	80.0	10	159
Acetone	20.0	25.0	125	10	200
Acrylonitrile	20.0	20.0	100	54	155
Benzene	20.0	18.0	90.0	74	123
Bromobenzene	20.0	15.0	75.0	68	125
Bromochloromethane	20.0	21.0	105	71	124
Bromodichloromethane	20.0	19.0	95.0	72	128
Bromoform	20.0	19.0	95.0	81	135
Bromomethane	20.0	21.0	105	53	130
Carbon disulfide	20.0	27.0	135	41	143
Carbon tetrachloride	20.0	21.0	105	59	142
Chlorobenzene	20.0	18.0	90.0	75	125

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040323
Method: SW8260B **Lab Batch ID:** R270264

Laboratory Control Sample (LCS)

RunID: Q_090414A-4985213 Units: ug/L
Analysis Date: 04/14/2009 13:43 Analyst: JC
Preparation Date: 04/14/2009 13:43 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	20.0	100	60	134
Chloroform	20.0	20.0	100	71	127
Chloromethane	20.0	16.0	80.0	50	139
Dibromochloromethane	20.0	18.0	90.0	65	130
Dibromomethane	20.0	20.0	100	79	124
Dichlorodifluoromethane	20.0	17.0	85.0	22	162
Ethylbenzene	20.0	17.0	85.0	72	127
Hexachlorobutadiene	20.0	16.0	80.0	45	152
Isopropylbenzene	20.0	15.0	75.0	58	130
Methyl tert-butyl ether	40.0	40.0	100	63	123
Methylene chloride	20.0	21.0	105	61	135
Naphthalene	20.0	16.0	80.0	33	148
n-Butylbenzene	20.0	14.0	70.0	62	136
n-Propylbenzene	20.0	14.0	70.0	57	131
sec-Butylbenzene	20.0	14.0	70.0	63	131
Styrene	20.0	17.0	85.0	69	120
tert-Butylbenzene	20.0	14.0	70.0	59	131
Tetrachloroethene	20.0	21.0	105	45	173
Toluene	20.0	17.0	85.0	74	126
Trichloroethene	20.0	20.0	100	79	131
Trichlorofluoromethane	20.0	23.0	115	49	153
Vinyl acetate	20.0	16.0	80.0	10	167
Vinyl chloride	20.0	20.0	100	51	148
cis-1,2-Dichloroethene	20.0	20.0	100	71	128
cis-1,3-Dichloropropene	20.0	17.0	85.0	67	128
m,p-Xylene	40.0	35.0	87.5	71	129
o-Xylene	20.0	18.0	90.0	74	130
trans-1,2-Dichloroethene	20.0	21.0	105	66	128
trans-1,3-Dichloropropene	20.0	16.0	80.0	60	128
1,2-Dichloroethene (total)	40	41	100	66	128
Xylenes,Total	60	53	88	71	130
Surr: 1,2-Dichloroethane-d4	50.0	48	96.0	65	111
Surr: 4-Bromofluorobenzene	50.0	56	112	87	120
Surr: Toluene-d8	50.0	46	92.0	88	116

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis:	**Volatile Organics by Method 8260B**	**WorkOrder:**	**09040323**
Method:	**SW8260B**	**Lab Batch ID:**	**R270264**

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	68	124
1,1,1-Trichloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	69	123
1,1,2,2-Tetrachloroethane	ND	20	20.0	100	20	20.0	100	0	20	69	130
1,1,2-Trichloroethane	ND	20	20.0	100	20	20.0	100	0	20	75	126
1,1-Dichloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	65	129
1,1-Dichloroethene	ND	20	23.0	115	20	23.0	115	0	22	61	139
1,1-Dichloropropene	ND	20	21.0	105	20	20.0	100	4.88	20	69	121
1,2,3-Trichlorobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	53	127
1,2,3-Trichloropropane	ND	20	20.0	100	20	19.0	95.0	5.13	20	79	124
1,2,4-Trichlorobenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	58	118
1,2,4-Trimethylbenzene	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	43	132
1,2-Dibromo-3-chloropropane	ND	20	15.0	75.0	20	14.0	70.0	6.90	20	46	131
1,2-Dibromoethane	ND	20	20.0	100	20	20.0	100	0	20	76	122
1,2-Dichlorobenzene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	74	110
1,2-Dichloroethane	ND	20	18.0	90.0	20	18.0	90.0	0	20	60	129
1,2-Dichloropropane	ND	20	20.0	100	20	19.0	95.0	5.13	20	76	116
1,3,5-Trimethylbenzene	ND	20	15.0	75.0	20	14.0	70.0	6.90	20	51	121
1,3-Dichlorobenzene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	71	110
1,3-Dichloropropane	ND	20	19.0	95.0	20	18.0	90.0	5.41	20	80	119
1,4-Dichlorobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	69	110
2,2-Dichloropropane	ND	20	22.0	110	20	22.0	110	0	20	52	122
2-Butanone	ND	20	21.0	105	20	21.0	105	0	20	10	133
2-Chloroethyl vinyl ether	ND	20	0	0 *	20	0	0 *	0	20	10	182
2-Chlorotoluene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	69	112
2-Hexanone	ND	20	16.0	80.0	20	16.0	80.0	0	20	10	163
4-Chlorotoluene	ND	20	17.0	85.0	20	17.0	85.0	0	20	37	110
4-Isopropyltoluene	ND	20	16.0	80.0	20	16.0	80.0	0	20	65	116
4-Methyl-2-pentanone	ND	20	17.0	85.0	20	17.0	85.0	0	20	10	103
Acetone	ND	20	22.0	110	20	22.0	110	0	20	10	160
Acrylonitrile	ND	20	20.0	100	20	20.0	100	0	20	45	155

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040323
Method: SW8260B **Lab Batch ID:** R270264

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	21.0	105	20	20.0	100	4.88	22	70	124
Bromobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	72	111
Bromochloromethane	ND	20	25.0	125	20	24.0	120	4.08	20	73	126
Bromodichloromethane	ND	20	20.0	100	20	18.0	90.0	10.5	20	68	125
Bromoform	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	44	132
Bromomethane	ND	20	23.0	115	20	21.0	105	9.09	20	50	140
Carbon disulfide	ND	20	21.0	105	20	20.0	100	4.88	20	46	143
Carbon tetrachloride	ND	20	20.0	100	20	20.0	100	0	20	66	126
Chlorobenzene	ND	20	21.0	105	20	20.0	100	4.88	21	68	123
Chloroethane	ND	20	22.0	110	20	21.0	105	4.65	20	59	134
Chloroform	ND	20	21.0	105	20	20.0	100	4.88	20	68	127
Chloromethane	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	51	137
Dibromochloromethane	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	58	131
Dibromomethane	ND	20	22.0	110	20	20.0	100	9.52	20	82	123
Dichlorodifluoromethane	ND	20	16.0	80.0	20	17.0	85.0	6.06	20	35	143
Ethylbenzene	ND	20	20.0	100	20	19.0	95.0	5.13	20	76	122
Hexachlorobutadiene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	43	137
Isopropylbenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	57	124
Methyl tert-butyl ether	ND	40	43.0	108	40	42.0	105	2.35	20	10	200
Methylene chloride	ND	20	23.0	115	20	22.0	110	4.44	20	70	134
Naphthalene	ND	20	16.0	80.0	20	16.0	80.0	0	20	42	140
n-Butylbenzene	ND	20	16.0	80.0 *	20	16.0	80.0 *	0	20	82	112
n-Propylbenzene	ND	20	16.0	80.0	20	16.0	80.0	0	20	73	108
sec-Butylbenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	76	110
Styrene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	58	152
tert-Butylbenzene	ND	20	15.0	75.0	20	15.0	75.0	0	20	66	120
Tetrachloroethene	ND	20	25.0	125	20	25.0	125	0	20	71	130
Toluene	ND	20	20.0	100	20	20.0	100	0	24	80	117
Trichloroethene	ND	20	23.0	115	20	22.0	110	4.44	21	82	121
Trichlorofluoromethane	ND	20	21.0	105	20	21.0	105	0	20	74	138
Vinyl acetate	ND	20	18.0	90.0	20	18.0	90.0	0	20	66	135
Vinyl chloride	ND	20	20.0	100	20	19.0	95.0	5.13	20	45	143

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040323
Method: SW8260B **Lab Batch ID:** R270264

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	20	25.0	125	20	23.0	115	8.33	20	67	132
cis-1,3-Dichloropropene	ND	20	18.0	90.0	20	16.0	80.0	11.8	20	67	116
m,p-Xylene	ND	40	40.0	100	40	38.0	95.0	5.13	20	69	127
o-Xylene	ND	20	21.0	105	20	20.0	100	4.88	20	84	114
trans-1,2-Dichloroethene	ND	20	24.0	120	20	23.0	115	4.26	20	68	131
trans-1,3-Dichloropropene	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	56	131
1,2-Dichloroethene (total)	ND	40	49	120	40	46	120	6.3	20	67	132
Xylenes,Total	ND	60	61	100	60	58	97	5.0	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	50	49	98.0	50	49.0	98.0	0	30	65	111
Surr: 4-Bromofluorobenzene	ND	50	53	106	50	54.0	108	1.87	30	87	120
Surr: Toluene-d8	ND	50	47	94.0	50	48.0	96.0	2.11	30	88	116

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Ion Chromatography **WorkOrder:** 09040323
Method: E300.0 **Lab Batch ID:** R270143

Method Blank

RunID: IC2_090410A-4982576 Units: mg/L
Analysis Date: 04/10/2009 14:46 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040323-01F	MW-5

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090410A-4982577 Units: mg/L
Analysis Date: 04/10/2009 15:04 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10.00	10.48	104.8	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040324-01
RunID: IC2_090410A-4982583 Units: mg/L
Analysis Date: 04/10/2009 17:30 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	11.59	10	24.43	128.4 *	10	24.35	127.6 *	0.3075	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Alkalinity (as CaCO3), Total
Method: E310.1
WorkOrder: 09040323
Lab Batch ID: R270144

Method Blank

RunID: WET_090413F-4982657 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040323-01F	MW-5

Analyte	Result	Rep Limit
Alkalinity, Total (As CaCO3)	ND	2.0

Laboratory Control Sample (LCS)

RunID: WET_090413F-4982659 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Total (As CaCO3)	38.70	39.00	100.8	90	110

Sample Duplicate

Original Sample: 09040278-01
RunID: WET_090413F-4982660 Units: mg/L
Analysis Date: 04/13/2009 11:20 Analyst: PAC

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Total (As CaCO3)	174	175	0.573	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
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HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Ion Chromatography **WorkOrder:** 09040323
Method: E300.0 **Lab Batch ID:** R270297

Method Blank

RunID: IC2_090414D-4985092 Units: mg/L
Analysis Date: 04/14/2009 10:38 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040323-01F	MW-5

Analyte	Result	Rep Limit
Chloride	ND	0.50
Sulfate	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090414D-4985093 Units: mg/L
Analysis Date: 04/14/2009 10:55 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	10.00	10.52	105.2	85	115
Sulfate	10.00	10.57	105.7	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040254-01
RunID: IC2_090414D-4985097 Units: mg/L
Analysis Date: 04/14/2009 12:05 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	ND	10	10.68	106.8	10	10.66	106.6	0.2155	20	80	120
Sulfate	ND	10	11.07	110.7	10	10.07	100.7	9.423	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**09040323**	Received By:	**BF**
Date and Time Received:	**4/10/2009 10:00:00 AM**	Carrier name:	**FedEx**
Temperature:	**3.5°C**	Chilled by:	**Water Ice**

1. **Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐	
2. **Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐	
3. **Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑	
4. **Chain of custody present?**	Yes ☑	No ☐		
5. **Chain of custody signed when relinquished and received?**	Yes ☑	No ☐		
6. **Chain of custody agrees with sample labels?**	Yes ☑	No ☐		
7. **Samples in proper container/bottle?**	Yes ☑	No ☐		
8. **Sample containers intact?**	Yes ☑	No ☐		
9. **Sufficient sample volume for indicated test?**	Yes ☑	No ☐		
10. **All samples received within holding time?**	Yes ☑	No ☐		
11. **Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐		
12. **Water - VOA vials have zero headspace?**	Yes ☐	No ☐	VOA Vials Not Present ☑	
13. **Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☐	Not Applicable ☑	

***VOA Preservation Checked After Sample Analysis**

SPL Representative: Rodriguez, Alisha C. **Contact Date & Time:** 4/9/2009 2:53:00 PM

Client Name Contacted: Rick Rexroad w/Brown & Caldwell

Non Conformance Issues:

Client Instructions: Client emailed back at 13:31 on Monday 04/13/09 requesting that the extra vials be analyzed for Methane only

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No. 322332
09040323 page 1 of 1

Client Name: Brown and Caldwell
Address: 1415 Louisiana #2500
City: Houston State: TX Zip: 77002
Phone/Fax: 713-646-1129 713-308-3886
Client Contact: Rick Rexroad Email: RRexroad@BrwnCld.com
Project Name/No.: 128125 - BJ Services
Site Name: Fracmaster
Site Location: Hobbs, NM
Invoice To: R. Rexroad PH: 713-759-0999

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: VOCs (8260)	SVOCs (8270)	TPH-GRO/DRO (8015)	Chloride	NO3/SO4/Alkalinity	TDS @ 180
MW-5	4-9-09	0845		X	W	VAP	4x1/2	Lab	14	X	X	X	X	X	X
TB-4-9-09	↓	0925		X	W	V	40	↓	2	X					
FB-4-9-09	↓	0931		X	W	V	40	↓	3	X					

RUSH

Client/Consultant Remarks:

Laboratory remarks:

Intact? Y N
Ice? Y N
Temp: 3.5

Requested TAT
- ☐ 1 Business Day
- ☐ 2 Business Days
- ☐ 3 Business Days
- ☐ Other
- ☐ Contract
- ☒ Standard

Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☒ PDF ☒
Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

	date	time	
1. Relinquished by Sampler: R. Rexroad	4/9/09	12:00	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 4/10/09	time 10:00	6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09040326

Report To:		Project Name:	Fracmaster BJ Service,#128125
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	4/24/2009
ph: (713) 759-0999	fax:		

This Report Contains A Total Of 29 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

4/24/2009

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09040326

Report To:		Project Name:	Fracmaster BJ Service,#128125
Brown & Caldwell		Site:	Hobbs NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-			
ph: (713) 759-0999	fax:	Date Reported:	4/24/2009

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

For Volatile Organics analysis (8260B), the results for 2-chloroethyl vinyl ether are estimated due to sample preservation. The result for this compound is reported as "ND J" for all samples in the report.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 89427 for the Semivolatile Hydrocarbons analysis by Method 8015B. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID:89412 for the Semivolatile Organics analysis by SW846 Method 8270C. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Agnes V. Vicknair

4/24/2009

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09040326

Report To:	Brown & Caldwell Rick Rexroad 1415 Louisiana Suite 2500 Houston TX 77002- ph: (713) 759-0999 fax: (713) 308-3886	**Project Name:**	Fracmaster BJ Service,#128125
		Site:	Hobbs NM
		Site Address:	
		PO Number:	
		State:	New Mexico
		State Cert. No.:	
Fax To:		**Date Reported:**	4/24/2009

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
ERB-4-8-09	09040326-01	Water	4/8/2009 12:03:00 PM	4/10/2009 10:00:00 AM	322331	☐
ERB-4-9-09	09040326-02	Water	4/9/2009 10:16:00 AM	4/10/2009 10:00:00 AM	322331	☐

Agnes V. Vicknair

4/24/2009

Agnes V. Vicknair
Project Manager

Date

Kesavalu M. Bagawandoss
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: ERB-4-8-09 **Collected:** 04/08/2009 12:03 **SPL Sample ID:** 09040326-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND		0.1		1	04/13/09 18:44	CLJ	4984676
Surr: 1,4-Difluorobenzene	92.6		% 60-155		1	04/13/09 18:44	CLJ	4984676
Surr: 4-Bromofluorobenzene	106		% 50-158		1	04/13/09 18:44	CLJ	4984676
SEMIVOLATILE HYDROCARBONS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics	ND		0.1		1	04/17/09 1:21	NW	4987517
Mineral Spirits Range Organics	ND		0.1		1	04/17/09 1:21	NW	4987517
Surr: n-Pentacosane	59.6		% 20-150		1	04/17/09 1:21	NW	4987517

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 14:10	N_M	1.00

Qualifiers:

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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: ERB-4-8-09 **Collected:** 04/08/2009 12:03 **SPL Sample ID:** 09040326-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	04/17/09 18:13	GY	4992377
1,2-Dichlorobenzene	ND		5	1	04/17/09 18:13	GY	4992377
1,2-Diphenylhydrazine	ND		10	1	04/17/09 18:13	GY	4992377
1,3-Dichlorobenzene	ND		5	1	04/17/09 18:13	GY	4992377
1,4-Dichlorobenzene	ND		5	1	04/17/09 18:13	GY	4992377
2,4,5-Trichlorophenol	ND		10	1	04/17/09 18:13	GY	4992377
2,4,6-Trichlorophenol	ND		5	1	04/17/09 18:13	GY	4992377
2,4-Dichlorophenol	ND		5	1	04/17/09 18:13	GY	4992377
2,4-Dimethylphenol	ND		5	1	04/17/09 18:13	GY	4992377
2,4-Dinitrophenol	ND		25	1	04/17/09 18:13	GY	4992377
2,4-Dinitrotoluene	ND		5	1	04/17/09 18:13	GY	4992377
2,6-Dinitrotoluene	ND		5	1	04/17/09 18:13	GY	4992377
2-Chloronaphthalene	ND		5	1	04/17/09 18:13	GY	4992377
2-Chlorophenol	ND		5	1	04/17/09 18:13	GY	4992377
2-Methylnaphthalene	ND		5	1	04/17/09 18:13	GY	4992377
2-Nitroaniline	ND		25	1	04/17/09 18:13	GY	4992377
2-Nitrophenol	ND		5	1	04/17/09 18:13	GY	4992377
3,3'-Dichlorobenzidine	ND		10	1	04/17/09 18:13	GY	4992377
3-Nitroaniline	ND		25	1	04/17/09 18:13	GY	4992377
4,6-Dinitro-2-methylphenol	ND		25	1	04/17/09 18:13	GY	4992377
4-Bromophenyl phenyl ether	ND		5	1	04/17/09 18:13	GY	4992377
4-Chloro-3-methylphenol	ND		5	1	04/17/09 18:13	GY	4992377
4-Chloroaniline	ND		5	1	04/17/09 18:13	GY	4992377
4-Chlorophenyl phenyl ether	ND		5	1	04/17/09 18:13	GY	4992377
4-Nitroaniline	ND		25	1	04/17/09 18:13	GY	4992377
4-Nitrophenol	ND		25	1	04/17/09 18:13	GY	4992377
Acenaphthene	ND		5	1	04/17/09 18:13	GY	4992377
Acenaphthylene	ND		5	1	04/17/09 18:13	GY	4992377
Aniline	ND		5	1	04/17/09 18:13	GY	4992377
Anthracene	ND		5	1	04/17/09 18:13	GY	4992377
Benz(a)anthracene	ND		5	1	04/17/09 18:13	GY	4992377
Benzo(a)pyrene	ND		5	1	04/17/09 18:13	GY	4992377
Benzo(b)fluoranthene	ND		5	1	04/17/09 18:13	GY	4992377
Benzo(g,h,i)perylene	ND		5	1	04/17/09 18:13	GY	4992377
Benzo(k)fluoranthene	ND		5	1	04/17/09 18:13	GY	4992377
Benzoic acid	ND		25	1	04/17/09 18:13	GY	4992377
Benzyl alcohol	ND		5	1	04/17/09 18:13	GY	4992377
Bis(2-chloroethoxy)methane	ND		5	1	04/17/09 18:13	GY	4992377
Bis(2-chloroethyl)ether	ND		5	1	04/17/09 18:13	GY	4992377

Qualifiers:

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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: ERB-4-8-09 **Collected:** 04/08/2009 12:03 **SPL Sample ID:** 09040326-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		5	1	04/17/09 18:13	GY	4992377
Bis(2-ethylhexyl)phthalate	ND		5	1	04/17/09 18:13	GY	4992377
Butyl benzyl phthalate	ND		5	1	04/17/09 18:13	GY	4992377
Carbazole	ND		5	1	04/17/09 18:13	GY	4992377
Chrysene	ND		5	1	04/17/09 18:13	GY	4992377
Dibenz(a,h)anthracene	ND		5	1	04/17/09 18:13	GY	4992377
Dibenzofuran	ND		5	1	04/17/09 18:13	GY	4992377
Diethyl phthalate	ND		5	1	04/17/09 18:13	GY	4992377
Dimethyl phthalate	ND		5	1	04/17/09 18:13	GY	4992377
Di-n-butyl phthalate	ND		5	1	04/17/09 18:13	GY	4992377
Di-n-octyl phthalate	ND		5	1	04/17/09 18:13	GY	4992377
Fluoranthene	ND		5	1	04/17/09 18:13	GY	4992377
Fluorene	ND		5	1	04/17/09 18:13	GY	4992377
Hexachlorobenzene	ND		5	1	04/17/09 18:13	GY	4992377
Hexachlorobutadiene	ND		5	1	04/17/09 18:13	GY	4992377
Hexachlorocyclopentadiene	ND		5	1	04/17/09 18:13	GY	4992377
Hexachloroethane	ND		5	1	04/17/09 18:13	GY	4992377
Indeno(1,2,3-cd)pyrene	ND		5	1	04/17/09 18:13	GY	4992377
Isophorone	ND		5	1	04/17/09 18:13	GY	4992377
Naphthalene	ND		5	1	04/17/09 18:13	GY	4992377
Nitrobenzene	ND		5	1	04/17/09 18:13	GY	4992377
N-Nitrosodi-n-propylamine	ND		5	1	04/17/09 18:13	GY	4992377
N-Nitrosodiphenylamine	ND		5	1	04/17/09 18:13	GY	4992377
Pentachlorophenol	ND		25	1	04/17/09 18:13	GY	4992377
Phenanthrene	ND		5	1	04/17/09 18:13	GY	4992377
Phenol	ND		5	1	04/17/09 18:13	GY	4992377
Pyrene	ND		5	1	04/17/09 18:13	GY	4992377
Pyridine	ND		5	1	04/17/09 18:13	GY	4992377
2-Methylphenol	ND		5	1	04/17/09 18:13	GY	4992377
3 & 4-Methylphenol	ND		5	1	04/17/09 18:13	GY	4992377
Surr: 2,4,6-Tribromophenol	106		% 10-123	1	04/17/09 18:13	GY	4992377
Surr: 2-Fluorobiphenyl	80.6		% 23-116	1	04/17/09 18:13	GY	4992377
Surr: 2-Fluorophenol	72.8		% 16-110	1	04/17/09 18:13	GY	4992377
Surr: Nitrobenzene-d5	81.6		% 21-114	1	04/17/09 18:13	GY	4992377
Surr: Phenol-d5	51.3		% 10-110	1	04/17/09 18:13	GY	4992377
Surr: Terphenyl-d14	80.8		% 22-141	1	04/17/09 18:13	GY	4992377

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 8:15	N_M	1.00

Qualifiers:

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: ERB-4-8-09 **Collected:** 04/08/2009 12:03 **SPL Sample ID:** 09040326-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/14/09 22:46	JC	4990091
1,1,1-Trichloroethane	ND		5	1	04/14/09 22:46	JC	4990091
1,1,2,2-Tetrachloroethane	ND		5	1	04/14/09 22:46	JC	4990091
1,1,2-Trichloroethane	ND		5	1	04/14/09 22:46	JC	4990091
1,1-Dichloroethane	ND		5	1	04/14/09 22:46	JC	4990091
1,1-Dichloroethene	ND		5	1	04/14/09 22:46	JC	4990091
1,1-Dichloropropene	ND		5	1	04/14/09 22:46	JC	4990091
1,2,3-Trichlorobenzene	ND		5	1	04/14/09 22:46	JC	4990091
1,2,3-Trichloropropane	ND		5	1	04/14/09 22:46	JC	4990091
1,2,4-Trichlorobenzene	ND		5	1	04/14/09 22:46	JC	4990091
1,2,4-Trimethylbenzene	ND		5	1	04/14/09 22:46	JC	4990091
1,2-Dibromo-3-chloropropane	ND		5	1	04/14/09 22:46	JC	4990091
1,2-Dibromoethane	ND		5	1	04/14/09 22:46	JC	4990091
1,2-Dichlorobenzene	ND		5	1	04/14/09 22:46	JC	4990091
1,2-Dichloroethane	ND		5	1	04/14/09 22:46	JC	4990091
1,2-Dichloropropane	ND		5	1	04/14/09 22:46	JC	4990091
1,3,5-Trimethylbenzene	ND		5	1	04/14/09 22:46	JC	4990091
1,3-Dichlorobenzene	ND		5	1	04/14/09 22:46	JC	4990091
1,3-Dichloropropane	ND		5	1	04/14/09 22:46	JC	4990091
1,4-Dichlorobenzene	ND		5	1	04/14/09 22:46	JC	4990091
2,2-Dichloropropane	ND		5	1	04/14/09 22:46	JC	4990091
2-Butanone	ND		20	1	04/14/09 22:46	JC	4990091
2-Chloroethyl vinyl ether	ND	J	10	1	04/14/09 22:46	JC	4990091
2-Chlorotoluene	ND		5	1	04/14/09 22:46	JC	4990091
2-Hexanone	ND		10	1	04/14/09 22:46	JC	4990091
4-Chlorotoluene	ND		5	1	04/14/09 22:46	JC	4990091
4-Isopropyltoluene	ND		5	1	04/14/09 22:46	JC	4990091
4-Methyl-2-pentanone	ND		10	1	04/14/09 22:46	JC	4990091
Acetone	ND		20	1	04/14/09 22:46	JC	4990091
Acrylonitrile	ND		10	1	04/14/09 22:46	JC	4990091
Benzene	ND		5	1	04/14/09 22:46	JC	4990091
Bromobenzene	ND		5	1	04/14/09 22:46	JC	4990091
Bromochloromethane	ND		5	1	04/14/09 22:46	JC	4990091
Bromodichloromethane	ND		5	1	04/14/09 22:46	JC	4990091
Bromoform	ND		5	1	04/14/09 22:46	JC	4990091
Bromomethane	ND		10	1	04/14/09 22:46	JC	4990091
Carbon disulfide	ND		5	1	04/14/09 22:46	JC	4990091
Carbon tetrachloride	ND		5	1	04/14/09 22:46	JC	4990091
Chlorobenzene	ND		5	1	04/14/09 22:46	JC	4990091

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: ERB-4-8-09 **Collected:** 04/08/2009 12:03 **SPL Sample ID:** 09040326-01

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	04/14/09 22:46	JC	4990091
Chloroform	ND		5	1	04/14/09 22:46	JC	4990091
Chloromethane	ND		10	1	04/14/09 22:46	JC	4990091
Dibromochloromethane	ND		5	1	04/14/09 22:46	JC	4990091
Dibromomethane	ND		5	1	04/14/09 22:46	JC	4990091
Dichlorodifluoromethane	ND		10	1	04/14/09 22:46	JC	4990091
Ethylbenzene	ND		5	1	04/14/09 22:46	JC	4990091
Hexachlorobutadiene	ND		5	1	04/14/09 22:46	JC	4990091
Isopropylbenzene	ND		5	1	04/14/09 22:46	JC	4990091
Methyl tert-butyl ether	ND		5	1	04/14/09 22:46	JC	4990091
Methylene chloride	ND		5	1	04/14/09 22:46	JC	4990091
Naphthalene	ND		5	1	04/14/09 22:46	JC	4990091
n-Butylbenzene	ND		5	1	04/14/09 22:46	JC	4990091
n-Propylbenzene	ND		5	1	04/14/09 22:46	JC	4990091
sec-Butylbenzene	ND		5	1	04/14/09 22:46	JC	4990091
Styrene	ND		5	1	04/14/09 22:46	JC	4990091
tert-Butylbenzene	ND		5	1	04/14/09 22:46	JC	4990091
Tetrachloroethene	ND		5	1	04/14/09 22:46	JC	4990091
Toluene	ND		5	1	04/14/09 22:46	JC	4990091
Trichloroethene	ND		5	1	04/14/09 22:46	JC	4990091
Trichlorofluoromethane	ND		5	1	04/14/09 22:46	JC	4990091
Vinyl acetate	ND		10	1	04/14/09 22:46	JC	4990091
Vinyl chloride	ND		2	1	04/14/09 22:46	JC	4990091
cis-1,2-Dichloroethene	ND		5	1	04/14/09 22:46	JC	4990091
cis-1,3-Dichloropropene	ND		5	1	04/14/09 22:46	JC	4990091
m,p-Xylene	ND		5	1	04/14/09 22:46	JC	4990091
o-Xylene	ND		5	1	04/14/09 22:46	JC	4990091
trans-1,2-Dichloroethene	ND		5	1	04/14/09 22:46	JC	4990091
trans-1,3-Dichloropropene	ND		5	1	04/14/09 22:46	JC	4990091
1,2-Dichloroethene (total)	ND		5	1	04/14/09 22:46	JC	4990091
Xylenes,Total	ND		5	1	04/14/09 22:46	JC	4990091
Surr: 1,2-Dichloroethane-d4	100		% 70-120	1	04/14/09 22:46	JC	4990091
Surr: 4-Bromofluorobenzene	108		% 75-120	1	04/14/09 22:46	JC	4990091
Surr: Toluene-d8	86.0		% 85-120	1	04/14/09 22:46	JC	4990091

Qualifiers:

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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: ERB-4-9-09 **Collected:** 04/09/2009 10:16 **SPL Sample ID:** 09040326-02

Site: Hobbs NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND			0.1	1	04/13/09 20:39	CLJ	4984680
Surr: 1,4-Difluorobenzene	92.3		%	60-155	1	04/13/09 20:39	CLJ	4984680
Surr: 4-Bromofluorobenzene	105		%	50-158	1	04/13/09 20:39	CLJ	4984680
SEMIVOLATILE HYDROCARBONS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics	0.2			0.1	1	04/17/09 1:41	NW	4987518
Mineral Spirits Range Organics	ND			0.1	1	04/17/09 1:41	NW	4987518
Surr: n-Pentacosane	54.2		%	20-150	1	04/17/09 1:41	NW	4987518

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 14:10	N_M	1.00

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: ERB-4-9-09 **Collected:** 04/09/2009 10:16 **SPL Sample ID:** 09040326-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	04/22/09 17:36	GY	4993776
1,2-Dichlorobenzene	ND		5	1	04/22/09 17:36	GY	4993776
1,2-Diphenylhydrazine	ND		10	1	04/22/09 17:36	GY	4993776
1,3-Dichlorobenzene	ND		5	1	04/22/09 17:36	GY	4993776
1,4-Dichlorobenzene	ND		5	1	04/22/09 17:36	GY	4993776
2,4,5-Trichlorophenol	ND		10	1	04/22/09 17:36	GY	4993776
2,4,6-Trichlorophenol	ND		5	1	04/22/09 17:36	GY	4993776
2,4-Dichlorophenol	ND		5	1	04/22/09 17:36	GY	4993776
2,4-Dimethylphenol	ND		5	1	04/22/09 17:36	GY	4993776
2,4-Dinitrophenol	ND		25	1	04/22/09 17:36	GY	4993776
2,4-Dinitrotoluene	ND		5	1	04/22/09 17:36	GY	4993776
2,6-Dinitrotoluene	ND		5	1	04/22/09 17:36	GY	4993776
2-Chloronaphthalene	ND		5	1	04/22/09 17:36	GY	4993776
2-Chlorophenol	ND		5	1	04/22/09 17:36	GY	4993776
2-Methylnaphthalene	ND		5	1	04/22/09 17:36	GY	4993776
2-Nitroaniline	ND		25	1	04/22/09 17:36	GY	4993776
2-Nitrophenol	ND		5	1	04/22/09 17:36	GY	4993776
3,3´-Dichlorobenzidine	ND		10	1	04/22/09 17:36	GY	4993776
3-Nitroaniline	ND		25	1	04/22/09 17:36	GY	4993776
4,6-Dinitro-2-methylphenol	ND		25	1	04/22/09 17:36	GY	4993776
4-Bromophenyl phenyl ether	ND		5	1	04/22/09 17:36	GY	4993776
4-Chloro-3-methylphenol	ND		5	1	04/22/09 17:36	GY	4993776
4-Chloroaniline	ND		5	1	04/22/09 17:36	GY	4993776
4-Chlorophenyl phenyl ether	ND		5	1	04/22/09 17:36	GY	4993776
4-Nitroaniline	ND		25	1	04/22/09 17:36	GY	4993776
4-Nitrophenol	ND		25	1	04/22/09 17:36	GY	4993776
Acenaphthene	ND		5	1	04/22/09 17:36	GY	4993776
Acenaphthylene	ND		5	1	04/22/09 17:36	GY	4993776
Aniline	ND		5	1	04/22/09 17:36	GY	4993776
Anthracene	ND		5	1	04/22/09 17:36	GY	4993776
Benz(a)anthracene	ND		5	1	04/22/09 17:36	GY	4993776
Benzo(a)pyrene	ND		5	1	04/22/09 17:36	GY	4993776
Benzo(b)fluoranthene	ND		5	1	04/22/09 17:36	GY	4993776
Benzo(g,h,i)perylene	ND		5	1	04/22/09 17:36	GY	4993776
Benzo(k)fluoranthene	ND		5	1	04/22/09 17:36	GY	4993776
Benzoic acid	ND		25	1	04/22/09 17:36	GY	4993776
Benzyl alcohol	ND		5	1	04/22/09 17:36	GY	4993776
Bis(2-chloroethoxy)methane	ND		5	1	04/22/09 17:36	GY	4993776
Bis(2-chloroethyl)ether	ND		5	1	04/22/09 17:36	GY	4993776

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
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TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: ERB-4-9-09 **Collected:** 04/09/2009 10:16 **SPL Sample ID:** 09040326-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		5		1	04/22/09 17:36	GY	4993776
Bis(2-ethylhexyl)phthalate	ND		5		1	04/22/09 17:36	GY	4993776
Butyl benzyl phthalate	ND		5		1	04/22/09 17:36	GY	4993776
Carbazole	ND		5		1	04/22/09 17:36	GY	4993776
Chrysene	ND		5		1	04/22/09 17:36	GY	4993776
Dibenz(a,h)anthracene	ND		5		1	04/22/09 17:36	GY	4993776
Dibenzofuran	ND		5		1	04/22/09 17:36	GY	4993776
Diethyl phthalate	ND		5		1	04/22/09 17:36	GY	4993776
Dimethyl phthalate	ND		5		1	04/22/09 17:36	GY	4993776
Di-n-butyl phthalate	ND		5		1	04/22/09 17:36	GY	4993776
Di-n-octyl phthalate	ND		5		1	04/22/09 17:36	GY	4993776
Fluoranthene	ND		5		1	04/22/09 17:36	GY	4993776
Fluorene	ND		5		1	04/22/09 17:36	GY	4993776
Hexachlorobenzene	ND		5		1	04/22/09 17:36	GY	4993776
Hexachlorobutadiene	ND		5		1	04/22/09 17:36	GY	4993776
Hexachlorocyclopentadiene	ND		5		1	04/22/09 17:36	GY	4993776
Hexachloroethane	ND		5		1	04/22/09 17:36	GY	4993776
Indeno(1,2,3-cd)pyrene	ND		5		1	04/22/09 17:36	GY	4993776
Isophorone	ND		5		1	04/22/09 17:36	GY	4993776
Naphthalene	ND		5		1	04/22/09 17:36	GY	4993776
Nitrobenzene	ND		5		1	04/22/09 17:36	GY	4993776
N-Nitrosodi-n-propylamine	ND		5		1	04/22/09 17:36	GY	4993776
N-Nitrosodiphenylamine	ND		5		1	04/22/09 17:36	GY	4993776
Pentachlorophenol	ND		25		1	04/22/09 17:36	GY	4993776
Phenanthrene	ND		5		1	04/22/09 17:36	GY	4993776
Phenol	ND		5		1	04/22/09 17:36	GY	4993776
Pyrene	ND		5		1	04/22/09 17:36	GY	4993776
Pyridine	ND		5		1	04/22/09 17:36	GY	4993776
2-Methylphenol	ND		5		1	04/22/09 17:36	GY	4993776
3 & 4-Methylphenol	ND		5		1	04/22/09 17:36	GY	4993776
Surr: 2,4,6-Tribromophenol	103		%	10-123	1	04/22/09 17:36	GY	4993776
Surr: 2-Fluorobiphenyl	78.4		%	23-116	1	04/22/09 17:36	GY	4993776
Surr: 2-Fluorophenol	73.9		%	16-110	1	04/22/09 17:36	GY	4993776
Surr: Nitrobenzene-d5	75.4		%	21-114	1	04/22/09 17:36	GY	4993776
Surr: Phenol-d5	54.7		%	10-110	1	04/22/09 17:36	GY	4993776
Surr: Terphenyl-d14	76.6		%	22-141	1	04/22/09 17:36	GY	4993776

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/13/2009 8:15	N_M	1.00

Qualifiers:

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: ERB-4-9-09 **Collected:** 04/09/2009 10:16 **SPL Sample ID:** 09040326-02

Site: Hobbs NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	04/14/09 23:13	JC	4985234
1,1,1-Trichloroethane	ND		5	1	04/14/09 23:13	JC	4985234
1,1,2,2-Tetrachloroethane	ND		5	1	04/14/09 23:13	JC	4985234
1,1,2-Trichloroethane	ND		5	1	04/14/09 23:13	JC	4985234
1,1-Dichloroethane	ND		5	1	04/14/09 23:13	JC	4985234
1,1-Dichloroethene	ND		5	1	04/14/09 23:13	JC	4985234
1,1-Dichloropropene	ND		5	1	04/14/09 23:13	JC	4985234
1,2,3-Trichlorobenzene	ND		5	1	04/14/09 23:13	JC	4985234
1,2,3-Trichloropropane	ND		5	1	04/14/09 23:13	JC	4985234
1,2,4-Trichlorobenzene	ND		5	1	04/14/09 23:13	JC	4985234
1,2,4-Trimethylbenzene	ND		5	1	04/14/09 23:13	JC	4985234
1,2-Dibromo-3-chloropropane	ND		5	1	04/14/09 23:13	JC	4985234
1,2-Dibromoethane	ND		5	1	04/14/09 23:13	JC	4985234
1,2-Dichlorobenzene	ND		5	1	04/14/09 23:13	JC	4985234
1,2-Dichloroethane	ND		5	1	04/14/09 23:13	JC	4985234
1,2-Dichloropropane	ND		5	1	04/14/09 23:13	JC	4985234
1,3,5-Trimethylbenzene	ND		5	1	04/14/09 23:13	JC	4985234
1,3-Dichlorobenzene	ND		5	1	04/14/09 23:13	JC	4985234
1,3-Dichloropropane	ND		5	1	04/14/09 23:13	JC	4985234
1,4-Dichlorobenzene	ND		5	1	04/14/09 23:13	JC	4985234
2,2-Dichloropropane	ND		5	1	04/14/09 23:13	JC	4985234
2-Butanone	ND		20	1	04/14/09 23:13	JC	4985234
2-Chloroethyl vinyl ether	ND J		10	1	04/14/09 23:13	JC	4985234
2-Chlorotoluene	ND		5	1	04/14/09 23:13	JC	4985234
2-Hexanone	ND		10	1	04/14/09 23:13	JC	4985234
4-Chlorotoluene	ND		5	1	04/14/09 23:13	JC	4985234
4-Isopropyltoluene	ND		5	1	04/14/09 23:13	JC	4985234
4-Methyl-2-pentanone	ND		10	1	04/14/09 23:13	JC	4985234
Acetone	ND		20	1	04/14/09 23:13	JC	4985234
Acrylonitrile	ND		10	1	04/14/09 23:13	JC	4985234
Benzene	ND		5	1	04/14/09 23:13	JC	4985234
Bromobenzene	ND		5	1	04/14/09 23:13	JC	4985234
Bromochloromethane	ND		5	1	04/14/09 23:13	JC	4985234
Bromodichloromethane	ND		5	1	04/14/09 23:13	JC	4985234
Bromoform	ND		5	1	04/14/09 23:13	JC	4985234
Bromomethane	ND		10	1	04/14/09 23:13	JC	4985234
Carbon disulfide	ND		5	1	04/14/09 23:13	JC	4985234
Carbon tetrachloride	ND		5	1	04/14/09 23:13	JC	4985234
Chlorobenzene	ND		5	1	04/14/09 23:13	JC	4985234

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: ERB-4-9-09 **Collected:** 04/09/2009 10:16 **SPL Sample ID:** 09040326-02

Site: Hobbs NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND			10	1	04/14/09 23:13	JC	4985234
Chloroform	ND			5	1	04/14/09 23:13	JC	4985234
Chloromethane	ND			10	1	04/14/09 23:13	JC	4985234
Dibromochloromethane	ND			5	1	04/14/09 23:13	JC	4985234
Dibromomethane	ND			5	1	04/14/09 23:13	JC	4985234
Dichlorodifluoromethane	ND			10	1	04/14/09 23:13	JC	4985234
Ethylbenzene	ND			5	1	04/14/09 23:13	JC	4985234
Hexachlorobutadiene	ND			5	1	04/14/09 23:13	JC	4985234
Isopropylbenzene	ND			5	1	04/14/09 23:13	JC	4985234
Methyl tert-butyl ether	ND			5	1	04/14/09 23:13	JC	4985234
Methylene chloride	ND			5	1	04/14/09 23:13	JC	4985234
Naphthalene	ND			5	1	04/14/09 23:13	JC	4985234
n-Butylbenzene	ND			5	1	04/14/09 23:13	JC	4985234
n-Propylbenzene	ND			5	1	04/14/09 23:13	JC	4985234
sec-Butylbenzene	ND			5	1	04/14/09 23:13	JC	4985234
Styrene	ND			5	1	04/14/09 23:13	JC	4985234
tert-Butylbenzene	ND			5	1	04/14/09 23:13	JC	4985234
Tetrachloroethene	ND			5	1	04/14/09 23:13	JC	4985234
Toluene	ND			5	1	04/14/09 23:13	JC	4985234
Trichloroethene	ND			5	1	04/14/09 23:13	JC	4985234
Trichlorofluoromethane	ND			5	1	04/14/09 23:13	JC	4985234
Vinyl acetate	ND			10	1	04/14/09 23:13	JC	4985234
Vinyl chloride	ND			2	1	04/14/09 23:13	JC	4985234
cis-1,2-Dichloroethene	ND			5	1	04/14/09 23:13	JC	4985234
cis-1,3-Dichloropropene	ND			5	1	04/14/09 23:13	JC	4985234
m,p-Xylene	ND			5	1	04/14/09 23:13	JC	4985234
o-Xylene	ND			5	1	04/14/09 23:13	JC	4985234
trans-1,2-Dichloroethene	ND			5	1	04/14/09 23:13	JC	4985234
trans-1,3-Dichloropropene	ND			5	1	04/14/09 23:13	JC	4985234
1,2-Dichloroethene (total)	ND			5	1	04/14/09 23:13	JC	4985234
Xylenes,Total	ND			5	1	04/14/09 23:13	JC	4985234
Surr: 1,2-Dichloroethane-d4	96.0		%	65-111	1	04/14/09 23:13	JC	4985234
Surr: 4-Bromofluorobenzene	108		%	87-120	1	04/14/09 23:13	JC	4985234
Surr: Toluene-d8	92.0		%	88-116	1	04/14/09 23:13	JC	4985234

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Hydrocarbons **WorkOrder:** 09040326
Method: SW8015B **Lab Batch ID:** 89427

Method Blank

RunID: HP_V_090416B-4987505 Units: mg/L
Analysis Date: 04/14/2009 23:43 Analyst: NW
Preparation Date: 04/13/2009 14:10 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040326-01D	ERB-4-8-09
09040326-02D	ERB-4-9-09

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.10
Mineral Spirits Range Organics	ND	0.10
Surr: n-Pentacosane	51.2	20-150

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HP_V_090416B-4987506 Units: mg/L
Analysis Date: 04/15/2009 0:03 Analyst: NW
Preparation Date: 04/13/2009 14:10 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics	1.00	0.895	89.5	1.00	0.880	88.0	1.7	40	21	150
Surr: n-Pentacosane	0.0500	0.0494	98.8	0.0500	0.0485	97.0	1.8	30	20	150

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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HOUSTON LABORATORY
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Gasoline Range Organics
Method: SW8015B
WorkOrder: 09040326
Lab Batch ID: R270269

Method Blank

RunID: HP_P_090413A-4984662 Units: mg/L
Analysis Date: 04/13/2009 5:20 Analyst: CLJ

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040326-01B	ERB-4-8-09
09040326-02B	ERB-4-9-09

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	91.5	60-155
Surr: 4-Bromofluorobenzene	104.0	50-158

Laboratory Control Sample (LCS)

RunID: HP_P_090413A-4984660 Units: mg/L
Analysis Date: 04/13/2009 4:22 Analyst: CLJ

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	0.859	85.9	42	136
Surr: 1,4-Difluorobenzene	0.100	0.0949	94.9	60	155
Surr: 4-Bromofluorobenzene	0.100	0.108	108	50	158

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040343-01
RunID: HP_P_090413A-4984664 Units: mg/L
Analysis Date: 04/13/2009 10:44 Analyst: CLJ

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	1	0.852	85.2	1	0.868	86.8	1.92	36	22	174
Surr: 1,4-Difluorobenzene	ND	0.1	0.0922	92.2	0.1	0.0932	93.2	1.08	30	60	155
Surr: 4-Bromofluorobenzene	ND	0.1	0.105	105	0.1	0.107	107	1.41	30	50	158

Qualifiers:

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N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040326
Method: SW8270C **Lab Batch ID:** 89412

Method Blank

RunID: H_090417E-4992370 Units: ug/L
Analysis Date: 04/17/2009 9:40 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040326-01C	ERB-4-8-09
09040326-02C	ERB-4-9-09

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Diphenylhydrazine	ND	10
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,4,5-Trichlorophenol	ND	10
2,4,6-Trichlorophenol	ND	5.0
2,4-Dichlorophenol	ND	5.0
2,4-Dimethylphenol	ND	5.0
2,4-Dinitrophenol	ND	25
2,4-Dinitrotoluene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Chlorophenol	ND	5.0
2-Methylnaphthalene	ND	5.0
2-Nitroaniline	ND	25
2-Nitrophenol	ND	5.0
3,3'-Dichlorobenzidine	ND	10
3-Nitroaniline	ND	25
4,6-Dinitro-2-methylphenol	ND	25
4-Bromophenyl phenyl ether	ND	5.0
4-Chloro-3-methylphenol	ND	5.0
4-Chloroaniline	ND	5.0
4-Chlorophenyl phenyl ether	ND	5.0
4-Nitroaniline	ND	25
4-Nitrophenol	ND	25
Acenaphthene	ND	5.0
Acenaphthylene	ND	5.0
Aniline	ND	5.0
Anthracene	ND	5.0
Benz(a)anthracene	ND	5.0
Benzo(a)pyrene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzoic acid	ND	25
Benzyl alcohol	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Butyl benzyl phthalate	ND	5.0
Carbazole	ND	5.0
Chrysene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Dibenzofuran	ND	5.0

Qualifiers:

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E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040326
Method: SW8270C **Lab Batch ID:** 89412

Method Blank

RunID: H_090417E-4992370 Units: ug/L
Analysis Date: 04/17/2009 9:40 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	5.0
Dimethyl phthalate	ND	5.0
Di-n-butyl phthalate	ND	5.0
Di-n-octyl phthalate	ND	5.0
Fluoranthene	ND	5.0
Fluorene	ND	5.0
Hexachlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
Hexachloroethane	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Isophorone	ND	5.0
Naphthalene	ND	5.0
Nitrobenzene	ND	5.0
N-Nitrosodi-n-propylamine	ND	5.0
N-Nitrosodiphenylamine	ND	5.0
Pentachlorophenol	ND	25
Phenanthrene	ND	5.0
Phenol	ND	5.0
Pyrene	ND	5.0
Pyridine	ND	5.0
2-Methylphenol	ND	5.0
3 & 4-Methylphenol	ND	5.0
Surr: 2,4,6-Tribromophenol	95.2	10-123
Surr: 2-Fluorobiphenyl	72.6	23-116
Surr: 2-Fluorophenol	76.1	16-110
Surr: Nitrobenzene-d5	68.4	21-114
Surr: Phenol-d5	62.5	10-110
Surr: Terphenyl-d14	68.4	22-141

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2,4-Trichlorobenzene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	39	21	120
1,2-Dichlorobenzene	25.0	15.4	61.6	25.0	16.7	66.8	8.1	50	20	150

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09040326
Method: SW8270C **Lab Batch ID:** 89412

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_090417E-4992371 Units: ug/L
Analysis Date: 04/17/2009 10:42 Analyst: GY
Preparation Date: 04/13/2009 8:15 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Diphenylhydrazine	25.0	16.5	66.0	25.0	17.6	70.4	6.5	50	10	251
1,3-Dichlorobenzene	25.0	15.4	61.6	25.0	16.5	66.0	6.9	50	20	150
1,4-Dichlorobenzene	25.0	15.3	61.2	25.0	16.2	64.8	5.7	45	20	150
2,4,5-Trichlorophenol	25.0	14.9	59.6	25.0	15.4	61.6	3.3	50	30	150
2,4,6-Trichlorophenol	25.0	15.2	60.8	25.0	16.0	64.0	5.1	50	30	150
2,4-Dichlorophenol	25.0	14.5	58.0	25.0	15.9	63.6	9.2	50	30	150
2,4-Dimethylphenol	25.0	15.4	61.6	25.0	16.0	64.0	3.8	50	32	140
2,4-Dinitrophenol	25.0	11.9	47.6	25.0	12.8	51.2	7.3	50	10	160
2,4-Dinitrotoluene	25.0	16.1	64.4	25.0	16.3	65.2	1.2	50	30	150
2,6-Dinitrotoluene	25.0	15.8	63.2	25.0	15.7	62.8	0.6	50	30	150
2-Chloronaphthalene	25.0	15.8	63.2	25.0	16.5	66.0	4.3	50	30	150
2-Chlorophenol	25.0	15.4	61.6	25.0	15.9	63.6	3.2	40	23	134
2-Methylnaphthalene	25.0	15.1	60.4	25.0	15.9	63.6	5.2	50	20	170
2-Nitroaniline	25.0	14.8	59.2	25.0	15.9	63.6	7.2	50	20	160
2-Nitrophenol	25.0	14.9	59.6	25.0	15.8	63.2	5.9	50	29	182
3,3'-Dichlorobenzidine	25.0	13.3	53.2	25.0	13.7	54.8	3.0	50	30	200
3-Nitroaniline	25.0	14.4	57.6	25.0	14.8	59.2	2.7	50	20	160
4,6-Dinitro-2-methylphenol	25.0	13.7	54.8	25.0	14.2	56.8	3.6	50	10	160
4-Bromophenyl phenyl ether	25.0	15.6	62.4	25.0	15.8	63.2	1.3	50	30	150
4-Chloro-3-methylphenol	25.0	15.2	60.8	25.0	16.1	64.4	5.8	42	25	160
4-Chloroaniline	25.0	15.5	62.0	25.0	16.2	64.8	4.4	50	20	160
4-Chlorophenyl phenyl ether	25.0	15.7	62.8	25.0	16.3	65.2	3.8	50	25	158
4-Nitroaniline	25.0	13.9	55.6	25.0	14.8	59.2	6.3	50	20	160
4-Nitrophenol	25.0	13.0	52.0	25.0	14.8	59.2	12.9	50	10	132
Acenaphthene	25.0	15.3	61.2	25.0	16.3	65.2	6.3	31	30	150
Acenaphthylene	25.0	15.4	61.6	25.0	16.4	65.6	6.3	50	33	250
Aniline	50.0	29.9	59.8	50.0	30.9	61.8	3.3	50	10	135
Anthracene	25.0	15.6	62.4	25.0	16.5	66.0	5.6	50	27	133
Benz(a)anthracene	25.0	15.6	62.4	25.0	16.4	65.6	5.0	50	33	143
Benzo(a)pyrene	25.0	12.2	48.8	25.0	12.7	50.8	4.0	50	17	163
Benzo(b)fluoranthene	25.0	14.9	59.6	25.0	15.2	60.8	2.0	50	24	159
Benzo(g,h,i)perylene	25.0	15.7	62.8	25.0	15.9	63.6	1.3	50	30	160
Benzo(k)fluoranthene	25.0	15.0	60.0	25.0	15.2	60.8	1.3	50	11	162

Qualifiers:

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E - Estimated Value exceeds calibration curve
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis:	**Semivolatile Organics by Method 8270C**	**WorkOrder:**	**09040326**
Method:	**SW8270C**	**Lab Batch ID:**	**89412**

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID:	H_090417E-4992371	Units:	ug/L
Analysis Date:	04/17/2009 10:42	Analyst:	GY
Preparation Date:	04/13/2009 8:15	Prep By:	N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzoic acid	25.0	15.7	62.8	25.0	16.0	64.0	1.9	50	10	400
Benzyl alcohol	25.0	14.7	58.8	25.0	16.2	64.8	9.7	50	30	160
Bis(2-chloroethoxy)methane	25.0	15.2	60.8	25.0	15.8	63.2	3.9	50	33	184
Bis(2-chloroethyl)ether	25.0	15.8	63.2	25.0	16.7	66.8	5.5	50	12	158
Bis(2-chloroisopropyl)ether	25.0	15.6	62.4	25.0	16.1	64.4	3.2	50	20	160
Bis(2-ethylhexyl)phthalate	25.0	16.1	64.4	25.0	17.0	68.0	5.4	50	10	158
Butyl benzyl phthalate	25.0	16.3	65.2	25.0	17.0	68.0	4.2	50	30	160
Carbazole	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	30	150
Chrysene	25.0	15.0	60.0	25.0	16.0	64.0	6.5	50	17	168
Dibenz(a,h)anthracene	25.0	15.5	62.0	25.0	15.7	62.8	1.3	50	30	160
Dibenzofuran	25.0	15.7	62.8	25.0	16.4	65.6	4.4	50	30	150
Diethyl phthalate	25.0	16.0	64.0	25.0	17.1	68.4	6.6	50	30	160
Dimethyl phthalate	25.0	15.7	62.8	25.0	16.8	67.2	6.8	50	30	160
Di-n-butyl phthalate	25.0	16.6	66.4	25.0	17.1	68.4	3.0	50	30	160
Di-n-octyl phthalate	25.0	16.2	64.8	25.0	17.0	68.0	4.8	50	20	150
Fluoranthene	25.0	15.9	63.6	25.0	16.3	65.2	2.5	50	26	137
Fluorene	25.0	15.4	61.6	25.0	16.3	65.2	5.7	50	30	150
Hexachlorobenzene	25.0	15.4	61.6	25.0	16.6	66.4	7.5	50	20	150
Hexachlorobutadiene	25.0	15.0	60.0	25.0	15.9	63.6	5.8	50	20	140
Hexachlorocyclopentadiene	25.0	17.2	68.8	25.0	19.1	76.4	10.5	50	10	150
Hexachloroethane	25.0	15.0	60.0	25.0	16.3	65.2	8.3	50	14	120
Indeno(1,2,3-cd)pyrene	25.0	16.3	65.2	25.0	17.5	70.0	7.1	50	30	160
Isophorone	25.0	16.2	64.8	25.0	17.3	69.2	6.6	50	21	196
Naphthalene	25.0	15.4	61.6	25.0	16.2	64.8	5.1	50	21	133
Nitrobenzene	25.0	15.3	61.2	25.0	16.0	64.0	4.5	50	20	160
N-Nitrosodi-n-propylamine	25.0	15.6	62.4	25.0	15.4	61.6	1.3	38	30	160
N-Nitrosodiphenylamine	50.0	38.0	76.0	50.0	40.4	80.8	6.1	50	30	150
Pentachlorophenol	25.0	11.5	46.0	25.0	12.8	51.2	10.7	50	14	176
Phenanthrene	25.0	15.3	61.2	25.0	16.1	64.4	5.1	50	10	140
Phenol	25.0	15.2	60.8	25.0	15.8	63.2	3.9	42	40	132
Pyrene	25.0	15.8	63.2	25.0	16.6	66.4	4.9	38	30	150
Pyridine	50.0	27.0	54.0	50.0	29.4	58.8	8.5	50	10	150
2-Methylphenol	25.0	15.7	62.8	25.0	16.2	64.8	3.1	50	30	160

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis:	**Semivolatile Organics by Method 8270C**	**WorkOrder:**	**09040326**
Method:	**SW8270C**	**Lab Batch ID:**	**89412**

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID:	H_090417E-4992371	Units:	ug/L
Analysis Date:	04/17/2009 10:42	Analyst:	GY
Preparation Date:	04/13/2009 8:15	Prep By:	N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
3 & 4-Methylphenol	25.0	16.6	66.4	25.0	17.2	68.8	3.6	50	10	160
Surr: 2,4,6-Tribromophenol	75.0	61.1	81.5	75.0	60.8	81.1	0.5	30	10	123
Surr: 2-Fluorobiphenyl	50.0	28.6	57.2	50.0	29.5	59.0	3.1	30	23	116
Surr: 2-Fluorophenol	75.0	50.0	66.7	75.0	50.8	67.7	1.6	30	16	110
Surr: Nitrobenzene-d5	50.0	29.0	58.0	50.0	30.0	60.0	3.4	30	21	114
Surr: Phenol-d5	75.0	43.1	57.5	75.0	44.2	58.9	2.5	30	10	110
Surr: Terphenyl-d14	50.0	28.4	56.8	50.0	28.7	57.4	1.1	30	22	141

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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8880 INTERCHANGE DRIVE
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040326
Method: SW8260B **Lab Batch ID:** R270264

Method Blank

RunID: Q_090414A-4985214 Units: ug/L
Analysis Date: 04/14/2009 14:10 Analyst: JC
Preparation Date: 04/14/2009 14:10 Prep By: Method

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09040326-01A	ERB-4-8-09
09040326-02A	ERB-4-9-09

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	20
Acrylonitrile	ND	10
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
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TNTC - Too numerous to count
MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040326
Method: SW8260B **Lab Batch ID:** R270264

Method Blank

RunID: Q_090414A-4985214 Units: ug/L
Analysis Date: 04/14/2009 14:10 Analyst: JC
Preparation Date: 04/14/2009 14:10 Prep By: Method

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	2.0
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	98.0	65-111
Surr: 4-Bromofluorobenzene	108.0	87-120
Surr: Toluene-d8	92.0	88-116

Laboratory Control Sample (LCS)

RunID: Q_090414A-4985213 Units: ug/L
Analysis Date: 04/14/2009 13:43 Analyst: JC
Preparation Date: 04/14/2009 13:43 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	19.0	95.0	71	128
1,1,1-Trichloroethane	20.0	20.0	100	61	135
1,1,2,2-Tetrachloroethane	20.0	18.0	90.0	60	133
1,1,2-Trichloroethane	20.0	18.0	90.0	77	127
1,1-Dichloroethane	20.0	20.0	100	68	132

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis:	**Volatile Organics by Method 8260B**	**WorkOrder:**	**09040326**
Method:	**SW8260B**	**Lab Batch ID:**	**R270264**

Laboratory Control Sample (LCS)

RunID:	Q_090414A-4985213	Units:	ug/L
Analysis Date:	04/14/2009 13:43	Analyst:	JC
Preparation Date:	04/14/2009 13:43	Prep By:	Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	22.0	110	65	134
1,1-Dichloropropene	20.0	18.0	90.0	68	126
1,2,3-Trichlorobenzene	20.0	16.0	80.0	36	154
1,2,3-Trichloropropane	20.0	19.0	95.0	38	153
1,2,4-Trichlorobenzene	20.0	16.0	80.0	69	144
1,2,4-Trimethylbenzene	20.0	14.0	70.0	64	128
1,2-Dibromo-3-chloropropane	20.0	14.0	70.0	44	141
1,2-Dibromoethane	20.0	19.0	95.0	75	124
1,2-Dichlorobenzene	20.0	16.0	80.0	68	124
1,2-Dichloroethane	20.0	18.0	90.0	61	138
1,2-Dichloropropane	20.0	18.0	90.0	76	123
1,3,5-Trimethylbenzene	20.0	14.0	70.0	61	127
1,3-Dichlorobenzene	20.0	16.0	80.0	68	127
1,3-Dichloropropane	20.0	17.0	85.0	76	125
1,4-Dichlorobenzene	20.0	15.0	75.0	68	124
2,2-Dichloropropane	20.0	19.0	95.0	42	142
2-Butanone	20.0	20.0	100	22	183
2-Chloroethyl vinyl ether	20.0	18.0	90.0	10	179
2-Chlorotoluene	20.0	15.0	75.0	64	132
2-Hexanone	20.0	16.0	80.0	31	178
4-Chlorotoluene	20.0	15.0	75.0	61	132
4-Isopropyltoluene	20.0	14.0	70.0	63	136
4-Methyl-2-pentanone	20.0	16.0	80.0	10	159
Acetone	20.0	25.0	125	10	200
Acrylonitrile	20.0	20.0	100	54	155
Benzene	20.0	18.0	90.0	74	123
Bromobenzene	20.0	15.0	75.0	68	125
Bromochloromethane	20.0	21.0	105	71	124
Bromodichloromethane	20.0	19.0	95.0	72	128
Bromoform	20.0	19.0	95.0	81	135
Bromomethane	20.0	21.0	105	53	130
Carbon disulfide	20.0	27.0	135	41	143
Carbon tetrachloride	20.0	21.0	105	59	142
Chlorobenzene	20.0	18.0	90.0	75	125

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09040326
Lab Batch ID: R270264

Laboratory Control Sample (LCS)

RunID: Q_090414A-4985213 Units: ug/L
Analysis Date: 04/14/2009 13:43 Analyst: JC
Preparation Date: 04/14/2009 13:43 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	20.0	100	60	134
Chloroform	20.0	20.0	100	71	127
Chloromethane	20.0	16.0	80.0	50	139
Dibromochloromethane	20.0	18.0	90.0	65	130
Dibromomethane	20.0	20.0	100	79	124
Dichlorodifluoromethane	20.0	17.0	85.0	22	162
Ethylbenzene	20.0	17.0	85.0	72	127
Hexachlorobutadiene	20.0	16.0	80.0	45	152
Isopropylbenzene	20.0	15.0	75.0	58	130
Methyl tert-butyl ether	40.0	40.0	100	63	123
Methylene chloride	20.0	21.0	105	61	135
Naphthalene	20.0	16.0	80.0	33	148
n-Butylbenzene	20.0	14.0	70.0	62	136
n-Propylbenzene	20.0	14.0	70.0	57	131
sec-Butylbenzene	20.0	14.0	70.0	63	131
Styrene	20.0	17.0	85.0	69	120
tert-Butylbenzene	20.0	14.0	70.0	59	131
Tetrachloroethene	20.0	21.0	105	45	173
Toluene	20.0	17.0	85.0	74	126
Trichloroethene	20.0	20.0	100	79	131
Trichlorofluoromethane	20.0	23.0	115	49	153
Vinyl acetate	20.0	16.0	80.0	10	167
Vinyl chloride	20.0	20.0	100	51	148
cis-1,2-Dichloroethene	20.0	20.0	100	71	128
cis-1,3-Dichloropropene	20.0	17.0	85.0	67	128
m,p-Xylene	40.0	35.0	87.5	71	129
o-Xylene	20.0	18.0	90.0	74	130
trans-1,2-Dichloroethene	20.0	21.0	105	66	128
trans-1,3-Dichloropropene	20.0	16.0	80.0	60	128
1,2-Dichloroethene (total)	40	41	100	66	128
Xylenes,Total	60	53	88	71	130
Surr: 1,2-Dichloroethane-d4	50.0	48	96.0	65	111
Surr: 4-Bromofluorobenzene	50.0	56	112	87	120
Surr: Toluene-d8	50.0	46	92.0	88	116

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040326
Method: SW8260B **Lab Batch ID:** R270264

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	68	124
1,1,1-Trichloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	69	123
1,1,2,2-Tetrachloroethane	ND	20	20.0	100	20	20.0	100	0	20	69	130
1,1,2-Trichloroethane	ND	20	20.0	100	20	20.0	100	0	20	75	126
1,1-Dichloroethane	ND	20	21.0	105	20	20.0	100	4.88	20	65	129
1,1-Dichloroethene	ND	20	23.0	115	20	23.0	115	0	22	61	139
1,1-Dichloropropene	ND	20	21.0	105	20	20.0	100	4.88	20	69	121
1,2,3-Trichlorobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	53	127
1,2,3-Trichloropropane	ND	20	20.0	100	20	19.0	95.0	5.13	20	79	124
1,2,4-Trichlorobenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	58	118
1,2,4-Trimethylbenzene	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	43	132
1,2-Dibromo-3-chloropropane	ND	20	15.0	75.0	20	14.0	70.0	6.90	20	46	131
1,2-Dibromoethane	ND	20	20.0	100	20	20.0	100	0	20	76	122
1,2-Dichlorobenzene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	74	110
1,2-Dichloroethane	ND	20	18.0	90.0	20	18.0	90.0	0	20	60	129
1,2-Dichloropropane	ND	20	20.0	100	20	19.0	95.0	5.13	20	76	116
1,3,5-Trimethylbenzene	ND	20	15.0	75.0	20	14.0	70.0	6.90	20	51	121
1,3-Dichlorobenzene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	71	110
1,3-Dichloropropane	ND	20	19.0	95.0	20	18.0	90.0	5.41	20	80	119
1,4-Dichlorobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	69	110
2,2-Dichloropropane	ND	20	22.0	110	20	22.0	110	0	20	52	122
2-Butanone	ND	20	21.0	105	20	21.0	105	0	20	10	133
2-Chloroethyl vinyl ether	ND	20	0	0 *	20	0	0 *	0	20	10	182
2-Chlorotoluene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	69	112
2-Hexanone	ND	20	16.0	80.0	20	16.0	80.0	0	20	10	163
4-Chlorotoluene	ND	20	17.0	85.0	20	17.0	85.0	0	20	37	110
4-Isopropyltoluene	ND	20	16.0	80.0	20	16.0	80.0	0	20	65	116
4-Methyl-2-pentanone	ND	20	17.0	85.0	20	17.0	85.0	0	20	10	103
Acetone	ND	20	22.0	110	20	22.0	110	0	20	10	160
Acrylonitrile	ND	20	20.0	100	20	20.0	100	0	20	45	155

Qualifiers:

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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040326
Method: SW8260B **Lab Batch ID:** R270264

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	21.0	105	20	20.0	100	4.88	22	70	124
Bromobenzene	ND	20	17.0	85.0	20	17.0	85.0	0	20	72	111
Bromochloromethane	ND	20	25.0	125	20	24.0	120	4.08	20	73	126
Bromodichloromethane	ND	20	20.0	100	20	18.0	90.0	10.5	20	68	125
Bromoform	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	44	132
Bromomethane	ND	20	23.0	115	20	21.0	105	9.09	20	50	140
Carbon disulfide	ND	20	21.0	105	20	20.0	100	4.88	20	46	143
Carbon tetrachloride	ND	20	20.0	100	20	20.0	100	0	20	66	126
Chlorobenzene	ND	20	21.0	105	20	20.0	100	4.88	21	68	123
Chloroethane	ND	20	22.0	110	20	21.0	105	4.65	20	59	134
Chloroform	ND	20	21.0	105	20	20.0	100	4.88	20	68	127
Chloromethane	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	51	137
Dibromochloromethane	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	58	131
Dibromomethane	ND	20	22.0	110	20	20.0	100	9.52	20	82	123
Dichlorodifluoromethane	ND	20	16.0	80.0	20	17.0	85.0	6.06	20	35	143
Ethylbenzene	ND	20	20.0	100	20	19.0	95.0	5.13	20	76	122
Hexachlorobutadiene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	43	137
Isopropylbenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	57	124
Methyl tert-butyl ether	ND	40	43.0	108	40	42.0	105	2.35	20	10	200
Methylene chloride	ND	20	23.0	115	20	22.0	110	4.44	20	70	134
Naphthalene	ND	20	16.0	80.0	20	16.0	80.0	0	20	42	140
n-Butylbenzene	ND	20	16.0	80.0 *	20	16.0	80.0 *	0	20	82	112
n-Propylbenzene	ND	20	16.0	80.0	20	16.0	80.0	0	20	73	108
sec-Butylbenzene	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	76	110
Styrene	ND	20	18.0	90.0	20	17.0	85.0	5.71	20	58	152
tert-Butylbenzene	ND	20	15.0	75.0	20	15.0	75.0	0	20	66	120
Tetrachloroethene	ND	20	25.0	125	20	25.0	125	0	20	71	130
Toluene	ND	20	20.0	100	20	20.0	100	0	24	80	117
Trichloroethene	ND	20	23.0	115	20	22.0	110	4.44	21	82	121
Trichlorofluoromethane	ND	20	21.0	105	20	21.0	105	0	20	74	138
Vinyl acetate	ND	20	18.0	90.0	20	18.0	90.0	0	20	66	135
Vinyl chloride	ND	20	20.0	100	20	19.0	95.0	5.13	20	45	143

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
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Quality Control Report

Brown & Caldwell

Fracmaster BJ Service,#128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09040326
Method: SW8260B **Lab Batch ID:** R270264

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09040281-03
RunID: Q_090414A-4985222 Units: ug/L
Analysis Date: 04/14/2009 17:46 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	20	25.0	125	20	23.0	115	8.33	20	67	132
cis-1,3-Dichloropropene	ND	20	18.0	90.0	20	16.0	80.0	11.8	20	67	116
m,p-Xylene	ND	40	40.0	100	40	38.0	95.0	5.13	20	69	127
o-Xylene	ND	20	21.0	105	20	20.0	100	4.88	20	84	114
trans-1,2-Dichloroethene	ND	20	24.0	120	20	23.0	115	4.26	20	68	131
trans-1,3-Dichloropropene	ND	20	16.0	80.0	20	15.0	75.0	6.45	20	56	131
1,2-Dichloroethene (total)	ND	40	49	120	40	46	120	6.3	20	67	132
Xylenes,Total	ND	60	61	100	60	58	97	5.0	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	50	49	98.0	50	49.0	98.0	0	30	65	111
Surr: 4-Bromofluorobenzene	ND	50	53	106	50	54.0	108	1.87	30	87	120
Surr: Toluene-d8	ND	50	47	94.0	50	48.0	96.0	2.11	30	88	116

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist
And
Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**09040326**	Received By:	**BF**
Date and Time Received:	**4/10/2009 10:00:00 AM**	Carrier name:	**FedEx**
Temperature:	**3.0°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes	☑	No	☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes	☑	No	☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes	☐	No	☐	Not Present ☑
4.	**Chain of custody present?**	Yes	☑	No	☐	
5.	**Chain of custody signed when relinquished and received?**	Yes	☑	No	☐	
6.	**Chain of custody agrees with sample labels?**	Yes	☑	No	☐	
7.	**Samples in proper container/bottle?**	Yes	☑	No	☐	
8.	**Sample containers intact?**	Yes	☑	No	☐	
9.	**Sufficient sample volume for indicated test?**	Yes	☑	No	☐	
10.	**All samples received within holding time?**	Yes	☑	No	☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes	☑	No	☐	
12.	**Water - VOA vials have zero headspace?**	Yes	☐	No	☐	VOA Vials Not Present ☑
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes	☐	No	☐	Not Applicable ☑

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No. 322333
0904 0326
page 1 of 1

Client Name: Brown and Caldwell
Address: 1415 Louisiana #2500
City Houston State TX Zip 77002
Phone/Fax: 713-759-0999 / 713-308-3886
Client Contact: R. Rexroad Email: RRexroad@BrwnCald.com
Project Name/No.: 128125 BJ Services
Site Name: FRACMASTER
Site Location: Hobbs, NM
Invoice To: R. Rexroad Ph: 713-646-1129

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: VOCs (8260)	SVOCs (8270)	TPH - DRO/MO (8015)
ERB-4-8-09	4-8-09	1203		X	W	VA	40/1	Lab	10	X	X	X
ERB-4-9-09	4-9-09	1016		X	W	VA	40/1	Lab	10	X	X	X

RUSH

Client/Consultant Remarks:

Laboratory remarks:

Intact? Y N
Ice? Y N
Temp: 3.0c

Requested TAT
- ☐ 1 Business Day
- ☐ 2 Business Days
- ☐ 3 Business Days
- ☐ Contract
- ☒ Standard
- ☐ Other _____

Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☒ PDF ☐
Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial): MK

	date	time	
1. Relinquished by Sampler: R Rexroad	4/9/09	1200	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	4/10/09	1000	6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09050091

Report To:		Project Name:	BJ-Fracmaster 128125
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	6/12/2009
ph: (713) 759-0999	fax:		

This Report Contains A Total Of 67 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

6/12/2009

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09050091

Report To:		Project Name:	BJ-Fracmaster 128125
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	6/12/2009
ph: (713) 759-0999	fax:		

REVISED REPORT: This report is revised to include Mineral Spiris by Method 8015B per your request.

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 89962 for the Semivolatile hydrocarbons analysis by Method 8015B. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.
Volatile Organics:

Your sample ID "MW-4-52-55" (SPL ID:09050091-01) was randomly selected for use in SPL's quality control program for the Semivolatile Organics analysis by SW846 Method 8270C (Batch ID:90048). The Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) recoveries were outside of the advisable quality control limits due to possible matrix interference for the following analytes:

2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dinitrophenol
4,6-Dinitro-2-methylphenol
Benzoic Acid
Cxarbazole
Dibenzofuran
Di-n-butyl phthalate
Fluorene
Pentachlorophenol
Phenanthrene
Phenol
3 & 4-Methylphenol

A Laboratory Control Sample (LCS) was analyzed as a quality control check for the analytical batch and all recoveries were within acceptable limits.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Agnes V. Vicknair

6/12/2009

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09050091

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Agnes V. Vicknair

Agnes V. Vicknair
Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

6/12/2009
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09050091

Report To:	Brown & Caldwell Rick Rexroad 1415 Louisiana Suite 2500 Houston TX 77002- ph: (713) 759-0999 fax: (713) 308-3886	**Project Name:**	BJ-Fracmaster 128125
		Site:	Hobbs, NM
		Site Address:	
		PO Number:	
		State:	New Mexico
		State Cert. No.:	
Fax To:		**Date Reported:**	6/12/2009

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-4-52-55	09050091-01	Soil	5/2/2009 7:15:00 AM	5/4/2009 9:30:00 AM	322327	☐
MW-4	09050091-02	Water	5/2/2009 12:00:00 PM	5/4/2009 9:30:00 AM	322327	☐
RB-050209-1	09050091-03	Water	5/2/2009 12:10:00 PM	5/4/2009 9:30:00 AM	322326	☐
FB-050209-1	09050091-04	Water	5/2/2009 12:15:00 PM	5/4/2009 9:30:00 AM	322326	☐
TB-050209-1	09050091-05	Water	5/2/2009 12:15:00 PM	5/4/2009 9:30:00 AM	322326	☐

Agnes V. Vicknair

6/12/2009

Agnes V. Vicknair
Project Manager

Date

Kesavalu M. Bagawandoss Ph.D., J.D.
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4-52-55 **Collected:** 05/02/2009 7:15 **SPL Sample ID:** 09050091-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS			**MCL**	**SW8015B**	**Units: mg/Kg**		
Diesel Range Organics (C10-C28)	6.3		5	1	05/12/09 23:44	NW	5017047
Surr: n-Pentacosane	100		% 20-154	1	05/12/09 23:44	NW	5017047

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3550B	05/05/2009 11:45	FAK	1.00

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			**MCL**	**SW8015B**	**Units: mg/Kg**		
Gasoline Range Organics	ND		0.1	1	05/08/09 23:24	EMB	5012654
Surr: 1,4-Difluorobenzene	102		% 63-142	1	05/08/09 23:24	EMB	5012654
Surr: 4-Bromofluorobenzene	104		% 50-159	1	05/08/09 23:24	EMB	5012654

Prep Method	Prep Date	Prep Initials	Prep Factor
SW5030B	05/07/2009 11:05	XML	1.00

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE HYDROCARBONS			**MCL**	**SW8015B**	**Units: mg/kg**		
Mineral Spirits Range Organics	ND		10	1	05/12/09 23:44	AM	5063334
Surr: n-Pentacosane	100		% 20-154	1	05/12/09 23:44	AM	5063334

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3550B	05/05/2009 11:45		1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4-52-55 **Collected:** 05/02/2009 7:15 **SPL Sample ID:** 09050091-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/kg**		
1,2,4-Trichlorobenzene	ND		330	1	05/08/09 19:45	GY	5017904
1,2-Dichlorobenzene	ND		330	1	05/08/09 19:45	GY	5017904
1,2-Diphenylhydrazine	ND		330	1	05/08/09 19:45	GY	5017904
1,3-Dichlorobenzene	ND		330	1	05/08/09 19:45	GY	5017904
1,4-Dichlorobenzene	ND		330	1	05/08/09 19:45	GY	5017904
2,4,5-Trichlorophenol	ND		800	1	05/08/09 19:45	GY	5017904
2,4,6-Trichlorophenol	ND		330	1	05/08/09 19:45	GY	5017904
2,4-Dichlorophenol	ND		330	1	05/08/09 19:45	GY	5017904
2,4-Dimethylphenol	ND		330	1	05/08/09 19:45	GY	5017904
2,4-Dinitrophenol	ND		800	1	05/08/09 19:45	GY	5017904
2,4-Dinitrotoluene	ND		800	1	05/08/09 19:45	GY	5017904
2,6-Dinitrotoluene	ND		330	1	05/08/09 19:45	GY	5017904
2-Chloronaphthalene	ND		330	1	05/08/09 19:45	GY	5017904
2-Chlorophenol	ND		330	1	05/08/09 19:45	GY	5017904
2-Methylnaphthalene	ND		330	1	05/08/09 19:45	GY	5017904
2-Nitroaniline	ND		800	1	05/08/09 19:45	GY	5017904
2-Nitrophenol	ND		330	1	05/08/09 19:45	GY	5017904
3,3'-Dichlorobenzidine	ND		330	1	05/08/09 19:45	GY	5017904
3-Nitroaniline	ND		800	1	05/08/09 19:45	GY	5017904
4,6-Dinitro-2-methylphenol	ND		800	1	05/08/09 19:45	GY	5017904
4-Bromophenyl phenyl ether	ND		330	1	05/08/09 19:45	GY	5017904
4-Chloro-3-methylphenol	ND		330	1	05/08/09 19:45	GY	5017904
4-Chloroaniline	ND		330	1	05/08/09 19:45	GY	5017904
4-Chlorophenyl phenyl ether	ND		330	1	05/08/09 19:45	GY	5017904
4-Nitroaniline	ND		800	1	05/08/09 19:45	GY	5017904
4-Nitrophenol	ND		800	1	05/08/09 19:45	GY	5017904
Acenaphthene	ND		330	1	05/08/09 19:45	GY	5017904
Acenaphthylene	ND		330	1	05/08/09 19:45	GY	5017904
Aniline	ND		330	1	05/08/09 19:45	GY	5017904
Anthracene	ND		330	1	05/08/09 19:45	GY	5017904
Benz(a)anthracene	ND		330	1	05/08/09 19:45	GY	5017904
Benzo(a)pyrene	ND		330	1	05/08/09 19:45	GY	5017904
Benzo(b)fluoranthene	ND		330	1	05/08/09 19:45	GY	5017904
Benzo(g,h,i)perylene	ND		330	1	05/08/09 19:45	GY	5017904
Benzo(k)fluoranthene	ND		330	1	05/08/09 19:45	GY	5017904
Benzoic acid	ND		1600	1	05/08/09 19:45	GY	5017904
Benzyl alcohol	ND		330	1	05/08/09 19:45	GY	5017904
Bis(2-chloroethoxy)methane	ND		330	1	05/08/09 19:45	GY	5017904
Bis(2-chloroethyl)ether	ND		330	1	05/08/09 19:45	GY	5017904

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4-52-55 **Collected:** 05/02/2009 7:15 **SPL Sample ID:** 09050091-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		330		1	05/08/09 19:45	GY	5017904
Bis(2-ethylhexyl)phthalate	ND		330		1	05/08/09 19:45	GY	5017904
Butyl benzyl phthalate	ND		330		1	05/08/09 19:45	GY	5017904
Carbazole	ND		330		1	05/08/09 19:45	GY	5017904
Chrysene	ND		330		1	05/08/09 19:45	GY	5017904
Dibenz(a,h)anthracene	ND		330		1	05/08/09 19:45	GY	5017904
Dibenzofuran	ND		330		1	05/08/09 19:45	GY	5017904
Diethyl phthalate	ND		330		1	05/08/09 19:45	GY	5017904
Dimethyl phthalate	ND		330		1	05/08/09 19:45	GY	5017904
Di-n-butyl phthalate	ND		330		1	05/08/09 19:45	GY	5017904
Di-n-octyl phthalate	ND		330		1	05/08/09 19:45	GY	5017904
Fluoranthene	ND		330		1	05/08/09 19:45	GY	5017904
Fluorene	ND		330		1	05/08/09 19:45	GY	5017904
Hexachlorobenzene	ND		330		1	05/08/09 19:45	GY	5017904
Hexachlorobutadiene	ND		330		1	05/08/09 19:45	GY	5017904
Hexachlorocyclopentadiene	ND		330		1	05/08/09 19:45	GY	5017904
Hexachloroethane	ND		330		1	05/08/09 19:45	GY	5017904
Indeno(1,2,3-cd)pyrene	ND		330		1	05/08/09 19:45	GY	5017904
Isophorone	ND		330		1	05/08/09 19:45	GY	5017904
Naphthalene	ND		330		1	05/08/09 19:45	GY	5017904
Nitrobenzene	ND		330		1	05/08/09 19:45	GY	5017904
N-Nitrosodi-n-propylamine	ND		330		1	05/08/09 19:45	GY	5017904
N-Nitrosodiphenylamine	ND		330		1	05/08/09 19:45	GY	5017904
Pentachlorophenol	ND		800		1	05/08/09 19:45	GY	5017904
Phenanthrene	ND		330		1	05/08/09 19:45	GY	5017904
Phenol	ND		330		1	05/08/09 19:45	GY	5017904
Pyrene	ND		330		1	05/08/09 19:45	GY	5017904
Pyridine	ND		330		1	05/08/09 19:45	GY	5017904
2-Methylphenol	ND		330		1	05/08/09 19:45	GY	5017904
3 & 4-Methylphenol	ND		330		1	05/08/09 19:45	GY	5017904
Surr: 2,4,6-Tribromophenol	79.2		%	19-135	1	05/08/09 19:45	GY	5017904
Surr: 2-Fluorobiphenyl	55.5		%	15-140	1	05/08/09 19:45	GY	5017904
Surr: 2-Fluorophenol	71.6		%	15-122	1	05/08/09 19:45	GY	5017904
Surr: Nitrobenzene-d5	56.9		%	10-134	1	05/08/09 19:45	GY	5017904
Surr: Phenol-d5	76.8		%	10-123	1	05/08/09 19:45	GY	5017904
Surr: Terphenyl-d14	58.2		%	18-166	1	05/08/09 19:45	GY	5017904

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3550C	05/06/2009 15:27	QMT	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4-52-55 **Collected:** 05/02/2009 7:15 **SPL Sample ID:** 09050091-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/kg**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/07/09 21:34	TLE	5012049
1,1,1-Trichloroethane	ND		5	1	05/07/09 21:34	TLE	5012049
1,1,2,2-Tetrachloroethane	ND		5	1	05/07/09 21:34	TLE	5012049
1,1,2-Trichloroethane	ND		5	1	05/07/09 21:34	TLE	5012049
1,1-Dichloroethane	ND		5	1	05/07/09 21:34	TLE	5012049
1,1-Dichloroethene	ND		5	1	05/07/09 21:34	TLE	5012049
1,1-Dichloropropene	ND		5	1	05/07/09 21:34	TLE	5012049
1,2,3-Trichlorobenzene	ND		5	1	05/07/09 21:34	TLE	5012049
1,2,3-Trichloropropane	ND		5	1	05/07/09 21:34	TLE	5012049
1,2,4-Trichlorobenzene	ND		5	1	05/07/09 21:34	TLE	5012049
1,2,4-Trimethylbenzene	ND		5	1	05/07/09 21:34	TLE	5012049
1,2-Dibromo-3-chloropropane	ND		5	1	05/07/09 21:34	TLE	5012049
1,2-Dibromoethane	ND		5	1	05/07/09 21:34	TLE	5012049
1,2-Dichlorobenzene	ND		5	1	05/07/09 21:34	TLE	5012049
1,2-Dichloroethane	ND		5	1	05/07/09 21:34	TLE	5012049
1,2-Dichloropropane	ND		5	1	05/07/09 21:34	TLE	5012049
1,3,5-Trimethylbenzene	ND		5	1	05/07/09 21:34	TLE	5012049
1,3-Dichlorobenzene	ND		5	1	05/07/09 21:34	TLE	5012049
1,3-Dichloropropane	ND		5	1	05/07/09 21:34	TLE	5012049
1,4-Dichlorobenzene	ND		5	1	05/07/09 21:34	TLE	5012049
2,2-Dichloropropane	ND		5	1	05/07/09 21:34	TLE	5012049
2-Butanone	ND		20	1	05/07/09 21:34	TLE	5012049
2-Chloroethyl vinyl ether	ND		10	1	05/07/09 21:34	TLE	5012049
2-Chlorotoluene	ND		5	1	05/07/09 21:34	TLE	5012049
2-Hexanone	ND		10	1	05/07/09 21:34	TLE	5012049
4-Chlorotoluene	ND		5	1	05/07/09 21:34	TLE	5012049
4-Isopropyltoluene	ND		5	1	05/07/09 21:34	TLE	5012049
4-Methyl-2-pentanone	ND		10	1	05/07/09 21:34	TLE	5012049
Acetone	ND		100	1	05/07/09 21:34	TLE	5012049
Acrylonitrile	ND		50	1	05/07/09 21:34	TLE	5012049
Benzene	ND		5	1	05/07/09 21:34	TLE	5012049
Bromobenzene	ND		5	1	05/07/09 21:34	TLE	5012049
Bromochloromethane	ND		5	1	05/07/09 21:34	TLE	5012049
Bromodichloromethane	ND		5	1	05/07/09 21:34	TLE	5012049
Bromoform	ND		5	1	05/07/09 21:34	TLE	5012049
Bromomethane	ND		10	1	05/07/09 21:34	TLE	5012049
Carbon disulfide	ND		5	1	05/07/09 21:34	TLE	5012049
Carbon tetrachloride	ND		5	1	05/07/09 21:34	TLE	5012049
Chlorobenzene	ND		5	1	05/07/09 21:34	TLE	5012049

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4-52-55 **Collected:** 05/02/2009 7:15 **SPL Sample ID:** 09050091-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/07/09 21:34	TLE	5012049
Chloroform	ND		5	1	05/07/09 21:34	TLE	5012049
Chloromethane	ND		10	1	05/07/09 21:34	TLE	5012049
Dibromochloromethane	ND		5	1	05/07/09 21:34	TLE	5012049
Dibromomethane	ND		5	1	05/07/09 21:34	TLE	5012049
Dichlorodifluoromethane	ND		10	1	05/07/09 21:34	TLE	5012049
Ethylbenzene	ND		5	1	05/07/09 21:34	TLE	5012049
Hexachlorobutadiene	ND		5	1	05/07/09 21:34	TLE	5012049
Isopropylbenzene	ND		5	1	05/07/09 21:34	TLE	5012049
Methyl tert-butyl ether	ND		5	1	05/07/09 21:34	TLE	5012049
Methylene chloride	ND		5	1	05/07/09 21:34	TLE	5012049
Naphthalene	ND		5	1	05/07/09 21:34	TLE	5012049
n-Butylbenzene	ND		5	1	05/07/09 21:34	TLE	5012049
n-Propylbenzene	ND		5	1	05/07/09 21:34	TLE	5012049
sec-Butylbenzene	ND		5	1	05/07/09 21:34	TLE	5012049
Styrene	ND		5	1	05/07/09 21:34	TLE	5012049
tert-Butylbenzene	ND		5	1	05/07/09 21:34	TLE	5012049
Tetrachloroethene	ND		5	1	05/07/09 21:34	TLE	5012049
Toluene	ND		5	1	05/07/09 21:34	TLE	5012049
Trichloroethene	ND		5	1	05/07/09 21:34	TLE	5012049
Trichlorofluoromethane	ND		5	1	05/07/09 21:34	TLE	5012049
Vinyl acetate	ND		10	1	05/07/09 21:34	TLE	5012049
Vinyl chloride	ND		10	1	05/07/09 21:34	TLE	5012049
cis-1,2-Dichloroethene	ND		5	1	05/07/09 21:34	TLE	5012049
cis-1,3-Dichloropropene	ND		5	1	05/07/09 21:34	TLE	5012049
m,p-Xylene	ND		5	1	05/07/09 21:34	TLE	5012049
o-Xylene	ND		5	1	05/07/09 21:34	TLE	5012049
trans-1,2-Dichloroethene	ND		5	1	05/07/09 21:34	TLE	5012049
trans-1,3-Dichloropropene	ND		5	1	05/07/09 21:34	TLE	5012049
Xylenes,Total	ND		5	1	05/07/09 21:34	TLE	5012049
1,2-Dichloroethene (total)	ND		5	1	05/07/09 21:34	TLE	5012049
Surr: 1,2-Dichloroethane-d4	97.4		% 64-115	1	05/07/09 21:34	TLE	5012049
Surr: 4-Bromofluorobenzene	113		% 65-131	1	05/07/09 21:34	TLE	5012049
Surr: Toluene-d8	90.8		% 75-136	1	05/07/09 21:34	TLE	5012049

Prep Method	Prep Date	Prep Initials	Prep Factor
SW5030B	05/05/2009 18:04	XML	1.00

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TNTC - Too numerous to count
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MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4 **Collected:** 05/02/2009 12:00 **SPL Sample ID:** 09050091-02

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
ALKALINITY (AS CACO3), TOTAL				**MCL**	**E310.1**	**Units: mg/L**		
Alkalinity, Total (As CaCO3)	477		2		1	06/10/09 16:00	PAC	5061242
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics (C10-C28)	2.4		0.1		1	05/06/09 22:45	NW	5014281
Surr: n-Pentacosane	50.4		% 20-150		1	05/06/09 22:45	NW	5014281

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 14:15	N_M	1.00

GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	4.7		0.5		5	05/08/09 11:48	CLJ	5014443
Surr: 1,4-Difluorobenzene	89.4		% 60-155		5	05/08/09 11:48	CLJ	5014443
Surr: 4-Bromofluorobenzene	114		% 50-158		5	05/08/09 11:48	CLJ	5014443
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**		
Methane	ND		0.0012		1	05/07/09 10:33	V_L	5009411
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**		
Chloride	218		25		50	05/15/09 12:11	BDG	5022191
Sulfate	46.4		25		50	05/15/09 12:11	BDG	5022191
Nitrogen,Nitrate (As N)	0.553		0.5		1	05/04/09 11:59	BDG	5008121

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4 **Collected:** 05/02/2009 12:00 **SPL Sample ID:** 09050091-02

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	05/11/09 17:47	E_R	5015639
1,2-Dichlorobenzene	ND		5	1	05/11/09 17:47	E_R	5015639
1,2-Diphenylhydrazine	ND		10	1	05/11/09 17:47	E_R	5015639
1,3-Dichlorobenzene	ND		5	1	05/11/09 17:47	E_R	5015639
1,4-Dichlorobenzene	ND		5	1	05/11/09 17:47	E_R	5015639
2,4,5-Trichlorophenol	ND		10	1	05/11/09 17:47	E_R	5015639
2,4,6-Trichlorophenol	ND		5	1	05/11/09 17:47	E_R	5015639
2,4-Dichlorophenol	ND		5	1	05/11/09 17:47	E_R	5015639
2,4-Dimethylphenol	ND		5	1	05/11/09 17:47	E_R	5015639
2,4-Dinitrophenol	ND		25	1	05/11/09 17:47	E_R	5015639
2,4-Dinitrotoluene	ND		5	1	05/11/09 17:47	E_R	5015639
2,6-Dinitrotoluene	ND		5	1	05/11/09 17:47	E_R	5015639
2-Chloronaphthalene	ND		5	1	05/11/09 17:47	E_R	5015639
2-Chlorophenol	ND		5	1	05/11/09 17:47	E_R	5015639
2-Methylnaphthalene	27		5	1	05/11/09 17:47	E_R	5015639
2-Nitroaniline	ND		25	1	05/11/09 17:47	E_R	5015639
2-Nitrophenol	ND		5	1	05/11/09 17:47	E_R	5015639
3,3'-Dichlorobenzidine	ND		10	1	05/11/09 17:47	E_R	5015639
3-Nitroaniline	ND		25	1	05/11/09 17:47	E_R	5015639
4,6-Dinitro-2-methylphenol	ND		25	1	05/11/09 17:47	E_R	5015639
4-Bromophenyl phenyl ether	ND		5	1	05/11/09 17:47	E_R	5015639
4-Chloro-3-methylphenol	ND		5	1	05/11/09 17:47	E_R	5015639
4-Chloroaniline	ND		5	1	05/11/09 17:47	E_R	5015639
4-Chlorophenyl phenyl ether	ND		5	1	05/11/09 17:47	E_R	5015639
4-Nitroaniline	ND		25	1	05/11/09 17:47	E_R	5015639
4-Nitrophenol	ND		25	1	05/11/09 17:47	E_R	5015639
Acenaphthene	ND		5	1	05/11/09 17:47	E_R	5015639
Acenaphthylene	ND		5	1	05/11/09 17:47	E_R	5015639
Aniline	ND		5	1	05/11/09 17:47	E_R	5015639
Anthracene	ND		5	1	05/11/09 17:47	E_R	5015639
Benz(a)anthracene	ND		5	1	05/11/09 17:47	E_R	5015639
Benzo(a)pyrene	ND		5	1	05/11/09 17:47	E_R	5015639
Benzo(b)fluoranthene	ND		5	1	05/11/09 17:47	E_R	5015639
Benzo(g,h,i)perylene	ND		5	1	05/11/09 17:47	E_R	5015639
Benzo(k)fluoranthene	ND		5	1	05/11/09 17:47	E_R	5015639
Benzoic acid	ND		25	1	05/11/09 17:47	E_R	5015639
Benzyl alcohol	ND		5	1	05/11/09 17:47	E_R	5015639
Bis(2-chloroethoxy)methane	ND		5	1	05/11/09 17:47	E_R	5015639
Bis(2-chloroethyl)ether	ND		5	1	05/11/09 17:47	E_R	5015639

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4 **Collected:** 05/02/2009 12:00 **SPL Sample ID:** 09050091-02

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		5	1	05/11/09 17:47	E_R	5015639
Bis(2-ethylhexyl)phthalate	ND		5	1	05/11/09 17:47	E_R	5015639
Butyl benzyl phthalate	ND		5	1	05/11/09 17:47	E_R	5015639
Carbazole	ND		5	1	05/11/09 17:47	E_R	5015639
Chrysene	ND		5	1	05/11/09 17:47	E_R	5015639
Dibenz(a,h)anthracene	ND		5	1	05/11/09 17:47	E_R	5015639
Dibenzofuran	ND		5	1	05/11/09 17:47	E_R	5015639
Diethyl phthalate	ND		5	1	05/11/09 17:47	E_R	5015639
Dimethyl phthalate	ND		5	1	05/11/09 17:47	E_R	5015639
Di-n-butyl phthalate	8.3		5	1	05/11/09 17:47	E_R	5015639
Di-n-octyl phthalate	ND		5	1	05/11/09 17:47	E_R	5015639
Fluoranthene	ND		5	1	05/11/09 17:47	E_R	5015639
Fluorene	ND		5	1	05/11/09 17:47	E_R	5015639
Hexachlorobenzene	ND		5	1	05/11/09 17:47	E_R	5015639
Hexachlorobutadiene	ND		5	1	05/11/09 17:47	E_R	5015639
Hexachlorocyclopentadiene	ND		5	1	05/11/09 17:47	E_R	5015639
Hexachloroethane	ND		5	1	05/11/09 17:47	E_R	5015639
Indeno(1,2,3-cd)pyrene	ND		5	1	05/11/09 17:47	E_R	5015639
Isophorone	ND		5	1	05/11/09 17:47	E_R	5015639
Naphthalene	44		5	1	05/11/09 17:47	E_R	5015639
Nitrobenzene	ND		5	1	05/11/09 17:47	E_R	5015639
N-Nitrosodi-n-propylamine	ND		5	1	05/11/09 17:47	E_R	5015639
N-Nitrosodiphenylamine	ND		5	1	05/11/09 17:47	E_R	5015639
Pentachlorophenol	ND		25	1	05/11/09 17:47	E_R	5015639
Phenanthrene	ND		5	1	05/11/09 17:47	E_R	5015639
Phenol	ND		5	1	05/11/09 17:47	E_R	5015639
Pyrene	ND		5	1	05/11/09 17:47	E_R	5015639
Pyridine	ND		5	1	05/11/09 17:47	E_R	5015639
2-Methylphenol	ND		5	1	05/11/09 17:47	E_R	5015639
3 & 4-Methylphenol	ND		5	1	05/11/09 17:47	E_R	5015639
Surr: 2,4,6-Tribromophenol	95.7		% 10-123	1	05/11/09 17:47	E_R	5015639
Surr: 2-Fluorobiphenyl	59.4		% 23-116	1	05/11/09 17:47	E_R	5015639
Surr: 2-Fluorophenol	66.5		% 16-110	1	05/11/09 17:47	E_R	5015639
Surr: Nitrobenzene-d5	52.0		% 21-114	1	05/11/09 17:47	E_R	5015639
Surr: Phenol-d5	54.1		% 10-110	1	05/11/09 17:47	E_R	5015639
Surr: Terphenyl-d14	60.4		% 22-141	1	05/11/09 17:47	E_R	5015639

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 15:05	N_M	1.00

Qualifiers:

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4 **Collected:** 05/02/2009 12:00 **SPL Sample ID:** 09050091-02

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/11/09 18:54	JC	5015579
1,1,1-Trichloroethane	ND		5	1	05/11/09 18:54	JC	5015579
1,1,2,2-Tetrachloroethane	ND		5	1	05/11/09 18:54	JC	5015579
1,1,2-Trichloroethane	ND		5	1	05/11/09 18:54	JC	5015579
1,1-Dichloroethane	ND		5	1	05/11/09 18:54	JC	5015579
1,1-Dichloroethene	ND		5	1	05/11/09 18:54	JC	5015579
1,1-Dichloropropene	ND		5	1	05/11/09 18:54	JC	5015579
1,2,3-Trichlorobenzene	ND		5	1	05/11/09 18:54	JC	5015579
1,2,3-Trichloropropane	ND		5	1	05/11/09 18:54	JC	5015579
1,2,4-Trichlorobenzene	ND		5	1	05/11/09 18:54	JC	5015579
1,2,4-Trimethylbenzene	440		25	5	05/12/09 13:29	JC	5018930
1,2-Dibromo-3-chloropropane	ND		5	1	05/11/09 18:54	JC	5015579
1,2-Dibromoethane	ND		5	1	05/11/09 18:54	JC	5015579
1,2-Dichlorobenzene	ND		5	1	05/11/09 18:54	JC	5015579
1,2-Dichloroethane	ND		5	1	05/11/09 18:54	JC	5015579
1,2-Dichloropropane	ND		5	1	05/11/09 18:54	JC	5015579
1,3,5-Trimethylbenzene	19		5	1	05/11/09 18:54	JC	5015579
1,3-Dichlorobenzene	ND		5	1	05/11/09 18:54	JC	5015579
1,3-Dichloropropane	ND		5	1	05/11/09 18:54	JC	5015579
1,4-Dichlorobenzene	ND		5	1	05/11/09 18:54	JC	5015579
2,2-Dichloropropane	ND		5	1	05/11/09 18:54	JC	5015579
2-Butanone	ND		20	1	05/11/09 18:54	JC	5015579
2-Chloroethyl vinyl ether	ND J		10	1	05/11/09 18:54	JC	5015579
2-Chlorotoluene	ND		5	1	05/11/09 18:54	JC	5015579
2-Hexanone	ND		10	1	05/11/09 18:54	JC	5015579
4-Chlorotoluene	ND		5	1	05/11/09 18:54	JC	5015579
4-Isopropyltoluene	9.6		5	1	05/11/09 18:54	JC	5015579
4-Methyl-2-pentanone	ND		10	1	05/11/09 18:54	JC	5015579
Acetone	ND		20	1	05/11/09 18:54	JC	5015579
Acrylonitrile	ND		10	1	05/11/09 18:54	JC	5015579
Benzene	81		5	1	05/11/09 18:54	JC	5015579
Bromobenzene	ND		5	1	05/11/09 18:54	JC	5015579
Bromochloromethane	ND		5	1	05/11/09 18:54	JC	5015579
Bromodichloromethane	ND		5	1	05/11/09 18:54	JC	5015579
Bromoform	ND		5	1	05/11/09 18:54	JC	5015579
Bromomethane	ND		10	1	05/11/09 18:54	JC	5015579
Carbon disulfide	ND		5	1	05/11/09 18:54	JC	5015579
Carbon tetrachloride	ND		5	1	05/11/09 18:54	JC	5015579
Chlorobenzene	ND		5	1	05/11/09 18:54	JC	5015579

Qualifiers:

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4 **Collected:** 05/02/2009 12:00 **SPL Sample ID:** 09050091-02

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/11/09 18:54	JC	5015579
Chloroform	ND		5	1	05/11/09 18:54	JC	5015579
Chloromethane	ND		10	1	05/11/09 18:54	JC	5015579
Dibromochloromethane	ND		5	1	05/11/09 18:54	JC	5015579
Dibromomethane	ND		5	1	05/11/09 18:54	JC	5015579
Dichlorodifluoromethane	ND		10	1	05/11/09 18:54	JC	5015579
Ethylbenzene	530		25	5	05/12/09 13:29	JC	5018930
Hexachlorobutadiene	ND		5	1	05/11/09 18:54	JC	5015579
Isopropylbenzene	41		5	1	05/11/09 18:54	JC	5015579
Methyl tert-butyl ether	ND		5	1	05/11/09 18:54	JC	5015579
Methylene chloride	ND		5	1	05/11/09 18:54	JC	5015579
Naphthalene	86		5	1	05/11/09 18:54	JC	5015579
n-Butylbenzene	28		5	1	05/11/09 18:54	JC	5015579
n-Propylbenzene	45		5	1	05/11/09 18:54	JC	5015579
sec-Butylbenzene	18		5	1	05/11/09 18:54	JC	5015579
Styrene	ND		5	1	05/11/09 18:54	JC	5015579
tert-Butylbenzene	ND		5	1	05/11/09 18:54	JC	5015579
Tetrachloroethene	ND		5	1	05/11/09 18:54	JC	5015579
Toluene	ND		5	1	05/11/09 18:54	JC	5015579
Trichloroethene	ND		5	1	05/11/09 18:54	JC	5015579
Trichlorofluoromethane	ND		5	1	05/11/09 18:54	JC	5015579
Vinyl acetate	ND		10	1	05/11/09 18:54	JC	5015579
Vinyl chloride	ND		2	1	05/11/09 18:54	JC	5015579
cis-1,2-Dichloroethene	ND		5	1	05/11/09 18:54	JC	5015579
cis-1,3-Dichloropropene	ND		5	1	05/11/09 18:54	JC	5015579
m,p-Xylene	730		25	5	05/12/09 13:29	JC	5018930
o-Xylene	220		25	5	05/12/09 13:29	JC	5018930
trans-1,2-Dichloroethene	ND		5	1	05/11/09 18:54	JC	5015579
trans-1,3-Dichloropropene	ND		5	1	05/11/09 18:54	JC	5015579
1,2-Dichloroethene (total)	ND		5	1	05/11/09 18:54	JC	5015579
Xylenes,Total	950		25	5	05/12/09 13:29	JC	5018930
Surr: 1,2-Dichloroethane-d4	92.4		% 78-116	1	05/11/09 18:54	JC	5015579
Surr: 1,2-Dichloroethane-d4	102		% 78-116	5	05/12/09 13:29	JC	5018930
Surr: 4-Bromofluorobenzene	114		% 74-125	1	05/11/09 18:54	JC	5015579
Surr: 4-Bromofluorobenzene	102		% 74-125	5	05/12/09 13:29	JC	5018930
Surr: Toluene-d8	99.3		% 82-118	5	05/12/09 13:29	JC	5018930
Surr: Toluene-d8	99.0		% 82-118	1	05/11/09 18:54	JC	5015579

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TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: RB-050209-1 **Collected:** 05/02/2009 12:10 **SPL Sample ID:** 09050091-03

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics (C10-C28)	ND		0.1		1	05/06/09 23:05	NW	5014282
Surr: n-Pentacosane	77.2		% 20-150		1	05/06/09 23:05	NW	5014282

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 14:15	N_M	1.00

GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND		0.1		1	05/08/09 12:16	CLJ	5014444
Surr: 1,4-Difluorobenzene	90.2		% 60-155		1	05/08/09 12:16	CLJ	5014444
Surr: 4-Bromofluorobenzene	104		% 50-158		1	05/08/09 12:16	CLJ	5014444

Qualifiers:

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TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: RB-050209-1 **Collected:** 05/02/2009 12:10 **SPL Sample ID:** 09050091-03

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	05/11/09 18:22	E_R	5015640
1,2-Dichlorobenzene	ND		5	1	05/11/09 18:22	E_R	5015640
1,2-Diphenylhydrazine	ND		10	1	05/11/09 18:22	E_R	5015640
1,3-Dichlorobenzene	ND		5	1	05/11/09 18:22	E_R	5015640
1,4-Dichlorobenzene	ND		5	1	05/11/09 18:22	E_R	5015640
2,4,5-Trichlorophenol	ND		10	1	05/11/09 18:22	E_R	5015640
2,4,6-Trichlorophenol	ND		5	1	05/11/09 18:22	E_R	5015640
2,4-Dichlorophenol	ND		5	1	05/11/09 18:22	E_R	5015640
2,4-Dimethylphenol	ND		5	1	05/11/09 18:22	E_R	5015640
2,4-Dinitrophenol	ND		25	1	05/11/09 18:22	E_R	5015640
2,4-Dinitrotoluene	ND		5	1	05/11/09 18:22	E_R	5015640
2,6-Dinitrotoluene	ND		5	1	05/11/09 18:22	E_R	5015640
2-Chloronaphthalene	ND		5	1	05/11/09 18:22	E_R	5015640
2-Chlorophenol	ND		5	1	05/11/09 18:22	E_R	5015640
2-Methylnaphthalene	ND		5	1	05/11/09 18:22	E_R	5015640
2-Nitroaniline	ND		25	1	05/11/09 18:22	E_R	5015640
2-Nitrophenol	ND		5	1	05/11/09 18:22	E_R	5015640
3,3'-Dichlorobenzidine	ND		10	1	05/11/09 18:22	E_R	5015640
3-Nitroaniline	ND		25	1	05/11/09 18:22	E_R	5015640
4,6-Dinitro-2-methylphenol	ND		25	1	05/11/09 18:22	E_R	5015640
4-Bromophenyl phenyl ether	ND		5	1	05/11/09 18:22	E_R	5015640
4-Chloro-3-methylphenol	ND		5	1	05/11/09 18:22	E_R	5015640
4-Chloroaniline	ND		5	1	05/11/09 18:22	E_R	5015640
4-Chlorophenyl phenyl ether	ND		5	1	05/11/09 18:22	E_R	5015640
4-Nitroaniline	ND		25	1	05/11/09 18:22	E_R	5015640
4-Nitrophenol	ND		25	1	05/11/09 18:22	E_R	5015640
Acenaphthene	ND		5	1	05/11/09 18:22	E_R	5015640
Acenaphthylene	ND		5	1	05/11/09 18:22	E_R	5015640
Aniline	ND		5	1	05/11/09 18:22	E_R	5015640
Anthracene	ND		5	1	05/11/09 18:22	E_R	5015640
Benz(a)anthracene	ND		5	1	05/11/09 18:22	E_R	5015640
Benzo(a)pyrene	ND		5	1	05/11/09 18:22	E_R	5015640
Benzo(b)fluoranthene	ND		5	1	05/11/09 18:22	E_R	5015640
Benzo(g,h,i)perylene	ND		5	1	05/11/09 18:22	E_R	5015640
Benzo(k)fluoranthene	ND		5	1	05/11/09 18:22	E_R	5015640
Benzoic acid	ND		25	1	05/11/09 18:22	E_R	5015640
Benzyl alcohol	ND		5	1	05/11/09 18:22	E_R	5015640
Bis(2-chloroethoxy)methane	ND		5	1	05/11/09 18:22	E_R	5015640
Bis(2-chloroethyl)ether	ND		5	1	05/11/09 18:22	E_R	5015640

Qualifiers:

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: RB-050209-1 **Collected:** 05/02/2009 12:10 **SPL Sample ID:** 09050091-03

Site: Hobbs, NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND			5	1	05/11/09 18:22	E_R	5015640
Bis(2-ethylhexyl)phthalate	ND			5	1	05/11/09 18:22	E_R	5015640
Butyl benzyl phthalate	ND			5	1	05/11/09 18:22	E_R	5015640
Carbazole	ND			5	1	05/11/09 18:22	E_R	5015640
Chrysene	ND			5	1	05/11/09 18:22	E_R	5015640
Dibenz(a,h)anthracene	ND			5	1	05/11/09 18:22	E_R	5015640
Dibenzofuran	ND			5	1	05/11/09 18:22	E_R	5015640
Diethyl phthalate	ND			5	1	05/11/09 18:22	E_R	5015640
Dimethyl phthalate	ND			5	1	05/11/09 18:22	E_R	5015640
Di-n-butyl phthalate	ND			5	1	05/11/09 18:22	E_R	5015640
Di-n-octyl phthalate	ND			5	1	05/11/09 18:22	E_R	5015640
Fluoranthene	ND			5	1	05/11/09 18:22	E_R	5015640
Fluorene	ND			5	1	05/11/09 18:22	E_R	5015640
Hexachlorobenzene	ND			5	1	05/11/09 18:22	E_R	5015640
Hexachlorobutadiene	ND			5	1	05/11/09 18:22	E_R	5015640
Hexachlorocyclopentadiene	ND			5	1	05/11/09 18:22	E_R	5015640
Hexachloroethane	ND			5	1	05/11/09 18:22	E_R	5015640
Indeno(1,2,3-cd)pyrene	ND			5	1	05/11/09 18:22	E_R	5015640
Isophorone	ND			5	1	05/11/09 18:22	E_R	5015640
Naphthalene	ND			5	1	05/11/09 18:22	E_R	5015640
Nitrobenzene	ND			5	1	05/11/09 18:22	E_R	5015640
N-Nitrosodi-n-propylamine	ND			5	1	05/11/09 18:22	E_R	5015640
N-Nitrosodiphenylamine	ND			5	1	05/11/09 18:22	E_R	5015640
Pentachlorophenol	ND			25	1	05/11/09 18:22	E_R	5015640
Phenanthrene	ND			5	1	05/11/09 18:22	E_R	5015640
Phenol	ND			5	1	05/11/09 18:22	E_R	5015640
Pyrene	ND			5	1	05/11/09 18:22	E_R	5015640
Pyridine	ND			5	1	05/11/09 18:22	E_R	5015640
2-Methylphenol	ND			5	1	05/11/09 18:22	E_R	5015640
3 & 4-Methylphenol	ND			5	1	05/11/09 18:22	E_R	5015640
Surr: 2,4,6-Tribromophenol	80.8		%	10-123	1	05/11/09 18:22	E_R	5015640
Surr: 2-Fluorobiphenyl	57.4		%	23-116	1	05/11/09 18:22	E_R	5015640
Surr: 2-Fluorophenol	61.9		%	16-110	1	05/11/09 18:22	E_R	5015640
Surr: Nitrobenzene-d5	50.2		%	21-114	1	05/11/09 18:22	E_R	5015640
Surr: Phenol-d5	52.3		%	10-110	1	05/11/09 18:22	E_R	5015640
Surr: Terphenyl-d14	66.2		%	22-141	1	05/11/09 18:22	E_R	5015640

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 15:05	N_M	1.00

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: RB-050209-1 **Collected:** 05/02/2009 12:10 **SPL Sample ID:** 09050091-03

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/12/09 13:00	JC	5018929
1,1,1-Trichloroethane	ND		5	1	05/12/09 13:00	JC	5018929
1,1,2,2-Tetrachloroethane	ND		5	1	05/12/09 13:00	JC	5018929
1,1,2-Trichloroethane	ND		5	1	05/12/09 13:00	JC	5018929
1,1-Dichloroethane	ND		5	1	05/12/09 13:00	JC	5018929
1,1-Dichloroethene	ND		5	1	05/12/09 13:00	JC	5018929
1,1-Dichloropropene	ND		5	1	05/12/09 13:00	JC	5018929
1,2,3-Trichlorobenzene	ND		5	1	05/12/09 13:00	JC	5018929
1,2,3-Trichloropropane	ND		5	1	05/12/09 13:00	JC	5018929
1,2,4-Trichlorobenzene	ND		5	1	05/12/09 13:00	JC	5018929
1,2,4-Trimethylbenzene	ND		5	1	05/12/09 13:00	JC	5018929
1,2-Dibromo-3-chloropropane	ND		5	1	05/12/09 13:00	JC	5018929
1,2-Dibromoethane	ND		5	1	05/12/09 13:00	JC	5018929
1,2-Dichlorobenzene	ND		5	1	05/12/09 13:00	JC	5018929
1,2-Dichloroethane	ND		5	1	05/12/09 13:00	JC	5018929
1,2-Dichloropropane	ND		5	1	05/12/09 13:00	JC	5018929
1,3,5-Trimethylbenzene	ND		5	1	05/12/09 13:00	JC	5018929
1,3-Dichlorobenzene	ND		5	1	05/12/09 13:00	JC	5018929
1,3-Dichloropropane	ND		5	1	05/12/09 13:00	JC	5018929
1,4-Dichlorobenzene	ND		5	1	05/12/09 13:00	JC	5018929
2,2-Dichloropropane	ND		5	1	05/12/09 13:00	JC	5018929
2-Butanone	ND		20	1	05/12/09 13:00	JC	5018929
2-Chloroethyl vinyl ether	ND	J	10	1	05/12/09 13:00	JC	5018929
2-Chlorotoluene	ND		5	1	05/12/09 13:00	JC	5018929
2-Hexanone	ND		10	1	05/12/09 13:00	JC	5018929
4-Chlorotoluene	ND		5	1	05/12/09 13:00	JC	5018929
4-Isopropyltoluene	ND		5	1	05/12/09 13:00	JC	5018929
4-Methyl-2-pentanone	ND		10	1	05/12/09 13:00	JC	5018929
Acetone	ND		20	1	05/12/09 13:00	JC	5018929
Acrylonitrile	ND		10	1	05/12/09 13:00	JC	5018929
Benzene	ND		5	1	05/12/09 13:00	JC	5018929
Bromobenzene	ND		5	1	05/12/09 13:00	JC	5018929
Bromochloromethane	ND		5	1	05/12/09 13:00	JC	5018929
Bromodichloromethane	ND		5	1	05/12/09 13:00	JC	5018929
Bromoform	ND		5	1	05/12/09 13:00	JC	5018929
Bromomethane	ND		10	1	05/12/09 13:00	JC	5018929
Carbon disulfide	ND		5	1	05/12/09 13:00	JC	5018929
Carbon tetrachloride	ND		5	1	05/12/09 13:00	JC	5018929
Chlorobenzene	ND		5	1	05/12/09 13:00	JC	5018929

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: RB-050209-1 **Collected:** 05/02/2009 12:10 **SPL Sample ID:** 09050091-03

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/12/09 13:00	JC	5018929
Chloroform	ND		5	1	05/12/09 13:00	JC	5018929
Chloromethane	ND		10	1	05/12/09 13:00	JC	5018929
Dibromochloromethane	ND		5	1	05/12/09 13:00	JC	5018929
Dibromomethane	ND		5	1	05/12/09 13:00	JC	5018929
Dichlorodifluoromethane	ND		10	1	05/12/09 13:00	JC	5018929
Ethylbenzene	ND		5	1	05/12/09 13:00	JC	5018929
Hexachlorobutadiene	ND		5	1	05/12/09 13:00	JC	5018929
Isopropylbenzene	ND		5	1	05/12/09 13:00	JC	5018929
Methyl tert-butyl ether	ND		5	1	05/12/09 13:00	JC	5018929
Methylene chloride	ND		5	1	05/12/09 13:00	JC	5018929
Naphthalene	ND		5	1	05/12/09 13:00	JC	5018929
n-Butylbenzene	ND		5	1	05/12/09 13:00	JC	5018929
n-Propylbenzene	ND		5	1	05/12/09 13:00	JC	5018929
sec-Butylbenzene	ND		5	1	05/12/09 13:00	JC	5018929
Styrene	ND		5	1	05/12/09 13:00	JC	5018929
tert-Butylbenzene	ND		5	1	05/12/09 13:00	JC	5018929
Tetrachloroethene	ND		5	1	05/12/09 13:00	JC	5018929
Toluene	ND		5	1	05/12/09 13:00	JC	5018929
Trichloroethene	ND		5	1	05/12/09 13:00	JC	5018929
Trichlorofluoromethane	ND		5	1	05/12/09 13:00	JC	5018929
Vinyl acetate	ND		10	1	05/12/09 13:00	JC	5018929
Vinyl chloride	ND		2	1	05/12/09 13:00	JC	5018929
cis-1,2-Dichloroethene	ND		5	1	05/12/09 13:00	JC	5018929
cis-1,3-Dichloropropene	ND		5	1	05/12/09 13:00	JC	5018929
m,p-Xylene	ND		5	1	05/12/09 13:00	JC	5018929
o-Xylene	ND		5	1	05/12/09 13:00	JC	5018929
trans-1,2-Dichloroethene	ND		5	1	05/12/09 13:00	JC	5018929
trans-1,3-Dichloropropene	ND		5	1	05/12/09 13:00	JC	5018929
1,2-Dichloroethene (total)	ND		5	1	05/12/09 13:00	JC	5018929
Xylenes,Total	ND		5	1	05/12/09 13:00	JC	5018929
Surr: 1,2-Dichloroethane-d4	105		% 78-116	1	05/12/09 13:00	JC	5018929
Surr: 4-Bromofluorobenzene	100		% 74-125	1	05/12/09 13:00	JC	5018929
Surr: Toluene-d8	97.1		% 82-118	1	05/12/09 13:00	JC	5018929

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: FB-050209-1 **Collected:** 05/02/2009 12:15 **SPL Sample ID:** 09050091-04

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/11/09 19:53	JC	5015580
1,1,1-Trichloroethane	ND		5	1	05/11/09 19:53	JC	5015580
1,1,2,2-Tetrachloroethane	ND		5	1	05/11/09 19:53	JC	5015580
1,1,2-Trichloroethane	ND		5	1	05/11/09 19:53	JC	5015580
1,1-Dichloroethane	ND		5	1	05/11/09 19:53	JC	5015580
1,1-Dichloroethene	ND		5	1	05/11/09 19:53	JC	5015580
1,1-Dichloropropene	ND		5	1	05/11/09 19:53	JC	5015580
1,2,3-Trichlorobenzene	ND		5	1	05/11/09 19:53	JC	5015580
1,2,3-Trichloropropane	ND		5	1	05/11/09 19:53	JC	5015580
1,2,4-Trichlorobenzene	ND		5	1	05/11/09 19:53	JC	5015580
1,2,4-Trimethylbenzene	ND		5	1	05/11/09 19:53	JC	5015580
1,2-Dibromo-3-chloropropane	ND		5	1	05/11/09 19:53	JC	5015580
1,2-Dibromoethane	ND		5	1	05/11/09 19:53	JC	5015580
1,2-Dichlorobenzene	ND		5	1	05/11/09 19:53	JC	5015580
1,2-Dichloroethane	ND		5	1	05/11/09 19:53	JC	5015580
1,2-Dichloropropane	ND		5	1	05/11/09 19:53	JC	5015580
1,3,5-Trimethylbenzene	ND		5	1	05/11/09 19:53	JC	5015580
1,3-Dichlorobenzene	ND		5	1	05/11/09 19:53	JC	5015580
1,3-Dichloropropane	ND		5	1	05/11/09 19:53	JC	5015580
1,4-Dichlorobenzene	ND		5	1	05/11/09 19:53	JC	5015580
2,2-Dichloropropane	ND		5	1	05/11/09 19:53	JC	5015580
2-Butanone	ND		20	1	05/11/09 19:53	JC	5015580
2-Chloroethyl vinyl ether	ND J		10	1	05/11/09 19:53	JC	5015580
2-Chlorotoluene	ND		5	1	05/11/09 19:53	JC	5015580
2-Hexanone	ND		10	1	05/11/09 19:53	JC	5015580
4-Chlorotoluene	ND		5	1	05/11/09 19:53	JC	5015580
4-Isopropyltoluene	ND		5	1	05/11/09 19:53	JC	5015580
4-Methyl-2-pentanone	ND		10	1	05/11/09 19:53	JC	5015580
Acetone	ND		20	1	05/11/09 19:53	JC	5015580
Acrylonitrile	ND		10	1	05/11/09 19:53	JC	5015580
Benzene	ND		5	1	05/11/09 19:53	JC	5015580
Bromobenzene	ND		5	1	05/11/09 19:53	JC	5015580
Bromochloromethane	ND		5	1	05/11/09 19:53	JC	5015580
Bromodichloromethane	ND		5	1	05/11/09 19:53	JC	5015580
Bromoform	ND		5	1	05/11/09 19:53	JC	5015580
Bromomethane	ND		10	1	05/11/09 19:53	JC	5015580
Carbon disulfide	ND		5	1	05/11/09 19:53	JC	5015580
Carbon tetrachloride	ND		5	1	05/11/09 19:53	JC	5015580
Chlorobenzene	ND		5	1	05/11/09 19:53	JC	5015580

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: FB-050209-1 **Collected:** 05/02/2009 12:15 **SPL Sample ID:** 09050091-04

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/11/09 19:53	JC	5015580
Chloroform	ND		5	1	05/11/09 19:53	JC	5015580
Chloromethane	ND		10	1	05/11/09 19:53	JC	5015580
Dibromochloromethane	ND		5	1	05/11/09 19:53	JC	5015580
Dibromomethane	ND		5	1	05/11/09 19:53	JC	5015580
Dichlorodifluoromethane	ND		10	1	05/11/09 19:53	JC	5015580
Ethylbenzene	ND		5	1	05/11/09 19:53	JC	5015580
Hexachlorobutadiene	ND		5	1	05/11/09 19:53	JC	5015580
Isopropylbenzene	ND		5	1	05/11/09 19:53	JC	5015580
Methyl tert-butyl ether	ND		5	1	05/11/09 19:53	JC	5015580
Methylene chloride	ND		5	1	05/11/09 19:53	JC	5015580
Naphthalene	ND		5	1	05/11/09 19:53	JC	5015580
n-Butylbenzene	ND		5	1	05/11/09 19:53	JC	5015580
n-Propylbenzene	ND		5	1	05/11/09 19:53	JC	5015580
sec-Butylbenzene	ND		5	1	05/11/09 19:53	JC	5015580
Styrene	ND		5	1	05/11/09 19:53	JC	5015580
tert-Butylbenzene	ND		5	1	05/11/09 19:53	JC	5015580
Tetrachloroethene	ND		5	1	05/11/09 19:53	JC	5015580
Toluene	ND		5	1	05/11/09 19:53	JC	5015580
Trichloroethene	ND		5	1	05/11/09 19:53	JC	5015580
Trichlorofluoromethane	ND		5	1	05/11/09 19:53	JC	5015580
Vinyl acetate	ND		10	1	05/11/09 19:53	JC	5015580
Vinyl chloride	ND		2	1	05/11/09 19:53	JC	5015580
cis-1,2-Dichloroethene	ND		5	1	05/11/09 19:53	JC	5015580
cis-1,3-Dichloropropene	ND		5	1	05/11/09 19:53	JC	5015580
m,p-Xylene	ND		5	1	05/11/09 19:53	JC	5015580
o-Xylene	ND		5	1	05/11/09 19:53	JC	5015580
trans-1,2-Dichloroethene	ND		5	1	05/11/09 19:53	JC	5015580
trans-1,3-Dichloropropene	ND		5	1	05/11/09 19:53	JC	5015580
1,2-Dichloroethene (total)	ND		5	1	05/11/09 19:53	JC	5015580
Xylenes,Total	ND		5	1	05/11/09 19:53	JC	5015580
Surr: 1,2-Dichloroethane-d4	89.6		% 78-116	1	05/11/09 19:53	JC	5015580
Surr: 4-Bromofluorobenzene	106		% 74-125	1	05/11/09 19:53	JC	5015580
Surr: Toluene-d8	97.4		% 82-118	1	05/11/09 19:53	JC	5015580

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TB-050209-1 **Collected:** 05/02/2009 12:15 **SPL Sample ID:** 09050091-05

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/11/09 20:22	JC	5015581
1,1,1-Trichloroethane	ND		5	1	05/11/09 20:22	JC	5015581
1,1,2,2-Tetrachloroethane	ND		5	1	05/11/09 20:22	JC	5015581
1,1,2-Trichloroethane	ND		5	1	05/11/09 20:22	JC	5015581
1,1-Dichloroethane	ND		5	1	05/11/09 20:22	JC	5015581
1,1-Dichloroethene	ND		5	1	05/11/09 20:22	JC	5015581
1,1-Dichloropropene	ND		5	1	05/11/09 20:22	JC	5015581
1,2,3-Trichlorobenzene	ND		5	1	05/11/09 20:22	JC	5015581
1,2,3-Trichloropropane	ND		5	1	05/11/09 20:22	JC	5015581
1,2,4-Trichlorobenzene	ND		5	1	05/11/09 20:22	JC	5015581
1,2,4-Trimethylbenzene	ND		5	1	05/11/09 20:22	JC	5015581
1,2-Dibromo-3-chloropropane	ND		5	1	05/11/09 20:22	JC	5015581
1,2-Dibromoethane	ND		5	1	05/11/09 20:22	JC	5015581
1,2-Dichlorobenzene	ND		5	1	05/11/09 20:22	JC	5015581
1,2-Dichloroethane	ND		5	1	05/11/09 20:22	JC	5015581
1,2-Dichloropropane	ND		5	1	05/11/09 20:22	JC	5015581
1,3,5-Trimethylbenzene	ND		5	1	05/11/09 20:22	JC	5015581
1,3-Dichlorobenzene	ND		5	1	05/11/09 20:22	JC	5015581
1,3-Dichloropropane	ND		5	1	05/11/09 20:22	JC	5015581
1,4-Dichlorobenzene	ND		5	1	05/11/09 20:22	JC	5015581
2,2-Dichloropropane	ND		5	1	05/11/09 20:22	JC	5015581
2-Butanone	ND		20	1	05/11/09 20:22	JC	5015581
2-Chloroethyl vinyl ether	ND J		10	1	05/11/09 20:22	JC	5015581
2-Chlorotoluene	ND		5	1	05/11/09 20:22	JC	5015581
2-Hexanone	ND		10	1	05/11/09 20:22	JC	5015581
4-Chlorotoluene	ND		5	1	05/11/09 20:22	JC	5015581
4-Isopropyltoluene	ND		5	1	05/11/09 20:22	JC	5015581
4-Methyl-2-pentanone	ND		10	1	05/11/09 20:22	JC	5015581
Acetone	ND		20	1	05/11/09 20:22	JC	5015581
Acrylonitrile	ND		10	1	05/11/09 20:22	JC	5015581
Benzene	ND		5	1	05/11/09 20:22	JC	5015581
Bromobenzene	ND		5	1	05/11/09 20:22	JC	5015581
Bromochloromethane	ND		5	1	05/11/09 20:22	JC	5015581
Bromodichloromethane	ND		5	1	05/11/09 20:22	JC	5015581
Bromoform	ND		5	1	05/11/09 20:22	JC	5015581
Bromomethane	ND		10	1	05/11/09 20:22	JC	5015581
Carbon disulfide	ND		5	1	05/11/09 20:22	JC	5015581
Carbon tetrachloride	ND		5	1	05/11/09 20:22	JC	5015581
Chlorobenzene	ND		5	1	05/11/09 20:22	JC	5015581

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TB-050209-1 **Collected:** 05/02/2009 12:15 **SPL Sample ID:** 09050091-05

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/11/09 20:22	JC	5015581
Chloroform	ND		5	1	05/11/09 20:22	JC	5015581
Chloromethane	ND		10	1	05/11/09 20:22	JC	5015581
Dibromochloromethane	ND		5	1	05/11/09 20:22	JC	5015581
Dibromomethane	ND		5	1	05/11/09 20:22	JC	5015581
Dichlorodifluoromethane	ND		10	1	05/11/09 20:22	JC	5015581
Ethylbenzene	ND		5	1	05/11/09 20:22	JC	5015581
Hexachlorobutadiene	ND		5	1	05/11/09 20:22	JC	5015581
Isopropylbenzene	ND		5	1	05/11/09 20:22	JC	5015581
Methyl tert-butyl ether	ND		5	1	05/11/09 20:22	JC	5015581
Methylene chloride	ND		5	1	05/11/09 20:22	JC	5015581
Naphthalene	ND		5	1	05/11/09 20:22	JC	5015581
n-Butylbenzene	ND		5	1	05/11/09 20:22	JC	5015581
n-Propylbenzene	ND		5	1	05/11/09 20:22	JC	5015581
sec-Butylbenzene	ND		5	1	05/11/09 20:22	JC	5015581
Styrene	ND		5	1	05/11/09 20:22	JC	5015581
tert-Butylbenzene	ND		5	1	05/11/09 20:22	JC	5015581
Tetrachloroethene	ND		5	1	05/11/09 20:22	JC	5015581
Toluene	ND		5	1	05/11/09 20:22	JC	5015581
Trichloroethene	ND		5	1	05/11/09 20:22	JC	5015581
Trichlorofluoromethane	ND		5	1	05/11/09 20:22	JC	5015581
Vinyl acetate	ND		10	1	05/11/09 20:22	JC	5015581
Vinyl chloride	ND		2	1	05/11/09 20:22	JC	5015581
cis-1,2-Dichloroethene	ND		5	1	05/11/09 20:22	JC	5015581
cis-1,3-Dichloropropene	ND		5	1	05/11/09 20:22	JC	5015581
m,p-Xylene	ND		5	1	05/11/09 20:22	JC	5015581
o-Xylene	ND		5	1	05/11/09 20:22	JC	5015581
trans-1,2-Dichloroethene	ND		5	1	05/11/09 20:22	JC	5015581
trans-1,3-Dichloropropene	ND		5	1	05/11/09 20:22	JC	5015581
1,2-Dichloroethene (total)	ND		5	1	05/11/09 20:22	JC	5015581
Xylenes,Total	ND		5	1	05/11/09 20:22	JC	5015581
Surr: 1,2-Dichloroethane-d4	94.2		% 78-116	1	05/11/09 20:22	JC	5015581
Surr: 4-Bromofluorobenzene	104		% 74-125	1	05/11/09 20:22	JC	5015581
Surr: Toluene-d8	96.7		% 82-118	1	05/11/09 20:22	JC	5015581

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Diesel Range Organics
Method: SW8015B
WorkOrder: 09050091
Lab Batch ID: 89962

Method Blank

RunID: HP_V_090506B-5014268 Units: mg/L
Analysis Date: 05/06/2009 16:19 Analyst: NW
Preparation Date: 05/04/2009 12:29 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-02C	MW-4
09050091-03C	RB-050209-1

Analyte	Result	Rep Limit
Diesel Range Organics (C10-C28)	ND	0.10
Surr: n-Pentacosane	40.2	20-150

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HP_V_090506B-5014269 Units: mg/L
Analysis Date: 05/06/2009 16:39 Analyst: NW
Preparation Date: 05/04/2009 12:29 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics (C10-C28)	1.00	0.792	79.2	1.00	0.802	80.2	1.3	20	21	130
Surr: n-Pentacosane	0.0500	0.0334	66.8	0.0500	0.0321	64.2	4.0	30	20	150

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Hydrocarbons
Method: SW8015B
WorkOrder: 09050091
Lab Batch ID: 89983

Method Blank

RunID: HP_V_090611B-5063332 Units: mg/kg
Analysis Date: 05/12/2009 23:03 Analyst: AM
Preparation Date: 05/05/2009 11:45 Prep By: FAK Method SW3550B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-01D	MW-4-52-55

Analyte	Result	Rep Limit
Mineral Spirits Range Organics	ND	10
Surr: n-Pentacosane	69.4	20-154

Laboratory Control Sample (LCS)

RunID: HP_V_090611B-5063333 Units: mg/kg
Analysis Date: 05/12/2009 23:23 Analyst: AM
Preparation Date: 05/05/2009 11:45 Prep By: FAK Method SW3550B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Mineral Spirits Range Organics	33.3	27.4	82.1	50	150
Surr: n-Pentacosane	1.66	1.34	81.0	20	154

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050091-01
RunID: HP_V_090611B-5063335 Units: mg/kg
Analysis Date: 05/13/2009 0:04 Analyst: AM
Preparation Date: 05/05/2009 11:45 Prep By: Method SW3550B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Mineral Spirits Range Organics	ND	33.3	27.8	83.4	33.3	28.0	84.2	0.908	50	50	150
Surr: n-Pentacosane	ND	1.66	1.54	92.7	1.66	1.32	79.6	15.1	30	20	154

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Hydrocarbons **WorkOrder:** 09050091
Method: SW8015B **Lab Batch ID:** 89983

Method Blank

RunID: HP_V_090512B-5017045 Units: mg/Kg
Analysis Date: 05/12/2009 23:03 Analyst: NW
Preparation Date: 05/05/2009 11:45 Prep By: FAK Method SW3550B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-01C	MW-4-52-55

Analyte	Result	Rep Limit
Diesel Range Organics (C10-C28)	ND	5.0
Surr: n-Pentacosane	69.4	20-154

Laboratory Control Sample (LCS)

RunID: HP_V_090512B-5017046 Units: mg/Kg
Analysis Date: 05/12/2009 23:23 Analyst: NW
Preparation Date: 05/05/2009 11:45 Prep By: FAK Method SW3550B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Diesel Range Organics (C10-C28)	33.3	27.4	82.1	57	150
Surr: n-Pentacosane	1.66	1.34	81.0	20	154

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050091-01
RunID: HP_V_090512B-5017048 Units: mg/Kg
Analysis Date: 05/13/2009 0:04 Analyst: NW
Preparation Date: 05/05/2009 11:45 Prep By: FAK Method SW3550B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Diesel Range Organics (C10-C28)	6.26	33.3	27.8	64.6	33.3	28.0	65.4	0.908	50	21	175
Surr: n-Pentacosane	ND	1.66	1.54	92.7	1.66	1.32	79.6	15.1	30	20	154

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
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HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Headspace Gas Analysis **WorkOrder:** 09050091
Method: RSK147 **Lab Batch ID:** R272023

Method Blank

RunID: VARC_090507A-5009408 Units: mg/L
Analysis Date: 05/07/2009 9:46 Analyst: V_L

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-02F	MW-4

Analyte	Result	Rep Limit
Methane	ND	0.0012

Sample Duplicate

Original Sample: 09050065-04
RunID: VARC_090507A-5009409 Units: mg/L
Analysis Date: 05/07/2009 10:08 Analyst: V_L

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Methane	ND	ND	0	50

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Gasoline Range Organics **WorkOrder:** 09050091
Method: SW8015B **Lab Batch ID:** R272171

Method Blank

RunID: HP_S_090508A-5011642 Units: mg/Kg
Analysis Date: 05/08/2009 8:55 Analyst: EMB
Preparation Date: 05/08/2009 8:55 Prep By: Method SW5030B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-01B	MW-4-52-55

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	100.3	63-142
Surr: 4-Bromofluorobenzene	101.6	50-159

Laboratory Control Sample (LCS)

RunID: HP_S_090508A-5011643 Units: mg/Kg
Analysis Date: 05/08/2009 9:52 Analyst: EMB
Preparation Date: 05/08/2009 9:52 Prep By: Method SW5030B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	0.962	96.2	70	130
Surr: 1,4-Difluorobenzene	0.100	0.102	102	63	142
Surr: 4-Bromofluorobenzene	0.100	0.108	108	50	159

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050292-01
RunID: HP_S_090508A-5012651 Units: mg/kg-dry
Analysis Date: 05/08/2009 21:58 Analyst: EMB
Preparation Date: 05/08/2009 9:19 Prep By: XML Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	1.98	0.762	38.4	1.98	0.668	33.7	13.3	50	26	147
Surr: 1,4-Difluorobenzene	ND	0.198	0.214	108	0.198	0.211	106	1.59	30	63	142
Surr: 4-Bromofluorobenzene	ND	0.198	0.205	103	0.198	0.206	104	0.483	30	50	159

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Gasoline Range Organics **WorkOrder:** 09050091
Method: SW8015B **Lab Batch ID:** R272349

Method Blank

RunID: HP_P_090508A-5014432 Units: mg/L
Analysis Date: 05/08/2009 5:40 Analyst: CLJ

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-02B	MW-4
09050091-03B	RB-050209-1

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	90.2	60-155
Surr: 4-Bromofluorobenzene	103.9	50-158

Laboratory Control Sample (LCS)

RunID: HP_P_090508A-5014430 Units: mg/L
Analysis Date: 05/08/2009 4:43 Analyst: CLJ

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	1.03	103	42	136
Surr: 1,4-Difluorobenzene	0.100	0.101	101	60	155
Surr: 4-Bromofluorobenzene	0.100	0.107	107	50	158

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050042-26
RunID: HP_P_090508A-5014436 Units: mg/L
Analysis Date: 05/08/2009 8:30 Analyst: CLJ

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	4.30	10	11.9	75.9	10	12.2	79.4	2.90	36	22	174
Surr: 1,4-Difluorobenzene	ND	1	0.983	98.3	1	0.986	98.6	0.274	30	60	155
Surr: 4-Bromofluorobenzene	ND	1	1.07	107	1	1.06	106	1.08	30	50	158

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050091
Method: SW8270C **Lab Batch ID:** 89968

Method Blank

RunID: R_090508B-5011969 Units: ug/L
Analysis Date: 05/08/2009 10:32 Analyst: E_R
Preparation Date: 05/04/2009 15:05 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-02D	MW-4
09050091-03D	RB-050209-1

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Diphenylhydrazine	ND	10
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,4,5-Trichlorophenol	ND	10
2,4,6-Trichlorophenol	ND	5.0
2,4-Dichlorophenol	ND	5.0
2,4-Dimethylphenol	ND	5.0
2,4-Dinitrophenol	ND	25
2,4-Dinitrotoluene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Chlorophenol	ND	5.0
2-Methylnaphthalene	ND	5.0
2-Nitroaniline	ND	25
2-Nitrophenol	ND	5.0
3,3'-Dichlorobenzidine	ND	10
3-Nitroaniline	ND	25
4,6-Dinitro-2-methylphenol	ND	25
4-Bromophenyl phenyl ether	ND	5.0
4-Chloro-3-methylphenol	ND	5.0
4-Chloroaniline	ND	5.0
4-Chlorophenyl phenyl ether	ND	5.0
4-Nitroaniline	ND	25
4-Nitrophenol	ND	25
Acenaphthene	ND	5.0
Acenaphthylene	ND	5.0
Aniline	ND	5.0
Anthracene	ND	5.0
Benz(a)anthracene	ND	5.0
Benzo(a)pyrene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzoic acid	ND	25
Benzyl alcohol	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Butyl benzyl phthalate	ND	5.0
Carbazole	ND	5.0
Chrysene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Dibenzofuran	ND	5.0

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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E - Estimated Value exceeds calibration curve
MI - Matrix Interference
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TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050091
Method: SW8270C **Lab Batch ID:** 89968

Method Blank

RunID: R_090508B-5011969 Units: ug/L
Analysis Date: 05/08/2009 10:32 Analyst: E_R
Preparation Date: 05/04/2009 15:05 Prep By: N_M Method SW3510C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	5.0
Dimethyl phthalate	ND	5.0
Di-n-butyl phthalate	ND	5.0
Di-n-octyl phthalate	ND	5.0
Fluoranthene	ND	5.0
Fluorene	ND	5.0
Hexachlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
Hexachloroethane	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Isophorone	ND	5.0
Naphthalene	ND	5.0
Nitrobenzene	ND	5.0
N-Nitrosodi-n-propylamine	ND	5.0
N-Nitrosodiphenylamine	ND	5.0
Pentachlorophenol	ND	25
Phenanthrene	ND	5.0
Phenol	ND	5.0
Pyrene	ND	5.0
Pyridine	ND	5.0
2-Methylphenol	ND	5.0
3 & 4-Methylphenol	ND	5.0
Surr: 2,4,6-Tribromophenol	111.6	10-123
Surr: 2-Fluorobiphenyl	78.2	23-116
Surr: 2-Fluorophenol	98.7	16-110
Surr: Nitrobenzene-d5	68.6	21-114
Surr: Phenol-d5	104.4	10-110
Surr: Terphenyl-d14	88.4	22-141

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09041007-02
RunID: R_090508B-5011971 Units: ug/L
Analysis Date: 05/08/2009 14:03 Analyst: E_R
Preparation Date: 05/04/2009 15:05 Prep By: N_M Method SW3510C

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050091
Method: SW8270C **Lab Batch ID:** 89968

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2,4-Trichlorobenzene	ND	25	19.3	77.2	25	19.3	77.2	0	39	10	142
1,2-Dichlorobenzene	ND	25	19.3	77.2	25	19.2	76.8	0.519	50	20	150
1,2-Diphenylhydrazine	ND	25	18.7	74.8	25	18.9	75.6	1.06	50	10	251
1,3-Dichlorobenzene	ND	25	18.3	73.2	25	18.6	74.4	1.63	50	20	150
1,4-Dichlorobenzene	ND	25	18.4	73.6	25	18.6	74.4	1.08	45	20	150
2,4,5-Trichlorophenol	ND	25	19.8	79.2	25	19.4	77.6	2.04	50	30	150
2,4,6-Trichlorophenol	ND	25	21.5	86.0	25	21.0	84.0	2.35	50	30	150
2,4-Dichlorophenol	ND	25	19.8	79.2	25	19.0	76.0	4.12	50	30	150
2,4-Dimethylphenol	ND	25	19.0	76.0	25	18.3	73.2	3.75	50	32	140
2,4-Dinitrophenol	ND	25	19.9	79.6	25	17.5	70.0	12.8	50	10	160
2,4-Dinitrotoluene	ND	25	21.4	85.6	25	20.8	83.2	2.84	50	30	150
2,6-Dinitrotoluene	ND	25	20.6	82.4	25	20.4	81.6	0.976	50	30	150
2-Chloronaphthalene	ND	25	20.5	82.0	25	20.4	81.6	0.489	50	30	150
2-Chlorophenol	ND	25	19.8	79.2	25	20.2	80.8	2.00	40	23	134
2-Methylnaphthalene	ND	25	19.9	79.6	25	19.9	79.6	0	50	20	170
2-Nitroaniline	ND	25	19.3	77.2	25	18.8	75.2	2.62	50	20	160
2-Nitrophenol	ND	25	20.3	81.2	25	19.9	79.6	1.99	50	29	182
3,3'-Dichlorobenzidine	ND	25	18.8	75.2	25	18.8	75.2	0	50	30	200
3-Nitroaniline	ND	25	16.9	67.6	25	17.0	68.0	0.590	50	20	160
4,6-Dinitro-2-methylphenol	ND	25	18.4	73.6	25	18.2	72.8	1.09	50	10	160
4-Bromophenyl phenyl ether	ND	25	19.3	77.2	25	19.2	76.8	0.519	50	30	150
4-Chloro-3-methylphenol	ND	25	20.9	83.6	25	20.5	82.0	1.93	42	25	160
4-Chloroaniline	ND	25	14.0	56.0	25	13.1	52.4	6.64	50	20	160
4-Chlorophenyl phenyl ether	ND	25	20.4	81.6	25	20.3	81.2	0.491	50	25	158
4-Nitroaniline	ND	25	18.9	75.6	25	18.7	74.8	1.06	50	20	160
4-Nitrophenol	ND	25	10.2	40.8	25	10.3	41.2	0.976	50	10	132
Acenaphthene	ND	25	19.6	78.4	25	19.8	79.2	1.02	31	30	150
Acenaphthylene	ND	25	20.5	82.0	25	20.4	81.6	0.489	50	33	250
Aniline	ND	50	0	0 *	50	0	0 *	0	50	10	135
Anthracene	ND	25	20.0	80.0	25	20.3	81.2	1.49	50	27	133
Benz(a)anthracene	ND	25	19.1	76.4	25	18.9	75.6	1.05	50	33	143
Benzo(a)pyrene	ND	25	16.5	66.0	25	16.3	65.2	1.22	50	17	163
Benzo(b)fluoranthene	ND	25	18.2	72.8	25	17.0	68.0	6.82	50	24	159
Benzo(g,h,i)perylene	ND	25	18.1	72.4	25	18.2	72.8	0.551	50	30	160
Benzo(k)fluoranthene	ND	25	16.7	66.8	25	17.8	71.2	6.38	50	11	162
Benzoic acid	ND	25	22.8	91.2	25	21.7	86.8	4.94	50	10	400
Benzyl alcohol	ND	25	17.0	68.0	25	15.5	62.0	9.23	50	30	160
Bis(2-chloroethoxy)methane	ND	25	19.0	76.0	25	18.4	73.6	3.21	50	33	184
Bis(2-chloroethyl)ether	ND	25	19.3	77.2	25	19.3	77.2	0	50	12	158

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050091
Method: SW8270C **Lab Batch ID:** 89968

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09041007-02
RunID: R_090508B-5011971 Units: ug/L
Analysis Date: 05/08/2009 14:03 Analyst: E_R
Preparation Date: 05/04/2009 15:05 Prep By: N_M Method SW3510C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Bis(2-chloroisopropyl)ether	ND	25	20.2	80.8	25	20.3	81.2	0.494	50	20	160
Bis(2-ethylhexyl)phthalate	ND	25	16.7	66.8	25	16.3	65.2	2.42	50	10	158
Butyl benzyl phthalate	ND	25	17.6	70.4	25	17.5	70.0	0.570	50	30	160
Carbazole	ND	25	19.9	79.6	25	19.9	79.6	0	50	30	150
Chrysene	ND	25	19.0	76.0	25	19.0	76.0	0	50	17	168
Dibenz(a,h)anthracene	ND	25	17.6	70.4	25	18.6	74.4	5.52	50	30	160
Dibenzofuran	ND	25	20.7	82.8	25	20.6	82.4	0.484	50	30	150
Diethyl phthalate	ND	25	19.4	77.6	25	19.4	77.6	0	50	30	160
Dimethyl phthalate	ND	25	20.0	80.0	25	20.0	80.0	0	50	30	160
Di-n-butyl phthalate	ND	25	19.1	76.4	25	18.7	74.8	2.12	50	30	160
Di-n-octyl phthalate	ND	25	16.8	67.2	25	17.1	68.4	1.77	50	20	150
Fluoranthene	ND	25	20.5	82.0	25	21.0	84.0	2.41	50	26	137
Fluorene	ND	25	20.0	80.0	25	20.2	80.8	0.995	50	30	150
Hexachlorobenzene	ND	25	19.8	79.2	25	19.7	78.8	0.506	50	20	150
Hexachlorobutadiene	ND	25	18.0	72.0	25	17.7	70.8	1.68	50	20	140
Hexachlorocyclopentadiene	ND	25	24.8	99.2	25	24.4	97.6	1.63	50	10	150
Hexachloroethane	ND	25	16.7	66.8	25	17.0	68.0	1.78	50	10	140
Indeno(1,2,3-cd)pyrene	ND	25	20.6	82.4	25	20.3	81.2	1.47	50	30	160
Isophorone	ND	25	19.8	79.2	25	19.6	78.4	1.02	50	21	196
Naphthalene	ND	25	20.3	81.2	25	20.2	80.8	0.494	50	21	133
Nitrobenzene	ND	25	18.2	72.8	25	17.9	71.6	1.66	50	20	160
N-Nitrosodi-n-propylamine	ND	25	18.3	73.2	25	18.4	73.6	0.545	38	30	160
N-Nitrosodiphenylamine	ND	50	47.8	95.6	50	48.2	96.4	0.833	50	30	150
Pentachlorophenol	ND	25	19.9	79.6	25	19.3	77.2	3.06	50	14	176
Phenanthrene	ND	25	19.8	79.2	25	19.9	79.6	0.504	50	10	140
Phenol	ND	25	11.2	44.8	25	11.2	44.8	0	42	40	132
Pyrene	ND	25	19.0	76.0	25	18.6	74.4	2.13	38	30	150
Pyridine	ND	50	6.26	12.5	50	5.96	11.9	4.91	50	10	150
2-Methylphenol	ND	25	19.2	76.8	25	19.1	76.4	0.522	50	30	160
3 & 4-Methylphenol	ND	25	16.5	66.0	25	16.0	64.0	3.08	50	10	160
Surr: 2,4,6-Tribromophenol	ND	75	77	103	75	75.0	100	2.63	30	10	123
Surr: 2-Fluorobiphenyl	ND	50	35	70.0	50	34.9	69.8	0.286	30	23	116

Qualifiers:
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050091
Method: SW8270C **Lab Batch ID:** 89968

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09041007-02
RunID: R_090508B-5011971 Units: ug/L
Analysis Date: 05/08/2009 14:03 Analyst: E_R
Preparation Date: 05/04/2009 15:05 Prep By: N_M Method SW3510C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Surr: 2-Fluorophenol	ND	75	49.5	66.0	75	48.6	64.8	1.83	30	16	110
Surr: Nitrobenzene-d5	ND	50	32	64.0	50	32.2	64.4	0.623	30	21	114
Surr: Phenol-d5	ND	75	39.4	52.5	75	39.4	52.5	0	30	10	110
Surr: Terphenyl-d14	ND	50	29.9	59.8	50	29.6	59.2	1.01	30	22	141

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050091
Method: SW8270C **Lab Batch ID:** 90048

Method Blank

RunID: H_090513B-5017953 Units: ug/kg
Analysis Date: 05/13/2009 10:00 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-01C	MW-4-52-55

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
1,2-Diphenylhydrazine	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
2,4,5-Trichlorophenol	ND	800
2,4,6-Trichlorophenol	ND	330
2,4-Dichlorophenol	ND	330
2,4-Dimethylphenol	ND	330
2,4-Dinitrophenol	ND	800
2,4-Dinitrotoluene	ND	800
2,6-Dinitrotoluene	ND	330
2-Chloronaphthalene	ND	330
2-Chlorophenol	ND	330
2-Methylnaphthalene	ND	330
2-Nitroaniline	ND	800
2-Nitrophenol	ND	330
3,3'-Dichlorobenzidine	ND	330
3-Nitroaniline	ND	800
4,6-Dinitro-2-methylphenol	ND	800
4-Bromophenyl phenyl ether	ND	330
4-Chloro-3-methylphenol	ND	330
4-Chloroaniline	ND	330
4-Chlorophenyl phenyl ether	ND	330
4-Nitroaniline	ND	800
4-Nitrophenol	ND	800
Acenaphthene	ND	330
Acenaphthylene	ND	330
Aniline	ND	330
Anthracene	ND	330
Benz(a)anthracene	ND	330
Benzo(a)pyrene	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(g,h,i)perylene	ND	330
Benzo(k)fluoranthene	ND	330
Benzoic acid	ND	1600
Benzyl alcohol	ND	330
Bis(2-chloroethoxy)methane	ND	330
Bis(2-chloroethyl)ether	ND	330
Bis(2-chloroisopropyl)ether	ND	330
Bis(2-ethylhexyl)phthalate	ND	330
Butyl benzyl phthalate	ND	330
Carbazole	ND	330
Chrysene	ND	330
Dibenz(a,h)anthracene	ND	330
Dibenzofuran	ND	330

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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E - Estimated Value exceeds calibration curve
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09050091
Lab Batch ID: 90048

Method Blank

RunID: H_090513B-5017953 Units: ug/kg
Analysis Date: 05/13/2009 10:00 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	330
Dimethyl phthalate	ND	330
Di-n-butyl phthalate	ND	330
Di-n-octyl phthalate	ND	330
Fluoranthene	ND	330
Fluorene	ND	330
Hexachlorobenzene	ND	330
Hexachlorobutadiene	ND	330
Hexachlorocyclopentadiene	ND	330
Hexachloroethane	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Isophorone	ND	330
Naphthalene	ND	330
Nitrobenzene	ND	330
N-Nitrosodi-n-propylamine	ND	330
N-Nitrosodiphenylamine	ND	330
Pentachlorophenol	ND	800
Phenanthrene	ND	330
Phenol	ND	330
Pyrene	ND	330
Pyridine	ND	330
2-Methylphenol	ND	330
3 & 4-Methylphenol	ND	330
Surr: 2,4,6-Tribromophenol	90.4	19-135
Surr: 2-Fluorobiphenyl	67.1	15-140
Surr: 2-Fluorophenol	88.8	15-122
Surr: Nitrobenzene-d5	69.4	10-134
Surr: Phenol-d5	94.4	10-123
Surr: Terphenyl-d14	70.6	18-166

Laboratory Control Sample (LCS)

RunID: H_090513B-5017954 Units: ug/kg
Analysis Date: 05/13/2009 10:29 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,2,4-Trichlorobenzene	850	384	45.2	34	116
1,2-Dichlorobenzene	850	402	47.3	32	129
1,2-Diphenylhydrazine	850	464	54.6	10	256

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09050091
Lab Batch ID: 90048

Laboratory Control Sample (LCS)

RunID: H_090513B-5017954
Analysis Date: 05/13/2009 10:29
Preparation Date: 05/06/2009 15:27
Units: ug/kg
Analyst: GY
Prep By: QMT Method SW3550C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,3-Dichlorobenzene	850	393	46.2	10	172
1,4-Dichlorobenzene	850	398	46.8	20	124
2,4,5-Trichlorophenol	850	391	46.0	40	150
2,4,6-Trichlorophenol	850	382	44.9	37	144
2,4-Dichlorophenol	850	373	43.9	39	135
2,4-Dimethylphenol	850	413	48.6	32	119
2,4-Dinitrophenol	850	266	31.3	10	191
2,4-Dinitrotoluene	850	404	47.5	30	150
2,6-Dinitrotoluene	850	413	48.6	30	150
2-Chloronaphthalene	850	506	59.5	20	175
2-Chlorophenol	850	416	48.9	23	134
2-Methylnaphthalene	850	410	48.2	30	135
2-Nitroaniline	850	417	49.1	20	175
2-Nitrophenol	850	395	46.5	29	182
3,3'-Dichlorobenzidine	850	338	39.8	10	261
3-Nitroaniline	850	406	47.8	20	175
4,6-Dinitro-2-methylphenol	850	310	36.5	10	181
4-Bromophenyl phenyl ether	850	423	49.8	20	175
4-Chloro-3-methylphenol	850	413	48.6	22	147
4-Chloroaniline	850	533	62.7	20	175
4-Chlorophenyl phenyl ether	850	399	46.9	25	158
4-Nitroaniline	850	376	44.2	20	175
4-Nitrophenol	850	312	36.7	10	132
Acenaphthene	850	401	47.2	30	160
Acenaphthylene	850	413	48.6	10	150
Aniline	1700	860	50.6	10	160
Anthracene	850	435	51.2	27	133
Benz(a)anthracene	850	414	48.7	33	143
Benzo(a)pyrene	850	362	42.6	17	163
Benzo(b)fluoranthene	850	409	48.1	24	159
Benzo(g,h,i)perylene	850	421	49.5	10	219
Benzo(k)fluoranthene	850	413	48.6	11	162
Benzoic acid	850	471	55.4	10	450
Benzyl alcohol	850	458	53.9	30	160

Qualifiers:

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E - Estimated Value exceeds calibration curve
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MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09050091
Lab Batch ID: 90048

Laboratory Control Sample (LCS)

RunID: H_090513B-5017954
Analysis Date: 05/13/2009 10:29
Preparation Date: 05/06/2009 15:27
Units: ug/kg
Analyst: GY
Prep By: QMT Method SW3550C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Bis(2-chloroethoxy)methane	850	408	48.0	33	184
Bis(2-chloroethyl)ether	850	434	51.1	28	158
Bis(2-chloroisopropyl)ether	850	447	52.6	36	166
Bis(2-ethylhexyl)phthalate	850	374	44.0	10	158
Butyl benzyl phthalate	850	408	48.0	10	152
Carbazole	850	413	48.6	45	135
Chrysene	850	411	48.4	17	168
Dibenz(a,h)anthracene	850	397	46.7	10	227
Dibenzofuran	850	415	48.8	30	160
Diethyl phthalate	850	397	46.7	10	160
Dimethyl phthalate	850	402	47.3	10	112
Di-n-butyl phthalate	850	401	47.2	40	132
Di-n-octyl phthalate	850	360	42.4	10	146
Fluoranthene	850	431	50.7	26	137
Fluorene	850	399	46.9	35	135
Hexachlorobenzene	850	425	50.0	10	152
Hexachlorobutadiene	850	365	42.9	20	140
Hexachlorocyclopentadiene	850	578	68.0	10	152
Hexachloroethane	850	389	45.8	25	118
Indeno(1,2,3-cd)pyrene	850	412	48.5	10	171
Isophorone	850	440	51.8	21	196
Naphthalene	850	416	48.9	21	133
Nitrobenzene	850	404	47.5	35	180
N-Nitrosodi-n-propylamine	850	396	46.6	10	230
N-Nitrosodiphenylamine	1700	1040	61.2	30	160
Pentachlorophenol	850	147	17.3	14	176
Phenanthrene	850	420	49.4	35	135
Phenol	850	455	53.5	44	120
Pyrene	850	438	51.5	34	138
Pyridine	1700	741	43.6	10	150
2-Methylphenol	850	436	51.3	40	160
3 & 4-Methylphenol	850	396	46.6	40	160
Surr: 2,4,6-Tribromophenol	2500	1580	63.2	19	135
Surr: 2-Fluorobiphenyl	1700	807	47.5	15	140

Qualifiers:

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E - Estimated Value exceeds calibration curve
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09050091
Lab Batch ID: 90048

Laboratory Control Sample (LCS)

RunID: H_090513B-5017954
Analysis Date: 05/13/2009 10:29
Preparation Date: 05/06/2009 15:27
Units: ug/kg
Analyst: GY
Prep By: QMT Method SW3550C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Surr: 2-Fluorophenol	2500	1660	66.4	15	122
Surr: Nitrobenzene-d5	1700	837	49.2	32	153
Surr: Phenol-d5	2500	1720	68.8	10	123
Surr: Terphenyl-d14	1700	816	48.0	18	166

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050091-01
RunID: H_090508E-5017905
Analysis Date: 05/08/2009 20:15
Preparation Date: 05/06/2009 15:27
Units: ug/kg
Analyst: GY
Prep By: QMT Method SW3550C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2,4-Trichlorobenzene	ND	850	437	51.4	850	292	34.4	39.8 *	28	34	116
1,2-Dichlorobenzene	ND	850	443	52.1	850	329	38.7	29.5	60	32	129
1,2-Diphenylhydrazine	ND	850	500	58.8	850	326	38.4	42.1	60	10	256
1,3-Dichlorobenzene	ND	850	417	49.1	850	318	37.4	26.9	60	10	172
1,4-Dichlorobenzene	ND	850	425	50.0	850	314	36.9	30.0 *	28	20	124
2,4,5-Trichlorophenol	ND	850	477	56.1	850	297	34.9 *	46.5	60	40	150
2,4,6-Trichlorophenol	ND	850	448	52.7	850	303	35.6 *	38.6	60	37	144
2,4-Dichlorophenol	ND	850	429	50.5	850	283	33.3 *	41.0	60	39	135
2,4-Dimethylphenol	ND	850	458	53.9	850	303	35.6	40.7	60	32	119
2,4-Dinitrophenol	ND	850	0	0 *	850	0	0 *	0	60	10	191
2,4-Dinitrotoluene	ND	850	485	57.1	850	301	35.4	46.8	50	30	150
2,6-Dinitrotoluene	ND	850	470	55.3	850	292	34.4	46.7	60	30	150
2-Chloronaphthalene	ND	850	486	57.2	850	335	39.4	36.8	60	20	175
2-Chlorophenol	ND	850	465	54.7	850	327	38.5	34.8	40	23	134
2-Methylnaphthalene	ND	850	476	56.0	850	318	37.4	39.8	60	30	135
2-Nitroaniline	ND	850	478	56.2	850	307	36.1	43.6	60	20	175
2-Nitrophenol	ND	850	434	51.1	850	296	34.8	37.8	60	29	182
3,3'-Dichlorobenzidine	ND	850	451	53.1	850	271	31.9	49.9	60	10	261

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09050091
Lab Batch ID: 90048

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050091-01
RunID: H_090508E-5017905 Units: ug/kg
Analysis Date: 05/08/2009 20:15 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
3-Nitroaniline	ND	850	441	51.9	850	267	31.4	49.2	60	20	175
4,6-Dinitro-2-methylphenol	ND	850	43.9	5.16 *	850	27.8	3.27 *	44.9	60	10	181
4-Bromophenyl phenyl ether	ND	850	459	54.0	850	298	35.1	42.5	60	20	175
4-Chloro-3-methylphenol	ND	850	501	58.9	850	311	36.6	46.8 *	42	22	147
4-Chloroaniline	ND	850	561	66.0	850	353	41.5	45.5	60	20	175
4-Chlorophenyl phenyl ether	ND	850	447	52.6	850	305	35.9	37.8	60	25	158
4-Nitroaniline	ND	850	448	52.7	850	274	32.2	48.2	60	20	175
4-Nitrophenol	ND	850	480	56.5	850	243	28.6	65.6 *	50	10	132
Acenaphthene	ND	850	459	54.0	850	303	35.6	40.9 *	31	30	160
Acenaphthylene	ND	850	464	54.6	850	312	36.7	39.2	50	10	150
Aniline	ND	1700	911	53.6	1700	631	37.1	36.3	60	10	160
Anthracene	ND	850	493	58.0	850	303	35.6	47.7	50	27	133
Benz(a)anthracene	ND	850	522	61.4	850	321	37.8	47.7	50	33	143
Benzo(a)pyrene	ND	850	452	53.2	850	282	33.2	46.3	60	17	163
Benzo(b)fluoranthene	ND	850	479	56.4	850	304	35.8	44.7	60	24	159
Benzo(g,h,i)perylene	ND	850	468	55.1	850	286	33.6	48.3	60	10	219
Benzo(k)fluoranthene	ND	850	514	60.5	850	310	36.5	49.5	60	11	162
Benzoic acid	ND	850	0	0 *	850	0	0 *	0	60	10	450
Benzyl alcohol	ND	850	453	53.3	850	290	34.1	43.9	60	30	160
Bis(2-chloroethoxy)methane	ND	850	461	54.2	850	302	35.5	41.7	60	33	184
Bis(2-chloroethyl)ether	ND	850	474	55.8	850	323	38.0	37.9	60	28	158
Bis(2-chloroisopropyl)ether	ND	850	484	56.9	850	346	40.7	33.3	60	36	166
Bis(2-ethylhexyl)phthalate	ND	850	534	62.8	850	317	37.3	51.0	60	10	158
Butyl benzyl phthalate	ND	850	529	62.2	850	326	38.4	47.5	60	10	152
Carbazole	ND	850	491	57.8	850	301	35.4 *	48.0	60	45	135
Chrysene	ND	850	508	59.8	850	318	37.4	46.0	60	17	168
Dibenz(a,h)anthracene	ND	850	479	56.4	850	278	32.7	53.1	60	10	227
Dibenzofuran	ND	850	462	54.4	850	309	36.4 *	39.7	60	45	135
Diethyl phthalate	ND	850	466	54.8	850	299	35.2	43.7	60	10	160
Dimethyl phthalate	ND	850	471	55.4	850	306	36.0	42.5	60	10	112
Di-n-butyl phthalate	ND	850	516	60.7	850	304	35.8 *	51.7	60	40	132
Di-n-octyl phthalate	ND	850	518	60.9	850	313	36.8	49.3	60	10	146

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050091
Method: SW8270C **Lab Batch ID:** 90048

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050091-01
RunID: H_090508E-5017905 Units: ug/kg
Analysis Date: 05/08/2009 20:15 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Fluoranthene	ND	850	521	61.3	850	328	38.6	45.5	60	26	137
Fluorene	ND	850	455	53.5	850	304	35.8 *	39.8	60	45	135
Hexachlorobenzene	ND	850	468	55.1	850	292	34.4	46.3	60	10	152
Hexachlorobutadiene	ND	850	424	49.9	850	278	32.7	41.6	60	20	140
Hexachlorocyclopentadiene	ND	850	460	54.1	850	321	37.8	35.6	60	10	152
Hexachloroethane	ND	850	433	50.9	850	308	36.2	33.7	60	25	118
Indeno(1,2,3-cd)pyrene	ND	850	466	54.8	850	287	33.8	47.5	60	10	171
Isophorone	ND	850	505	59.4	850	316	37.2	46.0	60	21	196
Naphthalene	ND	850	461	54.2	850	316	37.2	37.3	60	21	133
Nitrobenzene	ND	850	436	51.3	850	305	35.9	35.4	60	35	180
N-Nitrosodi-n-propylamine	ND	850	483	56.8	850	338	39.8	35.3	38	10	230
N-Nitrosodiphenylamine	ND	1700	1160	68.2	1700	739	43.5	44.3	60	30	160
Pentachlorophenol	ND	850	219	25.8	850	103	12.1 *	72.0 *	50	14	176
Phenanthrene	ND	850	476	56.0	850	303	35.6 *	44.4	60	45	135
Phenol	ND	850	492	57.9	850	350	41.2 *	33.7	42	44	120
Pyrene	ND	850	530	62.4	850	325	38.2	48.0 *	31	26	127
Pyridine	ND	1700	685	40.3	1700	492	28.9	32.8	60	10	150
2-Methylphenol	ND	850	490	57.6	850	349	41.1	33.6	60	40	160
3 & 4-Methylphenol	ND	850	445	52.4	850	ND	35.3 *	38.9	60	40	160
Surr: 2,4,6-Tribromophenol	ND	2500	1860	74.4	2500	1140	45.6	48.0 *	30	19	135
Surr: 2-Fluorobiphenyl	ND	1700	884	52.0	1700	599	35.2	38.4 *	30	15	140
Surr: 2-Fluorophenol	ND	2500	1700	68.0	2500	1200	48.0	34.5 *	30	15	122
Surr: Nitrobenzene-d5	ND	1700	901	53.0	1700	597	35.1	40.6 *	30	10	134
Surr: Phenol-d5	ND	2500	1860	74.4	2500	1260	50.4	38.5 *	30	10	123
Surr: Terphenyl-d14	ND	1700	959	56.4	1700	577	33.9	49.7 *	30	18	166

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272205

Method Blank

RunID: M_090507E-5012044 Units: ug/kg
Analysis Date: 05/07/2009 14:32 Analyst: TLE

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-01A	MW-4-52-55

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	100
Acrylonitrile	ND	50
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Qualifiers:

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D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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HOUSTON LABORATORY
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272205

Method Blank

RunID: M_090507E-5012044 Units: ug/kg
Analysis Date: 05/07/2009 14:32 Analyst: TLE

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	10
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	87.4	64-115
Surr: 4-Bromofluorobenzene	106.5	65-131
Surr: Toluene-d8	95.5	75-136

Laboratory Control Sample (LCS)

RunID: M_090507E-5012043 Units: ug/kg
Analysis Date: 05/07/2009 12:31 Analyst: TLE

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	20.3	102	56	140
1,1,1-Trichloroethane	20.0	21.2	106	58	135
1,1,2,2-Tetrachloroethane	20.0	19.9	99.3	52	139
1,1,2-Trichloroethane	20.0	20.2	101	81	138
1,1-Dichloroethane	20.0	20.1	101	56	137

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
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HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272205

Laboratory Control Sample (LCS)

RunID: M_090507E-5012043 Units: ug/kg
Analysis Date: 05/07/2009 12:31 Analyst: TLE

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	16.2	81.0	56	135
1,1-Dichloropropene	20.0	21.2	106	62	132
1,2,3-Trichlorobenzene	20.0	22.9	115	53	144
1,2,3-Trichloropropane	20.0	19.9	99.3	44	141
1,2,4-Trichlorobenzene	20.0	21.9	109	51	143
1,2,4-Trimethylbenzene	20.0	18.8	94.0	59	148
1,2-Dibromo-3-chloropropane	20.0	19.2	96.2	53	144
1,2-Dibromoethane	20.0	20.8	104	55	138
1,2-Dichlorobenzene	20.0	20.1	101	63	137
1,2-Dichloroethane	20.0	20.5	103	56	135
1,2-Dichloropropane	20.0	21.1	106	62	132
1,3,5-Trimethylbenzene	20.0	18.4	91.8	54	145
1,3-Dichlorobenzene	20.0	20.1	101	66	137
1,3-Dichloropropane	20.0	19.6	98.0	59	138
1,4-Dichlorobenzene	20.0	19.9	99.5	61	142
2,2-Dichloropropane	20.0	19.4	97.2	55	138
2-Butanone	20.0	25.0	125	10	191
2-Chloroethyl vinyl ether	20.0	25.9	129	10	181
2-Chlorotoluene	20.0	19.5	97.6	64	139
2-Hexanone	20.0	19.8	98.8	18	182
4-Chlorotoluene	20.0	19.0	95.0	63	138
4-Isopropyltoluene	20.0	19.4	97.0	59	156
4-Methyl-2-pentanone	20.0	20.3	102	10	166
Acetone	20.0	25.5	128	10	200
Acrylonitrile	20.0	19.8	98.9	38	169
Benzene	20.0	20.8	104	64	130
Bromobenzene	20.0	19.0	95.0	58	139
Bromochloromethane	20.0	24.4	122	66	127
Bromodichloromethane	20.0	21.5	108	59	134
Bromoform	20.0	19.5	97.3	65	135
Bromomethane	20.0	20.3	101	40	134
Carbon disulfide	20.0	18.1	90.4	53	130
Carbon tetrachloride	20.0	19.2	96.1	61	132
Chlorobenzene	20.0	21.2	106	60	140

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272205

Laboratory Control Sample (LCS)

RunID: M_090507E-5012043 Units: ug/kg
Analysis Date: 05/07/2009 12:31 Analyst: TLE

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	16.9	84.7	45	140
Chloroform	20.0	21.2	106	64	131
Chloromethane	20.0	18.3	91.5	39	140
Dibromochloromethane	20.0	19.4	97.1	54	138
Dibromomethane	20.0	23.1	115	64	131
Dichlorodifluoromethane	20.0	15.1	75.3	35	133
Ethylbenzene	20.0	20.9	104	58	143
Hexachlorobutadiene	20.0	25.0	125	56	166
Isopropylbenzene	20.0	18.5	92.3	58	133
Methyl tert-butyl ether	40.0	41.8	104	50	132
Methylene chloride	20.0	18.9	94.6	52	144
Naphthalene	20.0	20.5	103	51	139
n-Butylbenzene	20.0	19.3	96.5	59	164
n-Propylbenzene	20.0	18.7	93.6	57	140
sec-Butylbenzene	20.0	19.2	95.9	63	146
Styrene	20.0	21.1	105	57	134
tert-Butylbenzene	20.0	18.6	93.2	57	144
Tetrachloroethene	20.0	22.5	113	41	156
Toluene	20.0	20.2	101	63	139
Trichloroethene	20.0	23.6	118	62	135
Trichlorofluoromethane	20.0	17.2	85.9	53	140
Vinyl acetate	20.0	19.2	96.2	17	163
Vinyl chloride	20.0	19.3	96.6	45	148
cis-1,2-Dichloroethene	20.0	23.4	117	70	129
cis-1,3-Dichloropropene	20.0	22.0	110	58	132
m,p-Xylene	40.0	42.5	106	64	137
o-Xylene	20.0	21.6	108	64	143
trans-1,2-Dichloroethene	20.0	22.8	114	63	130
trans-1,3-Dichloropropene	20.0	21.1	105	58	128
1,2-Dichloroethene (total)	40.0	46.2	116	63	130
Xylenes,Total	60.0	64.1	107	64	143
Surr: 1,2-Dichloroethane-d4	50.0	46.1	92.3	64	115
Surr: 4-Bromofluorobenzene	50.0	52.8	106	65	131
Surr: Toluene-d8	50.0	47	94.0	75	136

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272205

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050250-03
RunID: M_090507E-5012046 Units: ug/kg-dry
Analysis Date: 05/07/2009 16:03 Analyst: TLE
Preparation Date: 05/07/2009 11:01 Prep By: E_G Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	25.3	20.6	81.5	25.3	20.8	82.1	0.679	30	38	129
1,1,1-Trichloroethane	ND	25.3	27.7	109	25.3	28.5	112	2.79	30	44	154
1,1,2,2-Tetrachloroethane	ND	25.3	14.6	57.8	25.3	15.1	59.8	3.39	30	14	143
1,1,2-Trichloroethane	ND	25.3	17.0	67.1	25.3	17.2	68.0	1.21	30	34	135
1,1-Dichloroethane	ND	25.3	24.8	98.1	25.3	24.7	97.4	0.696	30	42	146
1,1-Dichloroethene	ND	25.3	20.5	80.8	25.3	18.7	73.7	9.15	22	39	168
1,1-Dichloropropene	ND	25.3	28.7	113	25.3	29.0	115	1.12	30	42	156
1,2,3-Trichlorobenzene	ND	25.3	16.9	66.9	25.3	17.6	69.4	3.68	30	10	125
1,2,3-Trichloropropane	ND	25.3	14.9	58.8	25.3	15.5	61.4	4.39	30	10	154
1,2,4-Trichlorobenzene	ND	25.3	17.4	68.7	25.3	18.0	71.1	3.55	30	10	128
1,2,4-Trimethylbenzene	ND	25.3	19.4	76.6	25.3	19.6	77.6	1.25	30	22	139
1,2-Dibromo-3-chloropropane	ND	25.3	14.1	55.8	25.3	15.8	62.6	11.5	30	23	139
1,2-Dibromoethane	ND	25.3	16.3	64.4	25.3	16.5	65.0	0.897	30	32	129
1,2-Dichlorobenzene	ND	25.3	17.4	68.6	25.3	17.9	70.7	3.10	30	17	130
1,2-Dichloroethane	ND	25.3	19.3	76.1	25.3	19.7	77.9	2.39	30	15	158
1,2-Dichloropropane	ND	25.3	23.1	91.1	25.3	22.6	89.2	2.10	30	42	133
1,3,5-Trimethylbenzene	ND	25.3	20.2	79.7	25.3	20.5	80.9	1.41	30	22	135
1,3-Dichlorobenzene	ND	25.3	19.2	75.8	25.3	19.3	76.1	0.362	30	22	130
1,3-Dichloropropane	ND	25.3	16.4	64.7	25.3	16.4	64.8	0.193	30	37	131
1,4-Dichlorobenzene	ND	25.3	18.2	71.8	25.3	18.4	72.8	1.35	30	20	129
2,2-Dichloropropane	ND	25.3	25.0	98.8	25.3	25.6	101	2.35	30	39	155
2-Butanone	ND	25.3	25.5	101	25.3	26.2	103	2.64	30	10	200
2-Chloroethyl vinyl ether	ND	25.3	15.3	60.5	25.3	16.7	66.0	8.69	30	10	168
2-Chlorotoluene	ND	25.3	20.2	79.8	25.3	20.5	80.9	1.47	30	30	133
2-Hexanone	ND	25.3	14.6	57.6	25.3	16.1	63.8	10.1	30	14	151
4-Chlorotoluene	ND	25.3	18.8	74.4	25.3	19.0	75.0	0.870	30	24	133
4-Isopropyltoluene	ND	25.3	21.8	86.1	25.3	22.1	87.4	1.50	30	17	143
4-Methyl-2-pentanone	ND	25.3	15.6	61.6	25.3	16.9	66.9	8.20	30	10	176
Acetone	ND	25.3	26.9	106	25.3	30.1	119	11.2	30	10	200
Acrylonitrile	ND	25.3	17.8	70.4	25.3	19.8	78.3	10.6	30	10	200

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272205

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050250-03
RunID: M_090507E-5012046 Units: ug/kg-dry
Analysis Date: 05/07/2009 16:03 Analyst: TLE
Preparation Date: 05/07/2009 11:01 Prep By: E_G Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	25.3	25.3	99.8	25.3	25.3	99.9	0.110	21	49	135
Bromobenzene	ND	25.3	17.3	68.5	25.3	17.5	69.0	0.829	30	29	127
Bromochloromethane	ND	25.3	20.8	82.3	25.3	21.3	83.9	2.02	30	27	147
Bromodichloromethane	ND	25.3	21.4	84.4	25.3	21.0	83.1	1.61	30	32	138
Bromoform	ND	25.3	15.3	60.3	25.3	15.7	62.0	2.85	30	27	129
Bromomethane	ND	25.3	24.2	95.6	25.3	23.6	93.2	2.64	30	32	142
Carbon disulfide	ND	25.3	24.6	97.3	25.3	24.2	95.4	1.96	30	25	168
Carbon tetrachloride	ND	25.3	26.4	104	25.3	26.4	104	0.216	30	48	151
Chlorobenzene	ND	25.3	23.0	90.7	25.3	22.6	89.3	1.54	21	38	130
Chloroethane	ND	25.3	19.4	76.7	25.3	21.2	83.8	8.88	30	29	161
Chloroform	ND	25.3	23.9	94.3	25.3	24.4	96.5	2.27	30	34	153
Chloromethane	ND	25.3	22.4	88.7	25.3	23.4	92.6	4.34	30	31	151
Dibromochloromethane	ND	25.3	17.1	67.6	25.3	17.1	67.5	0.155	30	31	127
Dibromomethane	ND	25.3	19.6	77.3	25.3	20.3	80.2	3.69	30	30	141
Dichlorodifluoromethane	ND	25.3	20.9	82.4	25.3	21.4	84.4	2.36	30	15	167
Ethylbenzene	ND	25.3	25.2	99.3	25.3	24.7	97.7	1.71	30	39	135
Hexachlorobutadiene	ND	25.3	27.1	107	25.3	27.9	110	2.92	30	10	149
Isopropylbenzene	ND	25.3	23.0	90.7	25.3	22.7	89.6	1.25	30	25	142
Methyl tert-butyl ether	ND	50.6	35.3	69.7	50.6	36.6	72.3	3.71	30	19	142
Methylene chloride	ND	25.3	15.7	61.9	25.3	17.9	70.6	13.0	30	13	170
Naphthalene	ND	25.3	13.1	51.8	25.3	14.4	57.0	9.56	30	10	124
n-Butylbenzene	ND	25.3	21.8	86.1	25.3	22.1	87.1	1.14	30	10	156
n-Propylbenzene	ND	25.3	21.7	85.6	25.3	21.4	84.7	1.07	30	20	141
sec-Butylbenzene	ND	25.3	22.2	87.8	25.3	22.6	89.4	1.83	30	29	142
Styrene	ND	25.3	21.8	86.2	25.3	21.5	85.0	1.37	30	28	133
tert-Butylbenzene	ND	25.3	21.7	85.9	25.3	22.0	87.0	1.29	30	26	141
Tetrachloroethene	ND	25.3	27.5	109	25.3	27.6	109	0.487	30	33	149
Toluene	ND	25.3	24.1	95.1	25.3	24.2	95.5	0.435	21	49	133
Trichloroethene	ND	25.3	30.3	120	25.3	30.2	119	0.494	24	51	142
Trichlorofluoromethane	ND	25.3	23.4	92.4	25.3	22.1	87.2	5.77	30	24	184
Vinyl acetate	ND	25.3	14.3	56.4	25.3	14.7	57.9	2.61	30	10	174
Vinyl chloride	ND	25.3	27.6	109	25.3	27.8	110	0.978	30	29	177

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis:	**Volatile Organics by Method 8260B**	**WorkOrder:**	**09050091**
Method:	**SW8260B**	**Lab Batch ID:**	**R272205**

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked:	09050250-03		
RunID:	M_090507E-5012046	Units:	ug/kg-dry
Analysis Date:	05/07/2009 16:03	Analyst:	TLE
Preparation Date:	05/07/2009 11:01	Prep By:	E_G Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	25.3	25.2	99.5	25.3	23.5	92.7	7.12	30	38	151
cis-1,3-Dichloropropene	ND	25.3	21.5	85.0	25.3	21.7	85.6	0.663	30	31	131
m,p-Xylene	ND	50.6	50.1	99.0	50.6	49.6	98.0	1.02	30	32	140
o-Xylene	ND	25.3	24.8	97.8	25.3	24.0	94.7	3.19	30	36	142
trans-1,2-Dichloroethene	ND	25.3	29.1	115	25.3	29.2	115	0.152	30	41	153
trans-1,3-Dichloropropene	ND	25.3	19.1	75.5	25.3	19.2	75.7	0.271	30	27	128
1,2-Dichloroethene (total)	ND	50.6	54.3	107	50.6	52.7	104	3.16	30	38	153
Xylenes,Total	ND	75.9	74.9	98.6	75.9	73.6	96.9	1.73	30	32	142
Surr: 1,2-Dichloroethane-d4	ND	63.3	57.8	91.3	63.3	55.4	87.6	4.16	30	64	115
Surr: 4-Bromofluorobenzene	ND	63.3	70.7	112	63.3	69.1	109	2.28	30	65	131
Surr: Toluene-d8	ND	63.3	59.1	93.4	63.3	58.3	92.2	1.29	30	75	136

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09050091
Lab Batch ID: R272416

Method Blank

RunID: K_090511A-5015562 Units: ug/L
Analysis Date: 05/11/2009 10:29 Analyst: JC
Preparation Date: 05/11/2009 10:29 Prep By: Method

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-02A	MW-4
09050091-04A	FB-050209-1
09050091-05A	TB-050209-1

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	20
Acrylonitrile	ND	10
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Qualifiers:

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E - Estimated Value exceeds calibration curve
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D - Recovery Unreportable due to Dilution
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272416

Method Blank

RunID: K_090511A-5015562 Units: ug/L
Analysis Date: 05/11/2009 10:29 Analyst: JC
Preparation Date: 05/11/2009 10:29 Prep By: Method

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	2.0
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	90.5	78-116
Surr: 4-Bromofluorobenzene	105.5	74-125
Surr: Toluene-d8	96.5	82-118

Laboratory Control Sample (LCS)

RunID: K_090511A-5015561 Units: ug/L
Analysis Date: 05/11/2009 9:59 Analyst: JC
Preparation Date: 05/11/2009 9:59 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	18.3	91.4	71	128
1,1,1-Trichloroethane	20.0	22.0	110	61	135
1,1,2,2-Tetrachloroethane	20.0	16.1	80.6	60	133
1,1,2-Trichloroethane	20.0	17.1	85.4	77	127
1,1-Dichloroethane	20.0	17.0	85.2	68	132

Qualifiers:

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E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272416

Laboratory Control Sample (LCS)

RunID: K_090511A-5015561 Units: ug/L
Analysis Date: 05/11/2009 9:59 Analyst: JC
Preparation Date: 05/11/2009 9:59 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	17.8	88.8	65	134
1,1-Dichloropropene	20.0	19.4	97.0	68	126
1,2,3-Trichlorobenzene	20.0	18.1	90.5	36	154
1,2,3-Trichloropropane	20.0	17.6	88.2	38	153
1,2,4-Trichlorobenzene	20.0	17.1	85.4	69	144
1,2,4-Trimethylbenzene	20.0	18.5	92.7	64	128
1,2-Dibromo-3-chloropropane	20.0	23.5	118	44	141
1,2-Dibromoethane	20.0	17.6	87.8	75	124
1,2-Dichlorobenzene	20.0	17.9	89.6	68	124
1,2-Dichloroethane	20.0	21.8	109	61	138
1,2-Dichloropropane	20.0	18.0	90.1	76	123
1,3,5-Trimethylbenzene	20.0	18.8	94.2	61	127
1,3-Dichlorobenzene	20.0	17.9	89.7	68	127
1,3-Dichloropropane	20.0	16.6	82.8	76	125
1,4-Dichlorobenzene	20.0	17.8	89.2	68	124
2,2-Dichloropropane	20.0	21.8	109	42	142
2-Butanone	20.0	17.1	85.7	22	183
2-Chloroethyl vinyl ether	20.0	17.4	87.0	10	179
2-Chlorotoluene	20.0	18.2	91.1	64	132
2-Hexanone	20.0	15.6	77.8	31	178
4-Chlorotoluene	20.0	17.9	89.4	61	132
4-Isopropyltoluene	20.0	19.3	96.7	63	136
4-Methyl-2-pentanone	20.0	15.7	78.7	10	159
Acetone	20.0	16.5	82.6	10	200
Acrylonitrile	20.0	14.3	71.4	54	155
Benzene	20.0	17.6	88.1	74	123
Bromobenzene	20.0	17.4	87.0	68	125
Bromochloromethane	20.0	17.5	87.7	71	124
Bromodichloromethane	20.0	21.0	105	72	128
Bromoform	20.0	18.7	93.5	81	135
Bromomethane	20.0	13.8	69.1	53	130
Carbon disulfide	20.0	16.0	79.8	41	143
Carbon tetrachloride	20.0	24.6	123	59	142
Chlorobenzene	20.0	16.7	83.4	75	125

Qualifiers:

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HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09050091
Lab Batch ID: R272416

Laboratory Control Sample (LCS)

RunID: K_090511A-5015561
Analysis Date: 05/11/2009 9:59
Preparation Date: 05/11/2009 9:59
Units: ug/L
Analyst: JC
Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	13.7	68.7	60	134
Chloroform	20.0	18.4	91.8	71	127
Chloromethane	20.0	15.3	76.3	50	139
Dibromochloromethane	20.0	18.2	91.1	65	130
Dibromomethane	20.0	20.6	103	79	124
Dichlorodifluoromethane	20.0	27.4	137	22	162
Ethylbenzene	20.0	17.0	85.0	72	127
Hexachlorobutadiene	20.0	21.5	107	45	152
Isopropylbenzene	20.0	15.4	77.2	58	130
Methyl tert-butyl ether	40.0	38.8	97.0	63	123
Methylene chloride	20.0	16.4	81.8	61	135
Naphthalene	20.0	16.4	81.8	33	148
n-Butylbenzene	20.0	19.7	98.6	62	136
n-Propylbenzene	20.0	17.4	87.0	57	131
sec-Butylbenzene	20.0	19.1	95.4	63	131
Styrene	20.0	16.1	80.7	69	120
tert-Butylbenzene	20.0	21.6	108	59	131
Tetrachloroethene	20.0	17.7	88.6	45	173
Toluene	20.0	16.6	83.1	74	126
Trichloroethene	20.0	19.6	98.1	79	131
Trichlorofluoromethane	20.0	23.2	116	49	153
Vinyl acetate	20.0	12.0	60.1	10	167
Vinyl chloride	20.0	16.9	84.4	51	148
cis-1,2-Dichloroethene	20.0	17.0	85.1	71	128
cis-1,3-Dichloropropene	20.0	19.9	99.7	67	128
m,p-Xylene	40.0	33.5	83.8	71	129
o-Xylene	20.0	17.1	85.4	74	130
trans-1,2-Dichloroethene	20.0	17.6	87.9	66	128
trans-1,3-Dichloropropene	20.0	20.7	103	60	128
1,2-Dichloroethene (total)	40.0	34.6	86.5	66	128
Xylenes,Total	60.0	50.6	84.3	71	130
Surr: 1,2-Dichloroethane-d4	50.0	47.6	95.2	78	116
Surr: 4-Bromofluorobenzene	50.0	52	104	74	125
Surr: Toluene-d8	50.0	47.5	95.0	82	118

Qualifiers:

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HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09050091
Lab Batch ID: R272416

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050028-17
RunID: K_090511A-5015573 Units: ug/L
Analysis Date: 05/11/2009 15:56 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	20	20.7	104	20	19.5	97.4	6.31	20	68	124
1,1,1-Trichloroethane	ND	20	22.9	115	20	22.7	113	1.14	20	69	123
1,1,2,2-Tetrachloroethane	ND	20	19.4	96.8	20	17.4	87.1	10.5	20	69	130
1,1,2-Trichloroethane	ND	20	18.4	92.0	20	18.8	94.0	2.13	20	75	126
1,1-Dichloroethane	ND	20	20.2	101	20	19.9	99.6	1.20	20	65	129
1,1-Dichloroethene	ND	20	20.0	99.8	20	19.3	96.7	3.17	22	61	139
1,1-Dichloropropene	ND	20	20.1	100	20	20.5	103	2.07	20	69	121
1,2,3-Trichlorobenzene	ND	20	16.6	83.1	20	17.2	85.9	3.30	20	53	127
1,2,3-Trichloropropane	ND	20	18.8	94.0	20	18.9	94.7	0.742	20	79	124
1,2,4-Trichlorobenzene	ND	20	15.5	77.3	20	14.9	74.7	3.49	20	58	118
1,2,4-Trimethylbenzene	ND	20	17.5	87.7	20	15.9	79.7	9.56	20	43	132
1,2-Dibromo-3-chloropropane	ND	20	21.0	105	20	18.6	92.8	12.4	20	46	131
1,2-Dibromoethane	ND	20	19.7	98.4	20	18.2	91.1	7.71	20	76	122
1,2-Dichlorobenzene	ND	20	17.8	88.9	20	17.6	88.1	0.899	20	74	110
1,2-Dichloroethane	ND	20	22.5	112	20	24.0	120	6.45	20	60	129
1,2-Dichloropropane	ND	20	19.0	94.8	20	19.4	97.0	2.27	20	76	116
1,3,5-Trimethylbenzene	ND	20	18.1	90.4	20	16.7	83.5	7.95	20	51	121
1,3-Dichlorobenzene	ND	20	18.4	92.2	20	17.4	87.1	5.68	20	71	110
1,3-Dichloropropane	ND	20	18.8	94.2	20	18.8	94.1	0.106	20	80	119
1,4-Dichlorobenzene	ND	20	18.8	94.1	20	17.1	85.6	9.53	20	69	110
2,2-Dichloropropane	ND	20	23.2	116	20	22.8	114	1.86	20	52	122
2-Butanone	ND	20	20.2	101	20	19.1	95.4	5.64	20	10	133
2-Chloroethyl vinyl ether	ND	20	0.817	4.09 *	20	0	0 *	200 *	20	10	182
2-Chlorotoluene	ND	20	18.2	91.0	20	17.4	87.0	4.45	20	69	112
2-Hexanone	ND	20	17.5	87.4	20	17.5	87.4	0.0400	20	10	163
4-Chlorotoluene	ND	20	16.6	82.8	20	17.2	85.8	3.58	20	37	110
4-Isopropyltoluene	ND	20	18.7	93.6	20	16.2	80.9	14.6	20	65	116
4-Methyl-2-pentanone	ND	20	16.5	82.7	20	18.0	90.2	8.66	20	10	103
Acetone	ND	20	18.5	92.7	20	17.5	87.7	5.51	20	10	160
Acrylonitrile	ND	20	18.1	90.5	20	19.6	98.0	8.04	20	45	155

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272416

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050028-17
RunID: K_090511A-5015573 Units: ug/L
Analysis Date: 05/11/2009 15:56 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	19.7	98.3	20	18.7	93.5	4.95	22	70	124
Bromobenzene	ND	20	18.2	90.8	20	17.0	84.8	6.88	20	72	111
Bromochloromethane	ND	20	19.6	97.9	20	18.4	92.2	6.07	20	73	126
Bromodichloromethane	ND	20	22.6	113	20	20.9	104	8.07	20	68	125
Bromoform	ND	20	18.5	92.6	20	17.4	86.9	6.33	20	44	132
Bromomethane	ND	20	16.4	82.2	20	15.4	77.0	6.50	20	50	140
Carbon disulfide	ND	20	18.0	89.9	20	17.5	87.6	2.57	20	46	143
Carbon tetrachloride	ND	20	24.8	124	20	23.2	116	6.82	20	66	126
Chlorobenzene	ND	20	19.0	94.8	20	18.1	90.6	4.56	21	68	123
Chloroethane	ND	20	14.9	74.7	20	15.9	79.5	6.31	20	59	134
Chloroform	ND	20	20.3	102	20	20.7	103	1.56	20	68	127
Chloromethane	ND	20	17.1	85.7	20	16.6	83.1	3.12	20	51	137
Dibromochloromethane	ND	20	19.0	94.8	20	18.7	93.7	1.12	20	58	131
Dibromomethane	ND	20	21.6	108	20	21.2	106	2.28	20	82	123
Dichlorodifluoromethane	ND	20	24.1	120	20	22.7	114	5.78	20	35	143
Ethylbenzene	ND	20	18.5	92.5	20	17.5	87.6	5.36	20	76	122
Hexachlorobutadiene	ND	20	21.5	108	20	21.1	105	2.09	20	43	137
Isopropylbenzene	ND	20	17.0	84.8	20	15.5	77.5	8.92	20	57	124
Methyl tert-butyl ether	ND	40	43.7	109	40	44.3	111	1.36	20	10	200
Methylene chloride	ND	20	18.9	94.7	20	17.1	85.3	10.4	20	70	134
Naphthalene	ND	20	16.1	80.4	20	15.7	78.4	2.44	20	42	140
n-Butylbenzene	ND	20	20.6	103	20	17.9	89.5	13.9	20	82	112
n-Propylbenzene	ND	20	18.6	93.1	20	16.3	81.4	13.5	20	73	108
sec-Butylbenzene	ND	20	19.6	97.9	20	17.7	88.5	10.1	20	76	110
Styrene	ND	20	16.9	84.5	20	16.8	84.2	0.243	20	58	152
tert-Butylbenzene	ND	20	21.8	109	20	19.0	94.9	13.6	20	66	120
Tetrachloroethene	ND	20	19.3	96.3	20	18.6	93.2	3.20	20	71	130
Toluene	ND	20	18.6	93.0	20	18.2	90.9	2.31	24	80	117
Trichloroethene	ND	20	20.7	104	20	19.0	95.2	8.49	21	82	121
Trichlorofluoromethane	ND	20	22.8	114	20	22.5	113	1.49	20	74	138
Vinyl acetate	ND	20	16.5	82.7	20	17.3	86.7	4.67	20	66	135
Vinyl chloride	ND	20	19.7	98.3	20	17.8	89.0	9.86	20	45	143

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8880 INTERCHANGE DRIVE
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(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272416

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050028-17
RunID: K_090511A-5015573 Units: ug/L
Analysis Date: 05/11/2009 15:56 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	20	19.4	97.2	20	19.9	99.3	2.12	20	67	132
cis-1,3-Dichloropropene	ND	20	20.9	105	20	19.9	99.6	4.77	20	67	116
m,p-Xylene	ND	40	36.1	90.3	40	35.9	89.7	0.658	20	69	127
o-Xylene	ND	20	19.2	95.9	20	19.1	95.4	0.512	20	84	114
trans-1,2-Dichloroethene	ND	20	19.3	96.6	20	21.0	105	8.22	20	68	131
trans-1,3-Dichloropropene	ND	20	21.4	107	20	21.6	108	0.818	20	56	131
1,2-Dichloroethene (total)	ND	40	38.7	96.9	40	40.9	102	5.21	20	67	132
Xylenes,Total	ND	60	55.3	92.2	60	55.0	91.6	0.607	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	50	48	96.1	50	49.2	98.4	2.35	30	78	116
Surr: 4-Bromofluorobenzene	ND	50	55.3	111	50	53.9	108	2.57	30	74	125
Surr: Toluene-d8	ND	50	48.4	96.8	50	47.0	94.0	2.91	30	82	118

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272496

Method Blank

RunID: Q_090512A-5018927 Units: ug/L
Analysis Date: 05/12/2009 12:04 Analyst: JC
Preparation Date: 05/12/2009 12:04 Prep By: Method

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-02A	MW-4
09050091-03A	RB-050209-1

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	20
Acrylonitrile	ND	10
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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E - Estimated Value exceeds calibration curve
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272496

Method Blank

RunID: Q_090512A-5018927 Units: ug/L
Analysis Date: 05/12/2009 12:04 Analyst: JC
Preparation Date: 05/12/2009 12:04 Prep By: Method

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	2.0
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	101.5	78-116
Surr: 4-Bromofluorobenzene	101.8	74-125
Surr: Toluene-d8	102.1	82-118

Laboratory Control Sample (LCS)

RunID: Q_090512A-5018926 Units: ug/L
Analysis Date: 05/12/2009 11:36 Analyst: JC
Preparation Date: 05/12/2009 11:36 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	16.7	83.6	71	128
1,1,1-Trichloroethane	20.0	20.4	102	61	135
1,1,2,2-Tetrachloroethane	20.0	19.9	99.5	60	133
1,1,2-Trichloroethane	20.0	20.1	100	77	127
1,1-Dichloroethane	20.0	21.2	106	68	132

Qualifiers:

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E - Estimated Value exceeds calibration curve
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272496

Laboratory Control Sample (LCS)

RunID: Q_090512A-5018926 Units: ug/L
Analysis Date: 05/12/2009 11:36 Analyst: JC
Preparation Date: 05/12/2009 11:36 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	21.4	107	65	134
1,1-Dichloropropene	20.0	19.1	95.4	68	126
1,2,3-Trichlorobenzene	20.0	17.2	85.8	36	154
1,2,3-Trichloropropane	20.0	19.0	94.9	38	153
1,2,4-Trichlorobenzene	20.0	16.2	81.2	69	144
1,2,4-Trimethylbenzene	20.0	17.1	85.6	64	128
1,2-Dibromo-3-chloropropane	20.0	17.0	85.1	44	141
1,2-Dibromoethane	20.0	18.8	93.8	75	124
1,2-Dichlorobenzene	20.0	18.4	91.8	68	124
1,2-Dichloroethane	20.0	20.2	101	61	138
1,2-Dichloropropane	20.0	19.9	99.6	76	123
1,3,5-Trimethylbenzene	20.0	16.5	82.4	61	127
1,3-Dichlorobenzene	20.0	16.7	83.6	68	127
1,3-Dichloropropane	20.0	19.5	97.4	76	125
1,4-Dichlorobenzene	20.0	18.0	89.8	68	124
2,2-Dichloropropane	20.0	19.0	95.2	42	142
2-Butanone	20.0	20.2	101	22	183
2-Chloroethyl vinyl ether	20.0	21.1	106	10	179
2-Chlorotoluene	20.0	17.4	87.0	64	132
2-Hexanone	20.0	22.1	110	31	178
4-Chlorotoluene	20.0	16.9	84.7	61	132
4-Isopropyltoluene	20.0	16.9	84.7	63	136
4-Methyl-2-pentanone	20.0	20.0	100	10	159
Acetone	20.0	21.3	106	10	200
Acrylonitrile	20.0	21.9	110	54	155
Benzene	20.0	18.9	94.4	74	123
Bromobenzene	20.0	16.7	83.6	68	125
Bromochloromethane	20.0	20.6	103	71	124
Bromodichloromethane	20.0	18.0	90.0	72	128
Bromoform	20.0	17.6	88.0	81	135
Bromomethane	20.0	17.0	84.9	53	130
Carbon disulfide	20.0	19.0	95.1	41	143
Carbon tetrachloride	20.0	16.8	83.9	59	142
Chlorobenzene	20.0	18.0	90.1	75	125

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272496

Laboratory Control Sample (LCS)

RunID: Q_090512A-5018926 Units: ug/L
Analysis Date: 05/12/2009 11:36 Analyst: JC
Preparation Date: 05/12/2009 11:36 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	18.4	92.0	60	134
Chloroform	20.0	18.9	94.6	71	127
Chloromethane	20.0	20.5	103	50	139
Dibromochloromethane	20.0	15.7	78.4	65	130
Dibromomethane	20.0	18.5	92.6	79	124
Dichlorodifluoromethane	20.0	21.8	109	22	162
Ethylbenzene	20.0	17.8	89.2	72	127
Hexachlorobutadiene	20.0	16.1	80.7	45	152
Isopropylbenzene	20.0	15.2	76.0	58	130
Methyl tert-butyl ether	40.0	36.9	92.3	63	123
Methylene chloride	20.0	21.0	105	61	135
Naphthalene	20.0	17.6	87.8	33	148
n-Butylbenzene	20.0	17.6	87.9	62	136
n-Propylbenzene	20.0	17.7	88.4	57	131
sec-Butylbenzene	20.0	17.9	89.5	63	131
Styrene	20.0	17.6	88.1	69	120
tert-Butylbenzene	20.0	17.4	86.8	59	131
Tetrachloroethene	20.0	18.9	94.3	45	173
Toluene	20.0	18.2	91.1	74	126
Trichloroethene	20.0	18.8	93.9	79	131
Trichlorofluoromethane	20.0	18.2	91.1	49	153
Vinyl acetate	20.0	13.1	65.4	10	167
Vinyl chloride	20.0	22.2	111	51	148
cis-1,2-Dichloroethene	20.0	20.3	102	71	128
cis-1,3-Dichloropropene	20.0	19.3	96.4	67	128
m,p-Xylene	40.0	37.0	92.4	71	129
o-Xylene	20.0	18.0	90.0	74	130
trans-1,2-Dichloroethene	20.0	20.1	100	66	128
trans-1,3-Dichloropropene	20.0	18.5	92.6	60	128
1,2-Dichloroethene (total)	40.0	40.4	101	66	128
Xylenes,Total	60	55	92	71	130
Surr: 1,2-Dichloroethane-d4	50.0	52.1	104	78	116
Surr: 4-Bromofluorobenzene	50.0	49.2	98.3	74	125
Surr: Toluene-d8	50.0	49.4	98.9	82	118

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272496

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050393-10
RunID: Q_090512A-5018933 Units: ug/L
Analysis Date: 05/12/2009 16:11 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	100	103	103	100	102	102	0.677	20	68	124
1,1,1-Trichloroethane	ND	100	110	110	100	114	114	3.65	20	69	123
1,1,2,2-Tetrachloroethane	ND	100	117	117	100	113	113	3.27	20	69	130
1,1,2-Trichloroethane	ND	100	115	115	100	120	120	4.53	20	75	126
1,1-Dichloroethane	ND	100	113	113	100	118	118	4.51	20	65	129
1,1-Dichloroethene	ND	100	110	110	100	114	114	3.56	22	61	139
1,1-Dichloropropene	ND	100	108	108	100	111	111	3.32	20	69	121
1,2,3-Trichlorobenzene	ND	100	93.2	93.2	100	92.1	92.1	1.23	20	53	127
1,2,3-Trichloropropane	ND	100	108	108	100	112	112	3.43	20	79	124
1,2,4-Trichlorobenzene	ND	100	87.6	87.6	100	87.9	87.9	0.324	20	58	118
1,2,4-Trimethylbenzene	66.8	100	168	101	100	167	101	0.533	20	43	132
1,2-Dibromo-3-chloropropane	ND	100	110	110	100	114	114	3.52	20	46	131
1,2-Dibromoethane	ND	100	109	109	100	108	108	1.44	20	76	122
1,2-Dichlorobenzene	ND	100	103	103	100	105	105	1.93	20	74	110
1,2-Dichloroethane	27.8	100	131	103	100	141	113	7.38	20	60	129
1,2-Dichloropropane	ND	100	105	105	100	108	108	2.87	20	76	116
1,3,5-Trimethylbenzene	ND	100	98.1	92.3	100	98.2	92.3	0.0367	20	51	121
1,3-Dichlorobenzene	ND	100	97.5	97.5	100	95.9	95.9	1.70	20	71	110
1,3-Dichloropropane	ND	100	106	106	100	108	108	1.23	20	80	119
1,4-Dichlorobenzene	ND	100	101	101	100	103	103	2.50	20	69	110
2,2-Dichloropropane	ND	100	110	110	100	114	114	3.39	20	52	122
2-Butanone	ND	100	97.0	97.0	100	118	118	19.1	20	10	133
2-Chloroethyl vinyl ether	ND	100	8.06	8.06 *	100	0	0 *	200 *	20	10	182
2-Chlorotoluene	ND	100	103	103	100	99.9	99.9	3.00	20	69	112
2-Hexanone	ND	100	105	105	100	115	115	8.70	20	10	163
4-Chlorotoluene	ND	100	94.1	94.1	100	99.4	99.4	5.53	20	37	110
4-Isopropyltoluene	ND	100	88.5	88.5	100	90.9	90.9	2.66	20	65	116
4-Methyl-2-pentanone	ND	100	109	109 *	100	114	114 *	4.77	20	10	103
Acetone	ND	100	94.5	94.5	100	118	118	22.1 *	20	10	160
Acrylonitrile	ND	100	128	128	100	130	130	1.43	20	45	155

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272496

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050393-10
RunID: Q_090512A-5018933 Units: ug/L
Analysis Date: 05/12/2009 16:11 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	1230	100	1300	N/C	100	1310	N/C	N/C	22	70	124
Bromobenzene	ND	100	96.1	96.1	100	99.4	99.4	3.35	20	72	111
Bromochloromethane	ND	100	111	111	100	111	111	0.148	20	73	126
Bromodichloromethane	ND	100	102	102	100	104	104	2.36	20	68	125
Bromoform	ND	100	93.2	93.2	100	96.1	96.1	3.05	20	44	132
Bromomethane	ND	100	101	101	100	109	109	7.80	20	50	140
Carbon disulfide	ND	100	140	140	100	125	125	11.2	20	46	143
Carbon tetrachloride	ND	100	95.2	95.2	100	99.9	99.9	4.82	20	66	126
Chlorobenzene	ND	100	101	101	100	102	102	0.807	21	68	123
Chloroethane	ND	100	103	103	100	112	112	8.53	20	59	134
Chloroform	ND	100	108	108	100	110	110	1.46	20	68	127
Chloromethane	ND	100	112	112	100	118	118	5.58	20	51	137
Dibromochloromethane	ND	100	96.6	96.6	100	100	100	3.50	20	58	131
Dibromomethane	ND	100	106	106	100	107	107	0.570	20	82	123
Dichlorodifluoromethane	ND	100	108	108	100	118	118	9.06	20	35	143
Ethylbenzene	107	100	205	98.1	100	213	106	3.92	20	76	122
Hexachlorobutadiene	ND	100	85.8	85.8	100	86.5	86.5	0.788	20	43	137
Isopropylbenzene	ND	100	85.2	80.1	100	85.6	80.4	0.458	20	57	124
Methyl tert-butyl ether	ND	200	210	105	200	222	111	5.31	20	10	200
Methylene chloride	ND	100	116	116	100	117	117	0.963	20	70	134
Naphthalene	ND	100	118	97.4	100	122	102	3.66	20	42	140
n-Butylbenzene	ND	100	93.9	93.9	100	93.9	93.9	0.0128	20	82	112
n-Propylbenzene	ND	100	104	90.6	100	106	92.6	1.91	20	73	108
sec-Butylbenzene	ND	100	94.7	94.7	100	95.8	95.8	1.14	20	76	110
Styrene	ND	100	100	100	100	99.2	99.2	0.803	20	58	152
tert-Butylbenzene	ND	100	91.5	91.5	100	92.8	92.8	1.40	20	66	120
Tetrachloroethene	ND	100	95.6	95.6	100	93.6	93.6	2.17	20	71	130
Toluene	159	100	263	104	100	261	102	0.706	24	80	117
Trichloroethene	ND	100	101	101	100	102	102	1.01	21	82	121
Trichlorofluoromethane	ND	100	96.8	96.8	100	104	104	7.09	20	74	138
Vinyl acetate	ND	100	68.8	68.8	100	68.5	68.5	0.501	20	66	135
Vinyl chloride	ND	100	122	122	100	124	124	2.21	20	45	143

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050091
Method: SW8260B **Lab Batch ID:** R272496

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050393-10
RunID: Q_090512A-5018933 Units: ug/L
Analysis Date: 05/12/2009 16:11 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	100	118	118	100	118	118	0.407	20	67	132
cis-1,3-Dichloropropene	ND	100	102	102	100	106	106	3.25	20	67	116
m,p-Xylene	167	200	372	102	200	364	98.4	2.08	20	69	127
o-Xylene	43.2	100	146	102	100	147	104	0.848	20	84	114
trans-1,2-Dichloroethene	ND	100	111	111	100	116	116	4.00	20	68	131
trans-1,3-Dichloropropene	ND	100	89.7	89.7	100	94.3	94.3	4.93	20	56	131
1,2-Dichloroethene (total)	ND	200	229	114	200	234	117	2.17	20	67	132
Xylenes,Total	210	300	518	102	300	511	100	1.25	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	250	260	104	250	254	102	1.98	30	78	116
Surr: 4-Bromofluorobenzene	ND	250	242	96.8	250	236	94.2	2.70	30	74	125
Surr: Toluene-d8	ND	250	238	95.1	250	233	93.3	1.85	30	82	118

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Ion Chromatography **WorkOrder:** 09050091
Method: E300.0 **Lab Batch ID:** R271927

Method Blank

RunID: IC2_090504B-5008113 Units: mg/L
Analysis Date: 05/05/2009 17:36 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-02E	MW-4

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090504B-5008114 Units: mg/L
Analysis Date: 05/05/2009 17:54 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10.00	9.496	94.96	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050142-01
RunID: IC2_090504B-5008125 Units: mg/L
Analysis Date: 05/05/2009 14:02 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	10	9.318	93.18	10	9.599	95.99	2.971	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 09050091
Lab Batch ID: R272827

Method Blank

RunID: IC1_090515A-5022185 Units: mg/L
Analysis Date: 05/15/2009 10:16 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-02E	MW-4

Analyte	Result	Rep Limit
Chloride	ND	0.50
Sulfate	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC1_090515A-5022186 Units: mg/L
Analysis Date: 05/15/2009 10:35 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	10.00	9.517	95.17	85	115
Sulfate	10.00	10.01	100.1	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050091-02
RunID: IC1_090515A-5022192 Units: mg/L
Analysis Date: 05/15/2009 14:35 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	217.7	500	736.0	103.7	500	741.5	104.8	0.7419	20	80	120
Sulfate	46.39	500	576.5	106.0	500	582.7	107.3	1.067	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Alkalinity (as CaCO3), Total
Method: E310.1
WorkOrder: 09050091
Lab Batch ID: R275095

Method Blank

RunID: WET_090610U-5061236 Units: mg/L
Analysis Date: 06/10/2009 12:30 Analyst: PAC

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050091-02E	MW-4

Analyte	Result	Rep Limit
Alkalinity, Total (As CaCO3)	ND	2.0

Laboratory Control Sample (LCS)

RunID: WET_090610U-5061238 Units: mg/L
Analysis Date: 06/10/2009 12:30 Analyst: PAC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Total (As CaCO3)	38.70	38.00	98.19	90	110

Sample Duplicate

Original Sample: 09050091-02
RunID: WET_090610U-5061242 Units: mg/L
Analysis Date: 06/10/2009 16:00 Analyst: PAC

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Total (As CaCO3)	477	477	0	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**09050091**	Received By:	**RE**
Date and Time Received:	**5/4/2009 9:30:00 AM**	Carrier name:	**SPL**
Temperature:	**2.0°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?** 1.No collected times written on chain of custody for all received samples.	Yes ☐	No ☑	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☐	No ☐	VOA Vials Not Present ☑
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☑	No ☐	Not Applicable ☐

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: 1.Recorded all collected times from container labels

Client Instructions:

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No. 322326
0905009 1
page 1 of 1

Client Name: Brown and Caldwell
Address: 1415 Louisiana Ste. 2500
City Houston State TX Zip 77002
Phone/Fax: 713-759-0999 713-308-3886 fax
Client Contact: Rick Rexroad Email: rrexroad@brwncald.com
Project Name/No.: BJ - FracMaster 128125
Site Name: BJ FracMaster
Site Location: Hobbs, NM
Invoice To: Same Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: TPH-GRO	TPH-DRO	SVOC 8270/cl	VOC 8260	NO_3/SO_4/Alk./Chloride	Methane
MW-4-52-55	5/2/09			X	S	G	4,8	X	3	X	X	X	X		
MW-4	5/2/09			X	W	VAP	1,40	1X	15	X	X	X	X	X	X
RB-050209-1	5/2/09			X	W	VA	1,40	1X	10	X	X	X	X		
FB-050209-1	5/2/09			X	W	V	40	1	3				X		
TB-050209-1	5/2/09	—		X	W	V	40	1	2				X		

RUSH

Client/Consultant Remarks:

Laboratory remarks:

Intact? Y N
Ice? Y N
Temp 2.0 / 1.0 c

Requested TAT
- 1 Business Day
- 2 Business Days
- 3 Business Days
- Contract
- Standard
- Other
Rush TAT requires prior notice

Special Reporting Requirements Results: Fax Email PDF
Standard QC Level 3 QC Level 4 QC TX TRRP LA RECAP

Special Detection Limits (specify):

PM review (initial):

	date	time	
1. Relinquished by Sampler: Rick Rexroad	5/2/09		2. Received by:
3. Relinquished by:	5/4/09	0910	4. Received by:
5. Relinquished by:	5/4/09	930	6. Received by Laboratory:

8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09060382

Report To:		Project Name:	BJ-Fracmaster 128125
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	
ph: (713) 759-0999	fax: (713) 308-3886		

This Report Contains A Total Of 7 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

6/8/2009

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09060382

Report To:		Project Name:	BJ-Fracmaster 128125
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	
ph: (713) 759-0999	fax: (713) 308-3886		

Per your request, Mineral Spirits has been added to your sample ID: "MW-4" (SPL ID: 09050091-02) and reported on this separate Workorder.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Agnes V. Vicknair

6/8/2009

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09060382

Report To:	**Brown & Caldwell** **Rick Rexroad** **1415 Louisiana** **Suite 2500** **Houston** **TX** **77002-** **ph: (713) 759-0999** **fax: (713) 308-3886**	**Project Name:**	**BJ-Fracmaster 128125**
		Site:	**Hobbs, NM**
		Site Address:	
		PO Number:	
		State:	**New Mexico**
		State Cert. No.:	
Fax To:	Brown & Caldwell Rick Rexroad fax : (713) 308-3886	**Date Reported:**	

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-4	09060382-01	Water	5/2/2009 12:00:00 PM	5/4/2009 9:30:00 AM		☐

Agnes V. Vicknair

6/8/2009

Agnes V. Vicknair
Project Manager

Date

Kesavalu M. Bagawandoss Ph.D., J.D.
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4 **Collected:** 05/02/2009 12:00 **SPL Sample ID:** 09060382-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE HYDROCARBONS			**MCL**	**SW8015B**	**Units: mg/L**		
Mineral Spirits Range Organics	2.1		0.1	1	05/06/09 22:45	NW	5056907
Surr: n-Pentacosane	50.4		% 20-150	1	05/06/09 22:45	NW	5056907

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 14:15	N_M	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Hydrocarbons **WorkOrder:** 09060382
Method: SW8015B **Lab Batch ID:** 89962

Method Blank

RunID: HP_V_090506E-5056903 Units: mg/L
Analysis Date: 05/06/2009 16:19 Analyst: NW
Preparation Date: 05/04/2009 12:29 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09060382-01A	MW-4

Analyte	Result	Rep Limit
Mineral Spirits Range Organics	ND	0.10
Surr: n-Pentacosane	40.2	20-150

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HP_V_090506E-5056904 Units: mg/L
Analysis Date: 05/06/2009 16:39 Analyst: NW
Preparation Date: 05/04/2009 12:29 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Mineral Spirits Range Organics	1.00	0.792	79.2	1.00	0.802	80.2	1.3	40	21	150
Surr: n-Pentacosane	0.0500	0.0334	66.8	0.0500	0.0321	64.2	4.0	30	20	150

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**09060382**	Received By:	**CAW**
Date and Time Received:	**5/4/2009 9:30:00 AM**	Carrier name:	**SPL**
Temperature:	**2.0°C**	Chilled by:	**Water Ice**

1. **Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐	
2. **Custody seals intact on shippping container/cooler?**	Yes ☐	No ☐	Not Present ☑	
3. **Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑	
4. **Chain of custody present?**	Yes ☑	No ☐		
5. **Chain of custody signed when relinquished and received?**	Yes ☑	No ☐		
6. **Chain of custody agrees with sample labels?** 1.No collected times written on chain of custody for all received samples.	Yes ☐	No ☑		
7. **Samples in proper container/bottle?**	Yes ☑	No ☐		
8. **Sample containers intact?**	Yes ☑	No ☐		
9. **Sufficient sample volume for indicated test?**	Yes ☑	No ☐		
10. **All samples received within holding time?**	Yes ☑	No ☐		
11. **Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐		
12. **Water - VOA vials have zero headspace?**	Yes ☐	No ☐	VOA Vials Not Present ☑	
13. **Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☐	Not Applicable ☑	

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09050065

Report To:		Project Name:	BJ-Fracmaster 128125
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	
ph (713) 759-0999	fax:		

This Report Contains A Total Of 76 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

6/16/2009

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09050065

Report To:		Project Name:	BJ-Fracmaster 128125
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	
ph (713) 759-0999	fax:		

REVISED REPORT. Mineral Spirits analysis for your sample ID : "MW-6" (SPL ID: 09050065-04) has been added per your request.

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

For Volatile Organics analysis (8260B), the results for 2-chloroethyl vinyl ether are estimated due to sample preservation. The result for this compound is reported as "ND J" for all samples in the report.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 89962 for the Semivolatile hydrocarbons analysis by Method 8015B. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Your sample ID "MW-6" (SPL ID:090050065-04) was randomly selected for use in SPL's quality control program for the Volatile Organics analysis by SW846 Method 8260B (Batch ID:R272244). The Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) recoveries were outside of the advisable quality control limits due to possible matrix interference for the following analytes:

1,2,4-Trichlorobenzene
2-Chloroethyl vinyl ether
4-Methyl-2-pentanone
Acetone
o-Xylene

A Laboratory Control Sample (LCS) was analyzed as a quality control check for the analytical batch and all recoveries were within acceptable limits.

Your sample ID "MW-6" (SPL ID:090050065-04) was randomly selected for use in SPL's quality control program for the Ion Chromatography analysis by EPA Method300.0 (Batch ID:R272251). The Matrix Spike Duplicate (MSD) recovery was outside of the advisable quality control limits due to possible matrix interference for the following analytes:

Nitrogen,Nitrate (As N)

A Laboratory Control Sample (LCS) was analyzed as a quality control check for the analytical batch and all recoveries were within acceptable limits.

Agnes V. Vicknair

6/16/2009

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

09050065

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Agnes V. Vicknair

6/16/2009

Agnes V. Vicknair
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

09050065

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph (713) 759-0999 fax: (713) 308-3886

Fax To:

Project Name: BJ-Fracmaster 128125
Site: Hobbs, NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-6-54-55'	09050065-01	Soil	4/30/2009 3:00:00 PM	5/2/2009 10:00:00 AM	322327	☐
FB-043009-1	09050065-02	Water	4/30/2009 3:40:00 PM	5/2/2009 10:00:00 AM	322327	☐
MW-6	09050065-03	Water	5/1/2009 7:05:00 AM	5/2/2009 10:00:00 AM	322327	☑
MW-6	09050065-03	Water	5/1/2009 7:05:00 AM	5/2/2009 10:00:00 AM	322327	☐
RB-043009-1	09050065-03	Water	5/1/2009 7:05:00 AM	5/2/2009 10:00:00 AM	322327	☐
MW-6	09050065-04	Water	5/1/2009 12:00:00 PM	5/2/2009 10:00:00 AM	322327	☐
RB-050109-1	09050065-05	Water	5/1/2009 1:30:00 PM	5/2/2009 10:00:00 AM	322327	☐
FB-050109-1	09050065-06	Water	5/1/2009 1:40:00 PM	5/2/2009 10:00:00 AM	322327	☐
-043009-1	09050065-07	Water	4/30/2009	5/2/2009 10:00:00 AM	322327	☐

Agnes V. Vicknair

6/16/2009

Agnes V. Vicknair
Project Manager

Date

Kesavalu M. Bagawandoss Ph.D., J.D.
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6-54-55' **Collected:** 04/30/2009 15:00 **SPL Sample ID:** 09050065-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE				**MCL**	**SM2320B**	**Units: mg/Kg**		
Alkalinity, Bicarbonate	190		20		1	05/18/09 16:45	PAC	5025315
ALKALINITY, CARBONATE				**MCL**	**M2320 B**	**Units: mg/kg**		
Alkalinity, Carbonate	ND		20		1	05/18/09 16:45	PAC	5025321
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/Kg**		
Diesel Range Organics (C10-C28)	12		5		1	05/09/09 23:01	NW	5017626
Surr: n-Pentacosane	56.7		% 20-154		1	05/09/09 23:01	NW	5017626

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3550B	05/04/2009 16:41	FAK	1.00

GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/Kg**		
Gasoline Range Organics	ND		0.1		1	05/08/09 22:56	EMB	5012653
Surr: 1,4-Difluorobenzene	102		% 63-142		1	05/08/09 22:56	EMB	5012653
Surr: 4-Bromofluorobenzene	104		% 50-159		1	05/08/09 22:56	EMB	5012653

Prep Method	Prep Date	Prep Initials	Prep Factor
SW5030B	05/07/2009 10:57	XML	1.00

ION CHROMATOGRAPHY				**MCL**	**E300.0 MOD**	**Units: mg/kg**		
Chloride	61.1		5		1	05/15/09 19:52	BDG	5023017
Fluoride	ND		5		1	05/15/09 19:52	BDG	5023017
Sulfate	20.2		5		1	05/15/09 19:52	BDG	5023017
Nitrogen,Nitrate (As N)	ND		5		1	05/15/09 19:52	BDG	5022979
Nitrogen,Nitrite (As N)	ND		5		1	05/15/09 19:52	BDG	5022979
MERCURY, TOTAL				**MCL**	**SW7471A**	**Units: mg/Kg**		
Mercury	ND		0.03		1	05/05/09 14:46	F_S	5007427

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7471A	05/05/2009 12:00	F_S	1.00

Qualifiers:

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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6-54-55' **Collected:** 04/30/2009 15:00 **SPL Sample ID:** 09050065-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**	**Units: mg/Kg**		
Arsenic	1.2		0.5	1	05/17/09 0:29	EG	5023417
Barium	85.7		0.5	1	05/17/09 0:29	EG	5023417
Cadmium	ND		0.5	1	05/17/09 0:29	EG	5023417
Calcium	39600		1000	100	05/17/09 0:37	EG	5023419
Chromium	4.03		0.5	1	05/17/09 0:29	EG	5023417
Lead	1.51		0.5	1	05/17/09 0:29	EG	5023417
Magnesium	1520		100	10	05/17/09 0:34	EG	5023418
Potassium	454		50	1	05/17/09 0:29	EG	5023417
Selenium	ND		0.5	1	05/17/09 0:29	EG	5023417
Silver	ND		0.5	1	05/17/09 0:29	EG	5023417
Sodium	125		10	1	05/17/09 0:29	EG	5023417

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3050B	05/08/2009 10:00	AB1	1.00

SEMIVOLATILE HYDROCARBONS				MCL	SW8015B	Units: mg/kg	
Mineral Spirits	ND		10	1	05/09/09 23:01	AM	5063306
Surr: n-Pentacosane	56.7	%	20-154	1	05/09/09 23:01	AM	5063306

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3550B	05/04/2009 16:41	FAK	1.00

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6-54-55' **Collected:** 04/30/2009 15:00 **SPL Sample ID:** 09050065-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/kg**		
1,2,4-Trichlorobenzene	ND		330	1	05/08/09 19:15	GY	5017903
1,2-Dichlorobenzene	ND		330	1	05/08/09 19:15	GY	5017903
1,2-Diphenylhydrazine	ND		330	1	05/08/09 19:15	GY	5017903
1,3-Dichlorobenzene	ND		330	1	05/08/09 19:15	GY	5017903
1,4-Dichlorobenzene	ND		330	1	05/08/09 19:15	GY	5017903
2,4,5-Trichlorophenol	ND		800	1	05/08/09 19:15	GY	5017903
2,4,6-Trichlorophenol	ND		330	1	05/08/09 19:15	GY	5017903
2,4-Dichlorophenol	ND		330	1	05/08/09 19:15	GY	5017903
2,4-Dimethylphenol	ND		330	1	05/08/09 19:15	GY	5017903
2,4-Dinitrophenol	ND		800	1	05/08/09 19:15	GY	5017903
2,4-Dinitrotoluene	ND		800	1	05/08/09 19:15	GY	5017903
2,6-Dinitrotoluene	ND		330	1	05/08/09 19:15	GY	5017903
2-Chloronaphthalene	ND		330	1	05/08/09 19:15	GY	5017903
2-Chlorophenol	ND		330	1	05/08/09 19:15	GY	5017903
2-Methylnaphthalene	ND		330	1	05/08/09 19:15	GY	5017903
2-Nitroaniline	ND		800	1	05/08/09 19:15	GY	5017903
2-Nitrophenol	ND		330	1	05/08/09 19:15	GY	5017903
3,3'-Dichlorobenzidine	ND		330	1	05/08/09 19:15	GY	5017903
3-Nitroaniline	ND		800	1	05/08/09 19:15	GY	5017903
4,6-Dinitro-2-methylphenol	ND		800	1	05/08/09 19:15	GY	5017903
4-Bromophenyl phenyl ether	ND		330	1	05/08/09 19:15	GY	5017903
4-Chloro-3-methylphenol	ND		330	1	05/08/09 19:15	GY	5017903
4-Chloroaniline	ND		330	1	05/08/09 19:15	GY	5017903
4-Chlorophenyl phenyl ether	ND		330	1	05/08/09 19:15	GY	5017903
4-Nitroaniline	ND		800	1	05/08/09 19:15	GY	5017903
4-Nitrophenol	ND		800	1	05/08/09 19:15	GY	5017903
Acenaphthene	ND		330	1	05/08/09 19:15	GY	5017903
Acenaphthylene	ND		330	1	05/08/09 19:15	GY	5017903
Aniline	ND		330	1	05/08/09 19:15	GY	5017903
Anthracene	ND		330	1	05/08/09 19:15	GY	5017903
Benz(a)anthracene	ND		330	1	05/08/09 19:15	GY	5017903
Benzo(a)pyrene	ND		330	1	05/08/09 19:15	GY	5017903
Benzo(b)fluoranthene	ND		330	1	05/08/09 19:15	GY	5017903
Benzo(g,h,i)perylene	ND		330	1	05/08/09 19:15	GY	5017903
Benzo(k)fluoranthene	ND		330	1	05/08/09 19:15	GY	5017903
Benzoic acid	ND		1600	1	05/08/09 19:15	GY	5017903
Benzyl alcohol	ND		330	1	05/08/09 19:15	GY	5017903
Bis(2-chloroethoxy)methane	ND		330	1	05/08/09 19:15	GY	5017903
Bis(2-chloroethyl)ether	ND		330	1	05/08/09 19:15	GY	5017903

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6-54-55' **Collected:** 04/30/2009 15:00 **SPL Sample ID:** 09050065-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		330	1	05/08/09 19:15	GY	5017903
Bis(2-ethylhexyl)phthalate	ND		330	1	05/08/09 19:15	GY	5017903
Butyl benzyl phthalate	ND		330	1	05/08/09 19:15	GY	5017903
Carbazole	ND		330	1	05/08/09 19:15	GY	5017903
Chrysene	ND		330	1	05/08/09 19:15	GY	5017903
Dibenz(a,h)anthracene	ND		330	1	05/08/09 19:15	GY	5017903
Dibenzofuran	ND		330	1	05/08/09 19:15	GY	5017903
Diethyl phthalate	ND		330	1	05/08/09 19:15	GY	5017903
Dimethyl phthalate	ND		330	1	05/08/09 19:15	GY	5017903
Di-n-butyl phthalate	ND		330	1	05/08/09 19:15	GY	5017903
Di-n-octyl phthalate	ND		330	1	05/08/09 19:15	GY	5017903
Fluoranthene	ND		330	1	05/08/09 19:15	GY	5017903
Fluorene	ND		330	1	05/08/09 19:15	GY	5017903
Hexachlorobenzene	ND		330	1	05/08/09 19:15	GY	5017903
Hexachlorobutadiene	ND		330	1	05/08/09 19:15	GY	5017903
Hexachlorocyclopentadiene	ND		330	1	05/08/09 19:15	GY	5017903
Hexachloroethane	ND		330	1	05/08/09 19:15	GY	5017903
Indeno(1,2,3-cd)pyrene	ND		330	1	05/08/09 19:15	GY	5017903
Isophorone	ND		330	1	05/08/09 19:15	GY	5017903
Naphthalene	ND		330	1	05/08/09 19:15	GY	5017903
Nitrobenzene	ND		330	1	05/08/09 19:15	GY	5017903
N-Nitrosodi-n-propylamine	ND		330	1	05/08/09 19:15	GY	5017903
N-Nitrosodiphenylamine	ND		330	1	05/08/09 19:15	GY	5017903
Pentachlorophenol	ND		800	1	05/08/09 19:15	GY	5017903
Phenanthrene	ND		330	1	05/08/09 19:15	GY	5017903
Phenol	ND		330	1	05/08/09 19:15	GY	5017903
Pyrene	ND		330	1	05/08/09 19:15	GY	5017903
Pyridine	ND		330	1	05/08/09 19:15	GY	5017903
2-Methylphenol	ND		330	1	05/08/09 19:15	GY	5017903
3 & 4-Methylphenol	ND		330	1	05/08/09 19:15	GY	5017903
Surr: 2,4,6-Tribromophenol	59.6		% 19-135	1	05/08/09 19:15	GY	5017903
Surr: 2-Fluorobiphenyl	40.9		% 15-140	1	05/08/09 19:15	GY	5017903
Surr: 2-Fluorophenol	54.8		% 15-122	1	05/08/09 19:15	GY	5017903
Surr: Nitrobenzene-d5	42.5		% 10-134	1	05/08/09 19:15	GY	5017903
Surr: Phenol-d5	57.2		% 10-123	1	05/08/09 19:15	GY	5017903
Surr: Terphenyl-d14	44.4		% 18-166	1	05/08/09 19:15	GY	5017903

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3550C	05/06/2009 15:27	QMT	1.00

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6-54-55' **Collected:** 04/30/2009 15:00 **SPL Sample ID:** 09050065-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/kg**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/07/09 21:04	TLE	5012048
1,1,1-Trichloroethane	ND		5	1	05/07/09 21:04	TLE	5012048
1,1,2,2-Tetrachloroethane	ND		5	1	05/07/09 21:04	TLE	5012048
1,1,2-Trichloroethane	ND		5	1	05/07/09 21:04	TLE	5012048
1,1-Dichloroethane	ND		5	1	05/07/09 21:04	TLE	5012048
1,1-Dichloroethene	ND		5	1	05/07/09 21:04	TLE	5012048
1,1-Dichloropropene	ND		5	1	05/07/09 21:04	TLE	5012048
1,2,3-Trichlorobenzene	ND		5	1	05/07/09 21:04	TLE	5012048
1,2,3-Trichloropropane	ND		5	1	05/07/09 21:04	TLE	5012048
1,2,4-Trichlorobenzene	ND		5	1	05/07/09 21:04	TLE	5012048
1,2,4-Trimethylbenzene	ND		5	1	05/07/09 21:04	TLE	5012048
1,2-Dibromo-3-chloropropane	ND		5	1	05/07/09 21:04	TLE	5012048
1,2-Dibromoethane	ND		5	1	05/07/09 21:04	TLE	5012048
1,2-Dichlorobenzene	ND		5	1	05/07/09 21:04	TLE	5012048
1,2-Dichloroethane	ND		5	1	05/07/09 21:04	TLE	5012048
1,2-Dichloropropane	ND		5	1	05/07/09 21:04	TLE	5012048
1,3,5-Trimethylbenzene	ND		5	1	05/07/09 21:04	TLE	5012048
1,3-Dichlorobenzene	ND		5	1	05/07/09 21:04	TLE	5012048
1,3-Dichloropropane	ND		5	1	05/07/09 21:04	TLE	5012048
1,4-Dichlorobenzene	ND		5	1	05/07/09 21:04	TLE	5012048
2,2-Dichloropropane	ND		5	1	05/07/09 21:04	TLE	5012048
2-Butanone	ND		20	1	05/07/09 21:04	TLE	5012048
2-Chloroethyl vinyl ether	ND		10	1	05/07/09 21:04	TLE	5012048
2-Chlorotoluene	ND		5	1	05/07/09 21:04	TLE	5012048
2-Hexanone	ND		10	1	05/07/09 21:04	TLE	5012048
4-Chlorotoluene	ND		5	1	05/07/09 21:04	TLE	5012048
4-Isopropyltoluene	ND		5	1	05/07/09 21:04	TLE	5012048
4-Methyl-2-pentanone	ND		10	1	05/07/09 21:04	TLE	5012048
Acetone	ND		100	1	05/07/09 21:04	TLE	5012048
Acrylonitrile	ND		50	1	05/07/09 21:04	TLE	5012048
Benzene	ND		5	1	05/07/09 21:04	TLE	5012048
Bromobenzene	ND		5	1	05/07/09 21:04	TLE	5012048
Bromochloromethane	ND		5	1	05/07/09 21:04	TLE	5012048
Bromodichloromethane	ND		5	1	05/07/09 21:04	TLE	5012048
Bromoform	ND		5	1	05/07/09 21:04	TLE	5012048
Bromomethane	ND		10	1	05/07/09 21:04	TLE	5012048
Carbon disulfide	ND		5	1	05/07/09 21:04	TLE	5012048
Carbon tetrachloride	ND		5	1	05/07/09 21:04	TLE	5012048
Chlorobenzene	ND		5	1	05/07/09 21:04	TLE	5012048

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TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6-54-55' **Collected:** 04/30/2009 15:00 **SPL Sample ID:** 09050065-01

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/07/09 21:04	TLE	5012048
Chloroform	ND		5	1	05/07/09 21:04	TLE	5012048
Chloromethane	ND		10	1	05/07/09 21:04	TLE	5012048
Dibromochloromethane	ND		5	1	05/07/09 21:04	TLE	5012048
Dibromomethane	ND		5	1	05/07/09 21:04	TLE	5012048
Dichlorodifluoromethane	ND		10	1	05/07/09 21:04	TLE	5012048
Ethylbenzene	ND		5	1	05/07/09 21:04	TLE	5012048
Hexachlorobutadiene	ND		5	1	05/07/09 21:04	TLE	5012048
Isopropylbenzene	ND		5	1	05/07/09 21:04	TLE	5012048
Methyl tert-butyl ether	ND		5	1	05/07/09 21:04	TLE	5012048
Methylene chloride	ND		5	1	05/07/09 21:04	TLE	5012048
Naphthalene	ND		5	1	05/07/09 21:04	TLE	5012048
n-Butylbenzene	ND		5	1	05/07/09 21:04	TLE	5012048
n-Propylbenzene	ND		5	1	05/07/09 21:04	TLE	5012048
sec-Butylbenzene	ND		5	1	05/07/09 21:04	TLE	5012048
Styrene	ND		5	1	05/07/09 21:04	TLE	5012048
tert-Butylbenzene	ND		5	1	05/07/09 21:04	TLE	5012048
Tetrachloroethene	ND		5	1	05/07/09 21:04	TLE	5012048
Toluene	ND		5	1	05/07/09 21:04	TLE	5012048
Trichloroethene	ND		5	1	05/07/09 21:04	TLE	5012048
Trichlorofluoromethane	ND		5	1	05/07/09 21:04	TLE	5012048
Vinyl acetate	ND		10	1	05/07/09 21:04	TLE	5012048
Vinyl chloride	ND		10	1	05/07/09 21:04	TLE	5012048
cis-1,2-Dichloroethene	ND		5	1	05/07/09 21:04	TLE	5012048
cis-1,3-Dichloropropene	ND		5	1	05/07/09 21:04	TLE	5012048
m,p-Xylene	ND		5	1	05/07/09 21:04	TLE	5012048
o-Xylene	ND		5	1	05/07/09 21:04	TLE	5012048
trans-1,2-Dichloroethene	ND		5	1	05/07/09 21:04	TLE	5012048
trans-1,3-Dichloropropene	ND		5	1	05/07/09 21:04	TLE	5012048
Xylenes,Total	ND		5	1	05/07/09 21:04	TLE	5012048
1,2-Dichloroethene (total)	ND		5	1	05/07/09 21:04	TLE	5012048
Surr: 1,2-Dichloroethane-d4	94.0		% 64-115	1	05/07/09 21:04	TLE	5012048
Surr: 4-Bromofluorobenzene	112		% 65-131	1	05/07/09 21:04	TLE	5012048
Surr: Toluene-d8	91.7		% 75-136	1	05/07/09 21:04	TLE	5012048

Prep Method	Prep Date	Prep Initials	Prep Factor
SW5030B	05/05/2009 18:03	XML	1.00

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID FB-043009-1 **Collected:** 04/30/2009 15:40 **SPL Sample ID:** 09050065-02

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
1,1,1,2-Tetrachloroethane	ND		5	1	05/08/09 12:56	E_G	5012601
1,1,1-Trichloroethane	ND		5	1	05/08/09 12:56	E_G	5012601
1,1,2,2-Tetrachloroethane	ND		5	1	05/08/09 12:56	E_G	5012601
1,1,2-Trichloroethane	ND		5	1	05/08/09 12:56	E_G	5012601
1,1-Dichloroethane	ND		5	1	05/08/09 12:56	E_G	5012601
1,1-Dichloroethene	ND		5	1	05/08/09 12:56	E_G	5012601
1,1-Dichloropropene	ND		5	1	05/08/09 12:56	E_G	5012601
1,2,3-Trichlorobenzene	ND		5	1	05/08/09 12:56	E_G	5012601
1,2,3-Trichloropropane	ND		5	1	05/08/09 12:56	E_G	5012601
1,2,4-Trichlorobenzene	ND		5	1	05/08/09 12:56	E_G	5012601
1,2,4-Trimethylbenzene	ND		5	1	05/08/09 12:56	E_G	5012601
1,2-Dibromo-3-chloropropane	ND		5	1	05/08/09 12:56	E_G	5012601
1,2-Dibromoethane	ND		5	1	05/08/09 12:56	E_G	5012601
1,2-Dichlorobenzene	ND		5	1	05/08/09 12:56	E_G	5012601
1,2-Dichloroethane	ND		5	1	05/08/09 12:56	E_G	5012601
1,2-Dichloropropane	ND		5	1	05/08/09 12:56	E_G	5012601
1,3,5-Trimethylbenzene	ND		5	1	05/08/09 12:56	E_G	5012601
1,3-Dichlorobenzene	ND		5	1	05/08/09 12:56	E_G	5012601
1,3-Dichloropropane	ND		5	1	05/08/09 12:56	E_G	5012601
1,4-Dichlorobenzene	ND		5	1	05/08/09 12:56	E_G	5012601
2,2-Dichloropropane	ND		5	1	05/08/09 12:56	E_G	5012601
2-Butanone	ND		20	1	05/08/09 12:56	E_G	5012601
2-Chloroethyl vinyl ether	ND J		10	1	05/08/09 12:56	E_G	5012601
2-Chlorotoluene	ND		5	1	05/08/09 12:56	E_G	5012601
2-Hexanone	ND		10	1	05/08/09 12:56	E_G	5012601
4-Chlorotoluene	ND		5	1	05/08/09 12:56	E_G	5012601
4-Isopropyltoluene	ND		5	1	05/08/09 12:56	E_G	5012601
4-Methyl-2-pentanone	ND		10	1	05/08/09 12:56	E_G	5012601
Acetone	ND		20	1	05/08/09 12:56	E_G	5012601
Acrylonitrile	ND		10	1	05/08/09 12:56	E_G	5012601
Benzene	ND		5	1	05/08/09 12:56	E_G	5012601
Bromobenzene	ND		5	1	05/08/09 12:56	E_G	5012601
Bromochloromethane	ND		5	1	05/08/09 12:56	E_G	5012601
Bromodichloromethane	ND		5	1	05/08/09 12:56	E_G	5012601
Bromoform	ND		5	1	05/08/09 12:56	E_G	5012601
Bromomethane	ND		10	1	05/08/09 12:56	E_G	5012601
Carbon disulfide	ND		5	1	05/08/09 12:56	E_G	5012601
Carbon tetrachloride	ND		5	1	05/08/09 12:56	E_G	5012601
Chlorobenzene	ND		5	1	05/08/09 12:56	E_G	5012601

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID FB-043009-1 **Collected:** 04/30/2009 15:40 **SPL Sample ID:** 09050065-02

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/08/09 12:56	E_G	5012601
Chloroform	ND		5	1	05/08/09 12:56	E_G	5012601
Chloromethane	ND		10	1	05/08/09 12:56	E_G	5012601
Dibromochloromethane	ND		5	1	05/08/09 12:56	E_G	5012601
Dibromomethane	ND		5	1	05/08/09 12:56	E_G	5012601
Dichlorodifluoromethane	ND		10	1	05/08/09 12:56	E_G	5012601
Ethylbenzene	ND		5	1	05/08/09 12:56	E_G	5012601
Hexachlorobutadiene	ND		5	1	05/08/09 12:56	E_G	5012601
Isopropylbenzene	ND		5	1	05/08/09 12:56	E_G	5012601
Methyl tert-butyl ether	ND		5	1	05/08/09 12:56	E_G	5012601
Methylene chloride	ND		5	1	05/08/09 12:56	E_G	5012601
Naphthalene	ND		5	1	05/08/09 12:56	E_G	5012601
n-Butylbenzene	ND		5	1	05/08/09 12:56	E_G	5012601
n-Propylbenzene	ND		5	1	05/08/09 12:56	E_G	5012601
sec-Butylbenzene	ND		5	1	05/08/09 12:56	E_G	5012601
Styrene	ND		5	1	05/08/09 12:56	E_G	5012601
tert-Butylbenzene	ND		5	1	05/08/09 12:56	E_G	5012601
Tetrachloroethene	ND		5	1	05/08/09 12:56	E_G	5012601
Toluene	ND		5	1	05/08/09 12:56	E_G	5012601
Trichloroethene	ND		5	1	05/08/09 12:56	E_G	5012601
Trichlorofluoromethane	ND		5	1	05/08/09 12:56	E_G	5012601
Vinyl acetate	ND		10	1	05/08/09 12:56	E_G	5012601
Vinyl chloride	ND		2	1	05/08/09 12:56	E_G	5012601
cis-1,2-Dichloroethene	ND		5	1	05/08/09 12:56	E_G	5012601
cis-1,3-Dichloropropene	ND		5	1	05/08/09 12:56	E_G	5012601
m,p-Xylene	ND		5	1	05/08/09 12:56	E_G	5012601
o-Xylene	ND		5	1	05/08/09 12:56	E_G	5012601
trans-1,2-Dichloroethene	ND		5	1	05/08/09 12:56	E_G	5012601
trans-1,3-Dichloropropene	ND		5	1	05/08/09 12:56	E_G	5012601
1,2-Dichloroethene (total)	ND		5	1	05/08/09 12:56	E_G	5012601
Xylenes,Total	ND		5	1	05/08/09 12:56	E_G	5012601
Surr: 1,2-Dichloroethane-d4	107		% 78-116	1	05/08/09 12:56	E_G	5012601
Surr: 4-Bromofluorobenzene	104		% 74-125	1	05/08/09 12:56	E_G	5012601
Surr: Toluene-d8	107		% 82-118	1	05/08/09 12:56	E_G	5012601

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TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID RB-043009-1 **Collected:** 05/01/2009 7:05 **SPL Sample ID:** 09050065-03

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics (C10-C28)	ND		0.1		1	05/06/09 21:44	NW	5014278
Surr: n-Pentacosane	27.4		% 20-150		1	05/06/09 21:44	NW	5014278

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 12:29	N_M	1.00

GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND		0.1		1	05/08/09 12:44	CLJ	5014445
Surr: 1,4-Difluorobenzene	89.5		% 60-155		1	05/08/09 12:44	CLJ	5014445
Surr: 4-Bromofluorobenzene	105		% 50-158		1	05/08/09 12:44	CLJ	5014445

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E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID RB-043009-1 **Collected:** 05/01/2009 7:05 **SPL Sample ID:** 09050065-03

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	05/11/09 18:57	E_R	5015643
1,2-Dichlorobenzene	ND		5	1	05/11/09 18:57	E_R	5015643
1,2-Diphenylhydrazine	ND		10	1	05/11/09 18:57	E_R	5015643
1,3-Dichlorobenzene	ND		5	1	05/11/09 18:57	E_R	5015643
1,4-Dichlorobenzene	ND		5	1	05/11/09 18:57	E_R	5015643
2,4,5-Trichlorophenol	ND		10	1	05/11/09 18:57	E_R	5015643
2,4,6-Trichlorophenol	ND		5	1	05/11/09 18:57	E_R	5015643
2,4-Dichlorophenol	ND		5	1	05/11/09 18:57	E_R	5015643
2,4-Dimethylphenol	ND		5	1	05/11/09 18:57	E_R	5015643
2,4-Dinitrophenol	ND		25	1	05/11/09 18:57	E_R	5015643
2,4-Dinitrotoluene	ND		5	1	05/11/09 18:57	E_R	5015643
2,6-Dinitrotoluene	ND		5	1	05/11/09 18:57	E_R	5015643
2-Chloronaphthalene	ND		5	1	05/11/09 18:57	E_R	5015643
2-Chlorophenol	ND		5	1	05/11/09 18:57	E_R	5015643
2-Methylnaphthalene	ND		5	1	05/11/09 18:57	E_R	5015643
2-Nitroaniline	ND		25	1	05/11/09 18:57	E_R	5015643
2-Nitrophenol	ND		5	1	05/11/09 18:57	E_R	5015643
3,3'-Dichlorobenzidine	ND		10	1	05/11/09 18:57	E_R	5015643
3-Nitroaniline	ND		25	1	05/11/09 18:57	E_R	5015643
4,6-Dinitro-2-methylphenol	ND		25	1	05/11/09 18:57	E_R	5015643
4-Bromophenyl phenyl ether	ND		5	1	05/11/09 18:57	E_R	5015643
4-Chloro-3-methylphenol	ND		5	1	05/11/09 18:57	E_R	5015643
4-Chloroaniline	ND		5	1	05/11/09 18:57	E_R	5015643
4-Chlorophenyl phenyl ether	ND		5	1	05/11/09 18:57	E_R	5015643
4-Nitroaniline	ND		25	1	05/11/09 18:57	E_R	5015643
4-Nitrophenol	ND		25	1	05/11/09 18:57	E_R	5015643
Acenaphthene	ND		5	1	05/11/09 18:57	E_R	5015643
Acenaphthylene	ND		5	1	05/11/09 18:57	E_R	5015643
Aniline	ND		5	1	05/11/09 18:57	E_R	5015643
Anthracene	ND		5	1	05/11/09 18:57	E_R	5015643
Benz(a)anthracene	ND		5	1	05/11/09 18:57	E_R	5015643
Benzo(a)pyrene	ND		5	1	05/11/09 18:57	E_R	5015643
Benzo(b)fluoranthene	ND		5	1	05/11/09 18:57	E_R	5015643
Benzo(g,h,i)perylene	ND		5	1	05/11/09 18:57	E_R	5015643
Benzo(k)fluoranthene	ND		5	1	05/11/09 18:57	E_R	5015643
Benzoic acid	ND		25	1	05/11/09 18:57	E_R	5015643
Benzyl alcohol	ND		5	1	05/11/09 18:57	E_R	5015643
Bis(2-chloroethoxy)methane	ND		5	1	05/11/09 18:57	E_R	5015643
Bis(2-chloroethyl)ether	ND		5	1	05/11/09 18:57	E_R	5015643

Qualifiers:

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TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID RB-043009-1 **Collected:** 05/01/2009 7:05 **SPL Sample ID:** 09050065-03

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		5	1	05/11/09 18:57	E_R	5015643
Bis(2-ethylhexyl)phthalate	ND		5	1	05/11/09 18:57	E_R	5015643
Butyl benzyl phthalate	ND		5	1	05/11/09 18:57	E_R	5015643
Carbazole	ND		5	1	05/11/09 18:57	E_R	5015643
Chrysene	ND		5	1	05/11/09 18:57	E_R	5015643
Dibenz(a,h)anthracene	ND		5	1	05/11/09 18:57	E_R	5015643
Dibenzofuran	ND		5	1	05/11/09 18:57	E_R	5015643
Diethyl phthalate	ND		5	1	05/11/09 18:57	E_R	5015643
Dimethyl phthalate	ND		5	1	05/11/09 18:57	E_R	5015643
Di-n-butyl phthalate	ND		5	1	05/11/09 18:57	E_R	5015643
Di-n-octyl phthalate	ND		5	1	05/11/09 18:57	E_R	5015643
Fluoranthene	ND		5	1	05/11/09 18:57	E_R	5015643
Fluorene	ND		5	1	05/11/09 18:57	E_R	5015643
Hexachlorobenzene	ND		5	1	05/11/09 18:57	E_R	5015643
Hexachlorobutadiene	ND		5	1	05/11/09 18:57	E_R	5015643
Hexachlorocyclopentadiene	ND		5	1	05/11/09 18:57	E_R	5015643
Hexachloroethane	ND		5	1	05/11/09 18:57	E_R	5015643
Indeno(1,2,3-cd)pyrene	ND		5	1	05/11/09 18:57	E_R	5015643
Isophorone	ND		5	1	05/11/09 18:57	E_R	5015643
Naphthalene	ND		5	1	05/11/09 18:57	E_R	5015643
Nitrobenzene	ND		5	1	05/11/09 18:57	E_R	5015643
N-Nitrosodi-n-propylamine	ND		5	1	05/11/09 18:57	E_R	5015643
N-Nitrosodiphenylamine	ND		5	1	05/11/09 18:57	E_R	5015643
Pentachlorophenol	ND		25	1	05/11/09 18:57	E_R	5015643
Phenanthrene	ND		5	1	05/11/09 18:57	E_R	5015643
Phenol	ND		5	1	05/11/09 18:57	E_R	5015643
Pyrene	ND		5	1	05/11/09 18:57	E_R	5015643
Pyridine	ND		5	1	05/11/09 18:57	E_R	5015643
2-Methylphenol	ND		5	1	05/11/09 18:57	E_R	5015643
3 & 4-Methylphenol	ND		5	1	05/11/09 18:57	E_R	5015643
Surr: 2,4,6-Tribromophenol	82.3		% 10-123	1	05/11/09 18:57	E_R	5015643
Surr: 2-Fluorobiphenyl	62.4		% 23-116	1	05/11/09 18:57	E_R	5015643
Surr: 2-Fluorophenol	69.3		% 16-110	1	05/11/09 18:57	E_R	5015643
Surr: Nitrobenzene-d5	56.4		% 21-114	1	05/11/09 18:57	E_R	5015643
Surr: Phenol-d5	57.5		% 10-110	1	05/11/09 18:57	E_R	5015643
Surr: Terphenyl-d14	63.2		% 22-141	1	05/11/09 18:57	E_R	5015643

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 15:05	N_M	1.00

Qualifiers:

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID RB-043009-1 **Collected:** 05/01/2009 7:05 **SPL Sample ID:** 09050065-03

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/08/09 13:22	E_G	5012602
1,1,1-Trichloroethane	ND		5	1	05/08/09 13:22	E_G	5012602
1,1,2,2-Tetrachloroethane	ND		5	1	05/08/09 13:22	E_G	5012602
1,1,2-Trichloroethane	ND		5	1	05/08/09 13:22	E_G	5012602
1,1-Dichloroethane	ND		5	1	05/08/09 13:22	E_G	5012602
1,1-Dichloroethene	ND		5	1	05/08/09 13:22	E_G	5012602
1,1-Dichloropropene	ND		5	1	05/08/09 13:22	E_G	5012602
1,2,3-Trichlorobenzene	ND		5	1	05/08/09 13:22	E_G	5012602
1,2,3-Trichloropropane	ND		5	1	05/08/09 13:22	E_G	5012602
1,2,4-Trichlorobenzene	ND		5	1	05/08/09 13:22	E_G	5012602
1,2,4-Trimethylbenzene	ND		5	1	05/08/09 13:22	E_G	5012602
1,2-Dibromo-3-chloropropane	ND		5	1	05/08/09 13:22	E_G	5012602
1,2-Dibromoethane	ND		5	1	05/08/09 13:22	E_G	5012602
1,2-Dichlorobenzene	ND		5	1	05/08/09 13:22	E_G	5012602
1,2-Dichloroethane	ND		5	1	05/08/09 13:22	E_G	5012602
1,2-Dichloropropane	ND		5	1	05/08/09 13:22	E_G	5012602
1,3,5-Trimethylbenzene	ND		5	1	05/08/09 13:22	E_G	5012602
1,3-Dichlorobenzene	ND		5	1	05/08/09 13:22	E_G	5012602
1,3-Dichloropropane	ND		5	1	05/08/09 13:22	E_G	5012602
1,4-Dichlorobenzene	ND		5	1	05/08/09 13:22	E_G	5012602
2,2-Dichloropropane	ND		5	1	05/08/09 13:22	E_G	5012602
2-Butanone	ND		20	1	05/08/09 13:22	E_G	5012602
2-Chloroethyl vinyl ether	ND	J	10	1	05/08/09 13:22	E_G	5012602
2-Chlorotoluene	ND		5	1	05/08/09 13:22	E_G	5012602
2-Hexanone	ND		10	1	05/08/09 13:22	E_G	5012602
4-Chlorotoluene	ND		5	1	05/08/09 13:22	E_G	5012602
4-Isopropyltoluene	ND		5	1	05/08/09 13:22	E_G	5012602
4-Methyl-2-pentanone	ND		10	1	05/08/09 13:22	E_G	5012602
Acetone	ND		20	1	05/08/09 13:22	E_G	5012602
Acrylonitrile	ND		10	1	05/08/09 13:22	E_G	5012602
Benzene	ND		5	1	05/08/09 13:22	E_G	5012602
Bromobenzene	ND		5	1	05/08/09 13:22	E_G	5012602
Bromochloromethane	ND		5	1	05/08/09 13:22	E_G	5012602
Bromodichloromethane	ND		5	1	05/08/09 13:22	E_G	5012602
Bromoform	ND		5	1	05/08/09 13:22	E_G	5012602
Bromomethane	ND		10	1	05/08/09 13:22	E_G	5012602
Carbon disulfide	ND		5	1	05/08/09 13:22	E_G	5012602
Carbon tetrachloride	ND		5	1	05/08/09 13:22	E_G	5012602
Chlorobenzene	ND		5	1	05/08/09 13:22	E_G	5012602

Qualifiers:

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID RB-043009-1 **Collected:** 05/01/2009 7:05 **SPL Sample ID:** 09050065-03

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/08/09 13:22	E_G	5012602
Chloroform	ND		5	1	05/08/09 13:22	E_G	5012602
Chloromethane	ND		10	1	05/08/09 13:22	E_G	5012602
Dibromochloromethane	ND		5	1	05/08/09 13:22	E_G	5012602
Dibromomethane	ND		5	1	05/08/09 13:22	E_G	5012602
Dichlorodifluoromethane	ND		10	1	05/08/09 13:22	E_G	5012602
Ethylbenzene	ND		5	1	05/08/09 13:22	E_G	5012602
Hexachlorobutadiene	ND		5	1	05/08/09 13:22	E_G	5012602
Isopropylbenzene	ND		5	1	05/08/09 13:22	E_G	5012602
Methyl tert-butyl ether	ND		5	1	05/08/09 13:22	E_G	5012602
Methylene chloride	ND		5	1	05/08/09 13:22	E_G	5012602
Naphthalene	ND		5	1	05/08/09 13:22	E_G	5012602
n-Butylbenzene	ND		5	1	05/08/09 13:22	E_G	5012602
n-Propylbenzene	ND		5	1	05/08/09 13:22	E_G	5012602
sec-Butylbenzene	ND		5	1	05/08/09 13:22	E_G	5012602
Styrene	ND		5	1	05/08/09 13:22	E_G	5012602
tert-Butylbenzene	ND		5	1	05/08/09 13:22	E_G	5012602
Tetrachloroethene	ND		5	1	05/08/09 13:22	E_G	5012602
Toluene	ND		5	1	05/08/09 13:22	E_G	5012602
Trichloroethene	ND		5	1	05/08/09 13:22	E_G	5012602
Trichlorofluoromethane	ND		5	1	05/08/09 13:22	E_G	5012602
Vinyl acetate	ND		10	1	05/08/09 13:22	E_G	5012602
Vinyl chloride	ND		2	1	05/08/09 13:22	E_G	5012602
cis-1,2-Dichloroethene	ND		5	1	05/08/09 13:22	E_G	5012602
cis-1,3-Dichloropropene	ND		5	1	05/08/09 13:22	E_G	5012602
m,p-Xylene	ND		5	1	05/08/09 13:22	E_G	5012602
o-Xylene	ND		5	1	05/08/09 13:22	E_G	5012602
trans-1,2-Dichloroethene	ND		5	1	05/08/09 13:22	E_G	5012602
trans-1,3-Dichloropropene	ND		5	1	05/08/09 13:22	E_G	5012602
1,2-Dichloroethene (total)	ND		5	1	05/08/09 13:22	E_G	5012602
Xylenes,Total	ND		5	1	05/08/09 13:22	E_G	5012602
Surr: 1,2-Dichloroethane-d4	107		% 78-116	1	05/08/09 13:22	E_G	5012602
Surr: 4-Bromofluorobenzene	104		% 74-125	1	05/08/09 13:22	E_G	5012602
Surr: Toluene-d8	108		% 82-118	1	05/08/09 13:22	E_G	5012602

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6 **Collected:** 05/01/2009 12:00 **SPL Sample ID:** 09050065-04

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
ALKALINITY (AS CACO3), TOTAL				**MCL**	**E310.1**	**Units: mg/L**		
Alkalinity, Total (As CaCO3)	192		2		1	06/10/09 16:00	PAC	5061241
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics (C10-C28)	0.21		0.1		1	05/06/09 22:04	NW	5014279
Surr: n-Pentacosane	38.6		% 20-150		1	05/06/09 22:04	NW	5014279

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 12:29	N_M	1.00

GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND		0.1		1	05/08/09 13:13	CLJ	5014446
Surr: 1,4-Difluorobenzene	89.1		% 60-155		1	05/08/09 13:13	CLJ	5014446
Surr: 4-Bromofluorobenzene	103		% 50-158		1	05/08/09 13:13	CLJ	5014446
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**		
Methane	ND		0.0012		1	05/07/09 10:08	V_L	5009409
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**		
Chloride	624		50		100	05/12/09 21:37	BDG	5019642
Sulfate	91.9		5		10	05/12/09 21:55	BDG	5019643
Nitrogen,Nitrate (As N)	ND		0.5		1	05/02/09 19:52	BDG	5012732
SEMIVOLATILE HYDROCARBONS				**MCL**	**SW8015B**	**Units: mg/L**		
Mineral Spirits Range Organics	ND		0.1		1	05/06/09 22:04	NW	5056832
Surr: n-Pentacosane	38.6		% 20-150		1	05/06/09 22:04	NW	5056832

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 12:29	N_M	1.00

Qualifiers:

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E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6 **Collected:** 05/01/2009 12:00 **SPL Sample ID:** 09050065-04

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	05/11/09 19:32	E_R	5015644
1,2-Dichlorobenzene	ND		5	1	05/11/09 19:32	E_R	5015644
1,2-Diphenylhydrazine	ND		10	1	05/11/09 19:32	E_R	5015644
1,3-Dichlorobenzene	ND		5	1	05/11/09 19:32	E_R	5015644
1,4-Dichlorobenzene	ND		5	1	05/11/09 19:32	E_R	5015644
2,4,5-Trichlorophenol	ND		10	1	05/11/09 19:32	E_R	5015644
2,4,6-Trichlorophenol	ND		5	1	05/11/09 19:32	E_R	5015644
2,4-Dichlorophenol	ND		5	1	05/11/09 19:32	E_R	5015644
2,4-Dimethylphenol	ND		5	1	05/11/09 19:32	E_R	5015644
2,4-Dinitrophenol	ND		25	1	05/11/09 19:32	E_R	5015644
2,4-Dinitrotoluene	ND		5	1	05/11/09 19:32	E_R	5015644
2,6-Dinitrotoluene	ND		5	1	05/11/09 19:32	E_R	5015644
2-Chloronaphthalene	ND		5	1	05/11/09 19:32	E_R	5015644
2-Chlorophenol	ND		5	1	05/11/09 19:32	E_R	5015644
2-Methylnaphthalene	ND		5	1	05/11/09 19:32	E_R	5015644
2-Nitroaniline	ND		25	1	05/11/09 19:32	E_R	5015644
2-Nitrophenol	ND		5	1	05/11/09 19:32	E_R	5015644
3,3'-Dichlorobenzidine	ND		10	1	05/11/09 19:32	E_R	5015644
3-Nitroaniline	ND		25	1	05/11/09 19:32	E_R	5015644
4,6-Dinitro-2-methylphenol	ND		25	1	05/11/09 19:32	E_R	5015644
4-Bromophenyl phenyl ether	ND		5	1	05/11/09 19:32	E_R	5015644
4-Chloro-3-methylphenol	ND		5	1	05/11/09 19:32	E_R	5015644
4-Chloroaniline	ND		5	1	05/11/09 19:32	E_R	5015644
4-Chlorophenyl phenyl ether	ND		5	1	05/11/09 19:32	E_R	5015644
4-Nitroaniline	ND		25	1	05/11/09 19:32	E_R	5015644
4-Nitrophenol	ND		25	1	05/11/09 19:32	E_R	5015644
Acenaphthene	ND		5	1	05/11/09 19:32	E_R	5015644
Acenaphthylene	ND		5	1	05/11/09 19:32	E_R	5015644
Aniline	ND		5	1	05/11/09 19:32	E_R	5015644
Anthracene	ND		5	1	05/11/09 19:32	E_R	5015644
Benz(a)anthracene	ND		5	1	05/11/09 19:32	E_R	5015644
Benzo(a)pyrene	ND		5	1	05/11/09 19:32	E_R	5015644
Benzo(b)fluoranthene	ND		5	1	05/11/09 19:32	E_R	5015644
Benzo(g,h,i)perylene	ND		5	1	05/11/09 19:32	E_R	5015644
Benzo(k)fluoranthene	ND		5	1	05/11/09 19:32	E_R	5015644
Benzoic acid	ND		25	1	05/11/09 19:32	E_R	5015644
Benzyl alcohol	ND		5	1	05/11/09 19:32	E_R	5015644
Bis(2-chloroethoxy)methane	ND		5	1	05/11/09 19:32	E_R	5015644
Bis(2-chloroethyl)ether	ND		5	1	05/11/09 19:32	E_R	5015644

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6 **Collected:** 05/01/2009 12:00 **SPL Sample ID:** 09050065-04

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		5	1	05/11/09 19:32	E_R	5015644
Bis(2-ethylhexyl)phthalate	ND		5	1	05/11/09 19:32	E_R	5015644
Butyl benzyl phthalate	ND		5	1	05/11/09 19:32	E_R	5015644
Carbazole	ND		5	1	05/11/09 19:32	E_R	5015644
Chrysene	ND		5	1	05/11/09 19:32	E_R	5015644
Dibenz(a,h)anthracene	ND		5	1	05/11/09 19:32	E_R	5015644
Dibenzofuran	ND		5	1	05/11/09 19:32	E_R	5015644
Diethyl phthalate	ND		5	1	05/11/09 19:32	E_R	5015644
Dimethyl phthalate	ND		5	1	05/11/09 19:32	E_R	5015644
Di-n-butyl phthalate	11		5	1	05/11/09 19:32	E_R	5015644
Di-n-octyl phthalate	ND		5	1	05/11/09 19:32	E_R	5015644
Fluoranthene	ND		5	1	05/11/09 19:32	E_R	5015644
Fluorene	ND		5	1	05/11/09 19:32	E_R	5015644
Hexachlorobenzene	ND		5	1	05/11/09 19:32	E_R	5015644
Hexachlorobutadiene	ND		5	1	05/11/09 19:32	E_R	5015644
Hexachlorocyclopentadiene	ND		5	1	05/11/09 19:32	E_R	5015644
Hexachloroethane	ND		5	1	05/11/09 19:32	E_R	5015644
Indeno(1,2,3-cd)pyrene	ND		5	1	05/11/09 19:32	E_R	5015644
Isophorone	ND		5	1	05/11/09 19:32	E_R	5015644
Naphthalene	ND		5	1	05/11/09 19:32	E_R	5015644
Nitrobenzene	ND		5	1	05/11/09 19:32	E_R	5015644
N-Nitrosodi-n-propylamine	ND		5	1	05/11/09 19:32	E_R	5015644
N-Nitrosodiphenylamine	ND		5	1	05/11/09 19:32	E_R	5015644
Pentachlorophenol	ND		25	1	05/11/09 19:32	E_R	5015644
Phenanthrene	ND		5	1	05/11/09 19:32	E_R	5015644
Phenol	ND		5	1	05/11/09 19:32	E_R	5015644
Pyrene	ND		5	1	05/11/09 19:32	E_R	5015644
Pyridine	ND		5	1	05/11/09 19:32	E_R	5015644
2-Methylphenol	ND		5	1	05/11/09 19:32	E_R	5015644
3 & 4-Methylphenol	ND		5	1	05/11/09 19:32	E_R	5015644
Surr: 2,4,6-Tribromophenol	76.1		% 10-123	1	05/11/09 19:32	E_R	5015644
Surr: 2-Fluorobiphenyl	55.8		% 23-116	1	05/11/09 19:32	E_R	5015644
Surr: 2-Fluorophenol	62.0		% 16-110	1	05/11/09 19:32	E_R	5015644
Surr: Nitrobenzene-d5	49.6		% 21-114	1	05/11/09 19:32	E_R	5015644
Surr: Phenol-d5	50.7		% 10-110	1	05/11/09 19:32	E_R	5015644
Surr: Terphenyl-d14	54.0		% 22-141	1	05/11/09 19:32	E_R	5015644

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 15:05	N_M	1.00

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6 **Collected:** 05/01/2009 12:00 **SPL Sample ID:** 09050065-04

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/08/09 15:03	E_G	5012606
1,1,1-Trichloroethane	ND		5	1	05/08/09 15:03	E_G	5012606
1,1,2,2-Tetrachloroethane	ND		5	1	05/08/09 15:03	E_G	5012606
1,1,2-Trichloroethane	ND		5	1	05/08/09 15:03	E_G	5012606
1,1-Dichloroethane	ND		5	1	05/08/09 15:03	E_G	5012606
1,1-Dichloroethene	ND		5	1	05/08/09 15:03	E_G	5012606
1,1-Dichloropropene	ND		5	1	05/08/09 15:03	E_G	5012606
1,2,3-Trichlorobenzene	ND		5	1	05/08/09 15:03	E_G	5012606
1,2,3-Trichloropropane	ND		5	1	05/08/09 15:03	E_G	5012606
1,2,4-Trichlorobenzene	ND		5	1	05/08/09 15:03	E_G	5012606
1,2,4-Trimethylbenzene	ND		5	1	05/08/09 15:03	E_G	5012606
1,2-Dibromo-3-chloropropane	ND		5	1	05/08/09 15:03	E_G	5012606
1,2-Dibromoethane	ND		5	1	05/08/09 15:03	E_G	5012606
1,2-Dichlorobenzene	ND		5	1	05/08/09 15:03	E_G	5012606
1,2-Dichloroethane	ND		5	1	05/08/09 15:03	E_G	5012606
1,2-Dichloropropane	ND		5	1	05/08/09 15:03	E_G	5012606
1,3,5-Trimethylbenzene	ND		5	1	05/08/09 15:03	E_G	5012606
1,3-Dichlorobenzene	ND		5	1	05/08/09 15:03	E_G	5012606
1,3-Dichloropropane	ND		5	1	05/08/09 15:03	E_G	5012606
1,4-Dichlorobenzene	ND		5	1	05/08/09 15:03	E_G	5012606
2,2-Dichloropropane	ND		5	1	05/08/09 15:03	E_G	5012606
2-Butanone	ND		20	1	05/08/09 15:03	E_G	5012606
2-Chloroethyl vinyl ether	ND	J	10	1	05/08/09 15:03	E_G	5012606
2-Chlorotoluene	ND		5	1	05/08/09 15:03	E_G	5012606
2-Hexanone	ND		10	1	05/08/09 15:03	E_G	5012606
4-Chlorotoluene	ND		5	1	05/08/09 15:03	E_G	5012606
4-Isopropyltoluene	ND		5	1	05/08/09 15:03	E_G	5012606
4-Methyl-2-pentanone	ND		10	1	05/08/09 15:03	E_G	5012606
Acetone	ND		20	1	05/08/09 15:03	E_G	5012606
Acrylonitrile	ND		10	1	05/08/09 15:03	E_G	5012606
Benzene	ND		5	1	05/08/09 15:03	E_G	5012606
Bromobenzene	ND		5	1	05/08/09 15:03	E_G	5012606
Bromochloromethane	ND		5	1	05/08/09 15:03	E_G	5012606
Bromodichloromethane	ND		5	1	05/08/09 15:03	E_G	5012606
Bromoform	ND		5	1	05/08/09 15:03	E_G	5012606
Bromomethane	ND		10	1	05/08/09 15:03	E_G	5012606
Carbon disulfide	ND		5	1	05/08/09 15:03	E_G	5012606
Carbon tetrachloride	ND		5	1	05/08/09 15:03	E_G	5012606
Chlorobenzene	ND		5	1	05/08/09 15:03	E_G	5012606

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-6 **Collected:** 05/01/2009 12:00 **SPL Sample ID:** 09050065-04

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/08/09 15:03	E_G	5012606
Chloroform	ND		5	1	05/08/09 15:03	E_G	5012606
Chloromethane	ND		10	1	05/08/09 15:03	E_G	5012606
Dibromochloromethane	ND		5	1	05/08/09 15:03	E_G	5012606
Dibromomethane	ND		5	1	05/08/09 15:03	E_G	5012606
Dichlorodifluoromethane	ND		10	1	05/08/09 15:03	E_G	5012606
Ethylbenzene	ND		5	1	05/08/09 15:03	E_G	5012606
Hexachlorobutadiene	ND		5	1	05/08/09 15:03	E_G	5012606
Isopropylbenzene	ND		5	1	05/08/09 15:03	E_G	5012606
Methyl tert-butyl ether	ND		5	1	05/08/09 15:03	E_G	5012606
Methylene chloride	ND		5	1	05/08/09 15:03	E_G	5012606
Naphthalene	ND		5	1	05/08/09 15:03	E_G	5012606
n-Butylbenzene	ND		5	1	05/08/09 15:03	E_G	5012606
n-Propylbenzene	ND		5	1	05/08/09 15:03	E_G	5012606
sec-Butylbenzene	ND		5	1	05/08/09 15:03	E_G	5012606
Styrene	ND		5	1	05/08/09 15:03	E_G	5012606
tert-Butylbenzene	ND		5	1	05/08/09 15:03	E_G	5012606
Tetrachloroethene	ND		5	1	05/08/09 15:03	E_G	5012606
Toluene	ND		5	1	05/08/09 15:03	E_G	5012606
Trichloroethene	ND		5	1	05/08/09 15:03	E_G	5012606
Trichlorofluoromethane	ND		5	1	05/08/09 15:03	E_G	5012606
Vinyl acetate	ND		10	1	05/08/09 15:03	E_G	5012606
Vinyl chloride	ND		2	1	05/08/09 15:03	E_G	5012606
cis-1,2-Dichloroethene	ND		5	1	05/08/09 15:03	E_G	5012606
cis-1,3-Dichloropropene	ND		5	1	05/08/09 15:03	E_G	5012606
m,p-Xylene	ND		5	1	05/08/09 15:03	E_G	5012606
o-Xylene	ND		5	1	05/08/09 15:03	E_G	5012606
trans-1,2-Dichloroethene	ND		5	1	05/08/09 15:03	E_G	5012606
trans-1,3-Dichloropropene	ND		5	1	05/08/09 15:03	E_G	5012606
1,2-Dichloroethene (total)	ND		5	1	05/08/09 15:03	E_G	5012606
Xylenes,Total	ND		5	1	05/08/09 15:03	E_G	5012606
Surr: 1,2-Dichloroethane-d4	107		% 78-116	1	05/08/09 15:03	E_G	5012606
Surr: 4-Bromofluorobenzene	104		% 74-125	1	05/08/09 15:03	E_G	5012606
Surr: Toluene-d8	108		% 82-118	1	05/08/09 15:03	E_G	5012606

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TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID RB-050109-1 **Collected:** 05/01/2009 13:30 **SPL Sample ID:** 09050065-05

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS			**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics (C10-C28)	ND		0.1	1	05/06/09 22:25	NW	5014280
Surr: n-Pentacosane	59.4		% 20-150	1	05/06/09 22:25	NW	5014280

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 12:29	N_M	1.00

GASOLINE RANGE ORGANICS			**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND		0.1	1	05/08/09 13:41	CLJ	5014447
Surr: 1,4-Difluorobenzene	89.8		% 60-155	1	05/08/09 13:41	CLJ	5014447
Surr: 4-Bromofluorobenzene	103		% 50-158	1	05/08/09 13:41	CLJ	5014447

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8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID RB-050109-1 **Collected:** 05/01/2009 13:30 **SPL Sample ID:** 09050065-05

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C			**MCL**	**SW8270C**	**Units: ug/L**		
1,2,4-Trichlorobenzene	ND		5	1	05/11/09 20:07	E_R	5015645
1,2-Dichlorobenzene	ND		5	1	05/11/09 20:07	E_R	5015645
1,2-Diphenylhydrazine	ND		10	1	05/11/09 20:07	E_R	5015645
1,3-Dichlorobenzene	ND		5	1	05/11/09 20:07	E_R	5015645
1,4-Dichlorobenzene	ND		5	1	05/11/09 20:07	E_R	5015645
2,4,5-Trichlorophenol	ND		10	1	05/11/09 20:07	E_R	5015645
2,4,6-Trichlorophenol	ND		5	1	05/11/09 20:07	E_R	5015645
2,4-Dichlorophenol	ND		5	1	05/11/09 20:07	E_R	5015645
2,4-Dimethylphenol	ND		5	1	05/11/09 20:07	E_R	5015645
2,4-Dinitrophenol	ND		25	1	05/11/09 20:07	E_R	5015645
2,4-Dinitrotoluene	ND		5	1	05/11/09 20:07	E_R	5015645
2,6-Dinitrotoluene	ND		5	1	05/11/09 20:07	E_R	5015645
2-Chloronaphthalene	ND		5	1	05/11/09 20:07	E_R	5015645
2-Chlorophenol	ND		5	1	05/11/09 20:07	E_R	5015645
2-Methylnaphthalene	ND		5	1	05/11/09 20:07	E_R	5015645
2-Nitroaniline	ND		25	1	05/11/09 20:07	E_R	5015645
2-Nitrophenol	ND		5	1	05/11/09 20:07	E_R	5015645
3,3'-Dichlorobenzidine	ND		10	1	05/11/09 20:07	E_R	5015645
3-Nitroaniline	ND		25	1	05/11/09 20:07	E_R	5015645
4,6-Dinitro-2-methylphenol	ND		25	1	05/11/09 20:07	E_R	5015645
4-Bromophenyl phenyl ether	ND		5	1	05/11/09 20:07	E_R	5015645
4-Chloro-3-methylphenol	ND		5	1	05/11/09 20:07	E_R	5015645
4-Chloroaniline	ND		5	1	05/11/09 20:07	E_R	5015645
4-Chlorophenyl phenyl ether	ND		5	1	05/11/09 20:07	E_R	5015645
4-Nitroaniline	ND		25	1	05/11/09 20:07	E_R	5015645
4-Nitrophenol	ND		25	1	05/11/09 20:07	E_R	5015645
Acenaphthene	ND		5	1	05/11/09 20:07	E_R	5015645
Acenaphthylene	ND		5	1	05/11/09 20:07	E_R	5015645
Aniline	ND		5	1	05/11/09 20:07	E_R	5015645
Anthracene	ND		5	1	05/11/09 20:07	E_R	5015645
Benz(a)anthracene	ND		5	1	05/11/09 20:07	E_R	5015645
Benzo(a)pyrene	ND		5	1	05/11/09 20:07	E_R	5015645
Benzo(b)fluoranthene	ND		5	1	05/11/09 20:07	E_R	5015645
Benzo(g,h,i)perylene	ND		5	1	05/11/09 20:07	E_R	5015645
Benzo(k)fluoranthene	ND		5	1	05/11/09 20:07	E_R	5015645
Benzoic acid	ND		25	1	05/11/09 20:07	E_R	5015645
Benzyl alcohol	ND		5	1	05/11/09 20:07	E_R	5015645
Bis(2-chloroethoxy)methane	ND		5	1	05/11/09 20:07	E_R	5015645
Bis(2-chloroethyl)ether	ND		5	1	05/11/09 20:07	E_R	5015645

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID RB-050109-1 **Collected:** 05/01/2009 13:30 **SPL Sample ID:** 09050065-05

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		5	1	05/11/09 20:07	E_R	5015645
Bis(2-ethylhexyl)phthalate	ND		5	1	05/11/09 20:07	E_R	5015645
Butyl benzyl phthalate	ND		5	1	05/11/09 20:07	E_R	5015645
Carbazole	ND		5	1	05/11/09 20:07	E_R	5015645
Chrysene	ND		5	1	05/11/09 20:07	E_R	5015645
Dibenz(a,h)anthracene	ND		5	1	05/11/09 20:07	E_R	5015645
Dibenzofuran	ND		5	1	05/11/09 20:07	E_R	5015645
Diethyl phthalate	ND		5	1	05/11/09 20:07	E_R	5015645
Dimethyl phthalate	ND		5	1	05/11/09 20:07	E_R	5015645
Di-n-butyl phthalate	ND		5	1	05/11/09 20:07	E_R	5015645
Di-n-octyl phthalate	ND		5	1	05/11/09 20:07	E_R	5015645
Fluoranthene	ND		5	1	05/11/09 20:07	E_R	5015645
Fluorene	ND		5	1	05/11/09 20:07	E_R	5015645
Hexachlorobenzene	ND		5	1	05/11/09 20:07	E_R	5015645
Hexachlorobutadiene	ND		5	1	05/11/09 20:07	E_R	5015645
Hexachlorocyclopentadiene	ND		5	1	05/11/09 20:07	E_R	5015645
Hexachloroethane	ND		5	1	05/11/09 20:07	E_R	5015645
Indeno(1,2,3-cd)pyrene	ND		5	1	05/11/09 20:07	E_R	5015645
Isophorone	ND		5	1	05/11/09 20:07	E_R	5015645
Naphthalene	ND		5	1	05/11/09 20:07	E_R	5015645
Nitrobenzene	ND		5	1	05/11/09 20:07	E_R	5015645
N-Nitrosodi-n-propylamine	ND		5	1	05/11/09 20:07	E_R	5015645
N-Nitrosodiphenylamine	ND		5	1	05/11/09 20:07	E_R	5015645
Pentachlorophenol	ND		25	1	05/11/09 20:07	E_R	5015645
Phenanthrene	ND		5	1	05/11/09 20:07	E_R	5015645
Phenol	ND		5	1	05/11/09 20:07	E_R	5015645
Pyrene	ND		5	1	05/11/09 20:07	E_R	5015645
Pyridine	ND		5	1	05/11/09 20:07	E_R	5015645
2-Methylphenol	ND		5	1	05/11/09 20:07	E_R	5015645
3 & 4-Methylphenol	ND		5	1	05/11/09 20:07	E_R	5015645
Surr: 2,4,6-Tribromophenol	97.5		% 10-123	1	05/11/09 20:07	E_R	5015645
Surr: 2-Fluorobiphenyl	73.6		% 23-116	1	05/11/09 20:07	E_R	5015645
Surr: 2-Fluorophenol	81.6		% 16-110	1	05/11/09 20:07	E_R	5015645
Surr: Nitrobenzene-d5	65.6		% 21-114	1	05/11/09 20:07	E_R	5015645
Surr: Phenol-d5	70.0		% 10-110	1	05/11/09 20:07	E_R	5015645
Surr: Terphenyl-d14	75.6		% 22-141	1	05/11/09 20:07	E_R	5015645

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/04/2009 15:05	N_M	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID RB-050109-1 **Collected:** 05/01/2009 13:30 **SPL Sample ID:** 09050065-05

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/08/09 13:47	E_G	5012603
1,1,1-Trichloroethane	ND		5	1	05/08/09 13:47	E_G	5012603
1,1,2,2-Tetrachloroethane	ND		5	1	05/08/09 13:47	E_G	5012603
1,1,2-Trichloroethane	ND		5	1	05/08/09 13:47	E_G	5012603
1,1-Dichloroethane	ND		5	1	05/08/09 13:47	E_G	5012603
1,1-Dichloroethene	ND		5	1	05/08/09 13:47	E_G	5012603
1,1-Dichloropropene	ND		5	1	05/08/09 13:47	E_G	5012603
1,2,3-Trichlorobenzene	ND		5	1	05/08/09 13:47	E_G	5012603
1,2,3-Trichloropropane	ND		5	1	05/08/09 13:47	E_G	5012603
1,2,4-Trichlorobenzene	ND		5	1	05/08/09 13:47	E_G	5012603
1,2,4-Trimethylbenzene	ND		5	1	05/08/09 13:47	E_G	5012603
1,2-Dibromo-3-chloropropane	ND		5	1	05/08/09 13:47	E_G	5012603
1,2-Dibromoethane	ND		5	1	05/08/09 13:47	E_G	5012603
1,2-Dichlorobenzene	ND		5	1	05/08/09 13:47	E_G	5012603
1,2-Dichloroethane	ND		5	1	05/08/09 13:47	E_G	5012603
1,2-Dichloropropane	ND		5	1	05/08/09 13:47	E_G	5012603
1,3,5-Trimethylbenzene	ND		5	1	05/08/09 13:47	E_G	5012603
1,3-Dichlorobenzene	ND		5	1	05/08/09 13:47	E_G	5012603
1,3-Dichloropropane	ND		5	1	05/08/09 13:47	E_G	5012603
1,4-Dichlorobenzene	ND		5	1	05/08/09 13:47	E_G	5012603
2,2-Dichloropropane	ND		5	1	05/08/09 13:47	E_G	5012603
2-Butanone	ND		20	1	05/08/09 13:47	E_G	5012603
2-Chloroethyl vinyl ether	ND J		10	1	05/08/09 13:47	E_G	5012603
2-Chlorotoluene	ND		5	1	05/08/09 13:47	E_G	5012603
2-Hexanone	ND		10	1	05/08/09 13:47	E_G	5012603
4-Chlorotoluene	ND		5	1	05/08/09 13:47	E_G	5012603
4-Isopropyltoluene	ND		5	1	05/08/09 13:47	E_G	5012603
4-Methyl-2-pentanone	ND		10	1	05/08/09 13:47	E_G	5012603
Acetone	ND		20	1	05/08/09 13:47	E_G	5012603
Acrylonitrile	ND		10	1	05/08/09 13:47	E_G	5012603
Benzene	ND		5	1	05/08/09 13:47	E_G	5012603
Bromobenzene	ND		5	1	05/08/09 13:47	E_G	5012603
Bromochloromethane	ND		5	1	05/08/09 13:47	E_G	5012603
Bromodichloromethane	ND		5	1	05/08/09 13:47	E_G	5012603
Bromoform	ND		5	1	05/08/09 13:47	E_G	5012603
Bromomethane	ND		10	1	05/08/09 13:47	E_G	5012603
Carbon disulfide	ND		5	1	05/08/09 13:47	E_G	5012603
Carbon tetrachloride	ND		5	1	05/08/09 13:47	E_G	5012603
Chlorobenzene	ND		5	1	05/08/09 13:47	E_G	5012603

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID RB-050109-1 **Collected:** 05/01/2009 13:30 **SPL Sample ID:** 09050065-05

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/08/09 13:47	E_G	5012603
Chloroform	ND		5	1	05/08/09 13:47	E_G	5012603
Chloromethane	ND		10	1	05/08/09 13:47	E_G	5012603
Dibromochloromethane	ND		5	1	05/08/09 13:47	E_G	5012603
Dibromomethane	ND		5	1	05/08/09 13:47	E_G	5012603
Dichlorodifluoromethane	ND		10	1	05/08/09 13:47	E_G	5012603
Ethylbenzene	ND		5	1	05/08/09 13:47	E_G	5012603
Hexachlorobutadiene	ND		5	1	05/08/09 13:47	E_G	5012603
Isopropylbenzene	ND		5	1	05/08/09 13:47	E_G	5012603
Methyl tert-butyl ether	ND		5	1	05/08/09 13:47	E_G	5012603
Methylene chloride	ND		5	1	05/08/09 13:47	E_G	5012603
Naphthalene	ND		5	1	05/08/09 13:47	E_G	5012603
n-Butylbenzene	ND		5	1	05/08/09 13:47	E_G	5012603
n-Propylbenzene	ND		5	1	05/08/09 13:47	E_G	5012603
sec-Butylbenzene	ND		5	1	05/08/09 13:47	E_G	5012603
Styrene	ND		5	1	05/08/09 13:47	E_G	5012603
tert-Butylbenzene	ND		5	1	05/08/09 13:47	E_G	5012603
Tetrachloroethene	ND		5	1	05/08/09 13:47	E_G	5012603
Toluene	ND		5	1	05/08/09 13:47	E_G	5012603
Trichloroethene	ND		5	1	05/08/09 13:47	E_G	5012603
Trichlorofluoromethane	ND		5	1	05/08/09 13:47	E_G	5012603
Vinyl acetate	ND		10	1	05/08/09 13:47	E_G	5012603
Vinyl chloride	ND		2	1	05/08/09 13:47	E_G	5012603
cis-1,2-Dichloroethene	ND		5	1	05/08/09 13:47	E_G	5012603
cis-1,3-Dichloropropene	ND		5	1	05/08/09 13:47	E_G	5012603
m,p-Xylene	ND		5	1	05/08/09 13:47	E_G	5012603
o-Xylene	ND		5	1	05/08/09 13:47	E_G	5012603
trans-1,2-Dichloroethene	ND		5	1	05/08/09 13:47	E_G	5012603
trans-1,3-Dichloropropene	ND		5	1	05/08/09 13:47	E_G	5012603
1,2-Dichloroethene (total)	ND		5	1	05/08/09 13:47	E_G	5012603
Xylenes,Total	ND		5	1	05/08/09 13:47	E_G	5012603
Surr: 1,2-Dichloroethane-d4	106		% 78-116	1	05/08/09 13:47	E_G	5012603
Surr: 4-Bromofluorobenzene	104		% 74-125	1	05/08/09 13:47	E_G	5012603
Surr: Toluene-d8	108		% 82-118	1	05/08/09 13:47	E_G	5012603

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID FB-050109-1 **Collected:** 05/01/2009 13:40 **SPL Sample ID:** 09050065-06

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/08/09 14:12	E_G	5012604
1,1,1-Trichloroethane	ND		5	1	05/08/09 14:12	E_G	5012604
1,1,2,2-Tetrachloroethane	ND		5	1	05/08/09 14:12	E_G	5012604
1,1,2-Trichloroethane	ND		5	1	05/08/09 14:12	E_G	5012604
1,1-Dichloroethane	ND		5	1	05/08/09 14:12	E_G	5012604
1,1-Dichloroethene	ND		5	1	05/08/09 14:12	E_G	5012604
1,1-Dichloropropene	ND		5	1	05/08/09 14:12	E_G	5012604
1,2,3-Trichlorobenzene	ND		5	1	05/08/09 14:12	E_G	5012604
1,2,3-Trichloropropane	ND		5	1	05/08/09 14:12	E_G	5012604
1,2,4-Trichlorobenzene	ND		5	1	05/08/09 14:12	E_G	5012604
1,2,4-Trimethylbenzene	ND		5	1	05/08/09 14:12	E_G	5012604
1,2-Dibromo-3-chloropropane	ND		5	1	05/08/09 14:12	E_G	5012604
1,2-Dibromoethane	ND		5	1	05/08/09 14:12	E_G	5012604
1,2-Dichlorobenzene	ND		5	1	05/08/09 14:12	E_G	5012604
1,2-Dichloroethane	ND		5	1	05/08/09 14:12	E_G	5012604
1,2-Dichloropropane	ND		5	1	05/08/09 14:12	E_G	5012604
1,3,5-Trimethylbenzene	ND		5	1	05/08/09 14:12	E_G	5012604
1,3-Dichlorobenzene	ND		5	1	05/08/09 14:12	E_G	5012604
1,3-Dichloropropane	ND		5	1	05/08/09 14:12	E_G	5012604
1,4-Dichlorobenzene	ND		5	1	05/08/09 14:12	E_G	5012604
2,2-Dichloropropane	ND		5	1	05/08/09 14:12	E_G	5012604
2-Butanone	ND		20	1	05/08/09 14:12	E_G	5012604
2-Chloroethyl vinyl ether	ND J		10	1	05/08/09 14:12	E_G	5012604
2-Chlorotoluene	ND		5	1	05/08/09 14:12	E_G	5012604
2-Hexanone	ND		10	1	05/08/09 14:12	E_G	5012604
4-Chlorotoluene	ND		5	1	05/08/09 14:12	E_G	5012604
4-Isopropyltoluene	ND		5	1	05/08/09 14:12	E_G	5012604
4-Methyl-2-pentanone	ND		10	1	05/08/09 14:12	E_G	5012604
Acetone	ND		20	1	05/08/09 14:12	E_G	5012604
Acrylonitrile	ND		10	1	05/08/09 14:12	E_G	5012604
Benzene	ND		5	1	05/08/09 14:12	E_G	5012604
Bromobenzene	ND		5	1	05/08/09 14:12	E_G	5012604
Bromochloromethane	ND		5	1	05/08/09 14:12	E_G	5012604
Bromodichloromethane	ND		5	1	05/08/09 14:12	E_G	5012604
Bromoform	ND		5	1	05/08/09 14:12	E_G	5012604
Bromomethane	ND		10	1	05/08/09 14:12	E_G	5012604
Carbon disulfide	ND		5	1	05/08/09 14:12	E_G	5012604
Carbon tetrachloride	ND		5	1	05/08/09 14:12	E_G	5012604
Chlorobenzene	ND		5	1	05/08/09 14:12	E_G	5012604

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID FB-050109-1 **Collected:** 05/01/2009 13:40 **SPL Sample ID:** 09050065-06

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/08/09 14:12	E_G	5012604
Chloroform	ND		5	1	05/08/09 14:12	E_G	5012604
Chloromethane	ND		10	1	05/08/09 14:12	E_G	5012604
Dibromochloromethane	ND		5	1	05/08/09 14:12	E_G	5012604
Dibromomethane	ND		5	1	05/08/09 14:12	E_G	5012604
Dichlorodifluoromethane	ND		10	1	05/08/09 14:12	E_G	5012604
Ethylbenzene	ND		5	1	05/08/09 14:12	E_G	5012604
Hexachlorobutadiene	ND		5	1	05/08/09 14:12	E_G	5012604
Isopropylbenzene	ND		5	1	05/08/09 14:12	E_G	5012604
Methyl tert-butyl ether	ND		5	1	05/08/09 14:12	E_G	5012604
Methylene chloride	ND		5	1	05/08/09 14:12	E_G	5012604
Naphthalene	ND		5	1	05/08/09 14:12	E_G	5012604
n-Butylbenzene	ND		5	1	05/08/09 14:12	E_G	5012604
n-Propylbenzene	ND		5	1	05/08/09 14:12	E_G	5012604
sec-Butylbenzene	ND		5	1	05/08/09 14:12	E_G	5012604
Styrene	ND		5	1	05/08/09 14:12	E_G	5012604
tert-Butylbenzene	ND		5	1	05/08/09 14:12	E_G	5012604
Tetrachloroethene	ND		5	1	05/08/09 14:12	E_G	5012604
Toluene	ND		5	1	05/08/09 14:12	E_G	5012604
Trichloroethene	ND		5	1	05/08/09 14:12	E_G	5012604
Trichlorofluoromethane	ND		5	1	05/08/09 14:12	E_G	5012604
Vinyl acetate	ND		10	1	05/08/09 14:12	E_G	5012604
Vinyl chloride	ND		2	1	05/08/09 14:12	E_G	5012604
cis-1,2-Dichloroethene	ND		5	1	05/08/09 14:12	E_G	5012604
cis-1,3-Dichloropropene	ND		5	1	05/08/09 14:12	E_G	5012604
m,p-Xylene	ND		5	1	05/08/09 14:12	E_G	5012604
o-Xylene	ND		5	1	05/08/09 14:12	E_G	5012604
trans-1,2-Dichloroethene	ND		5	1	05/08/09 14:12	E_G	5012604
trans-1,3-Dichloropropene	ND		5	1	05/08/09 14:12	E_G	5012604
1,2-Dichloroethene (total)	ND		5	1	05/08/09 14:12	E_G	5012604
Xylenes,Total	ND		5	1	05/08/09 14:12	E_G	5012604
Surr: 1,2-Dichloroethane-d4	105		% 78-116	1	05/08/09 14:12	E_G	5012604
Surr: 4-Bromofluorobenzene	104		% 74-125	1	05/08/09 14:12	E_G	5012604
Surr: Toluene-d8	107		% 82-118	1	05/08/09 14:12	E_G	5012604

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID TB-043009-1 **Collected:** 04/30/2009 0:00 **SPL Sample ID:** 09050065-07

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
1,1,1,2-Tetrachloroethane	ND		5	1	05/08/09 14:37	E_G	5012605
1,1,1-Trichloroethane	ND		5	1	05/08/09 14:37	E_G	5012605
1,1,2,2-Tetrachloroethane	ND		5	1	05/08/09 14:37	E_G	5012605
1,1,2-Trichloroethane	ND		5	1	05/08/09 14:37	E_G	5012605
1,1-Dichloroethane	ND		5	1	05/08/09 14:37	E_G	5012605
1,1-Dichloroethene	ND		5	1	05/08/09 14:37	E_G	5012605
1,1-Dichloropropene	ND		5	1	05/08/09 14:37	E_G	5012605
1,2,3-Trichlorobenzene	ND		5	1	05/08/09 14:37	E_G	5012605
1,2,3-Trichloropropane	ND		5	1	05/08/09 14:37	E_G	5012605
1,2,4-Trichlorobenzene	ND		5	1	05/08/09 14:37	E_G	5012605
1,2,4-Trimethylbenzene	ND		5	1	05/08/09 14:37	E_G	5012605
1,2-Dibromo-3-chloropropane	ND		5	1	05/08/09 14:37	E_G	5012605
1,2-Dibromoethane	ND		5	1	05/08/09 14:37	E_G	5012605
1,2-Dichlorobenzene	ND		5	1	05/08/09 14:37	E_G	5012605
1,2-Dichloroethane	ND		5	1	05/08/09 14:37	E_G	5012605
1,2-Dichloropropane	ND		5	1	05/08/09 14:37	E_G	5012605
1,3,5-Trimethylbenzene	ND		5	1	05/08/09 14:37	E_G	5012605
1,3-Dichlorobenzene	ND		5	1	05/08/09 14:37	E_G	5012605
1,3-Dichloropropane	ND		5	1	05/08/09 14:37	E_G	5012605
1,4-Dichlorobenzene	ND		5	1	05/08/09 14:37	E_G	5012605
2,2-Dichloropropane	ND		5	1	05/08/09 14:37	E_G	5012605
2-Butanone	ND		20	1	05/08/09 14:37	E_G	5012605
2-Chloroethyl vinyl ether	ND J		10	1	05/08/09 14:37	E_G	5012605
2-Chlorotoluene	ND		5	1	05/08/09 14:37	E_G	5012605
2-Hexanone	ND		10	1	05/08/09 14:37	E_G	5012605
4-Chlorotoluene	ND		5	1	05/08/09 14:37	E_G	5012605
4-Isopropyltoluene	ND		5	1	05/08/09 14:37	E_G	5012605
4-Methyl-2-pentanone	ND		10	1	05/08/09 14:37	E_G	5012605
Acetone	ND		20	1	05/08/09 14:37	E_G	5012605
Acrylonitrile	ND		10	1	05/08/09 14:37	E_G	5012605
Benzene	ND		5	1	05/08/09 14:37	E_G	5012605
Bromobenzene	ND		5	1	05/08/09 14:37	E_G	5012605
Bromochloromethane	ND		5	1	05/08/09 14:37	E_G	5012605
Bromodichloromethane	ND		5	1	05/08/09 14:37	E_G	5012605
Bromoform	ND		5	1	05/08/09 14:37	E_G	5012605
Bromomethane	ND		10	1	05/08/09 14:37	E_G	5012605
Carbon disulfide	ND		5	1	05/08/09 14:37	E_G	5012605
Carbon tetrachloride	ND		5	1	05/08/09 14:37	E_G	5012605
Chlorobenzene	ND		5	1	05/08/09 14:37	E_G	5012605

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID TB-043009-1 **Collected:** 04/30/2009 0:00 **SPL Sample ID:** 09050065-07

Site: Hobbs, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Chloroethane	ND		10	1	05/08/09 14:37	E_G	5012605
Chloroform	ND		5	1	05/08/09 14:37	E_G	5012605
Chloromethane	ND		10	1	05/08/09 14:37	E_G	5012605
Dibromochloromethane	ND		5	1	05/08/09 14:37	E_G	5012605
Dibromomethane	ND		5	1	05/08/09 14:37	E_G	5012605
Dichlorodifluoromethane	ND		10	1	05/08/09 14:37	E_G	5012605
Ethylbenzene	ND		5	1	05/08/09 14:37	E_G	5012605
Hexachlorobutadiene	ND		5	1	05/08/09 14:37	E_G	5012605
Isopropylbenzene	ND		5	1	05/08/09 14:37	E_G	5012605
Methyl tert-butyl ether	ND		5	1	05/08/09 14:37	E_G	5012605
Methylene chloride	ND		5	1	05/08/09 14:37	E_G	5012605
Naphthalene	ND		5	1	05/08/09 14:37	E_G	5012605
n-Butylbenzene	ND		5	1	05/08/09 14:37	E_G	5012605
n-Propylbenzene	ND		5	1	05/08/09 14:37	E_G	5012605
sec-Butylbenzene	ND		5	1	05/08/09 14:37	E_G	5012605
Styrene	ND		5	1	05/08/09 14:37	E_G	5012605
tert-Butylbenzene	ND		5	1	05/08/09 14:37	E_G	5012605
Tetrachloroethene	ND		5	1	05/08/09 14:37	E_G	5012605
Toluene	ND		5	1	05/08/09 14:37	E_G	5012605
Trichloroethene	ND		5	1	05/08/09 14:37	E_G	5012605
Trichlorofluoromethane	ND		5	1	05/08/09 14:37	E_G	5012605
Vinyl acetate	ND		10	1	05/08/09 14:37	E_G	5012605
Vinyl chloride	ND		2	1	05/08/09 14:37	E_G	5012605
cis-1,2-Dichloroethene	ND		5	1	05/08/09 14:37	E_G	5012605
cis-1,3-Dichloropropene	ND		5	1	05/08/09 14:37	E_G	5012605
m,p-Xylene	ND		5	1	05/08/09 14:37	E_G	5012605
o-Xylene	ND		5	1	05/08/09 14:37	E_G	5012605
trans-1,2-Dichloroethene	ND		5	1	05/08/09 14:37	E_G	5012605
trans-1,3-Dichloropropene	ND		5	1	05/08/09 14:37	E_G	5012605
1,2-Dichloroethene (total)	ND		5	1	05/08/09 14:37	E_G	5012605
Xylenes,Total	ND		5	1	05/08/09 14:37	E_G	5012605
Surr: 1,2-Dichloroethane-d4	106		% 78-116	1	05/08/09 14:37	E_G	5012605
Surr: 4-Bromofluorobenzene	104		% 74-125	1	05/08/09 14:37	E_G	5012605
Surr: Toluene-d8	107		% 82-118	1	05/08/09 14:37	E_G	5012605

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
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MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Hydrocarbons
Method: SW8015B
WorkOrder: 09050065
Lab Batch ID: 89962

Method Blank

RunID: HP_V_090506D-5056828 Units: mg/L
Analysis Date: 05/06/2009 16:19 Analyst: NW
Preparation Date: 05/04/2009 12:29 Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-04G	MW-6

Analyte	Result	Rep Limit
Mineral Spirits Range Organics	ND	0.10
Surr: n-Pentacosane	40.2	20-150

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HP_V_090506D-5056829 Units: mg/L
Analysis Date: 05/06/2009 16:39 Analyst: NW
Preparation Date: 05/04/2009 12:29 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Mineral Spirits Range Organics	1.00	0.792	79.2	1.00	0.802	80.2	1.3	40	21	150
Surr: n-Pentacosane	0.0500	0.0334	66.8	0.0500	0.0321	64.2	4.0	30	20	150

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Hydrocarbons
Method: SW8015B
WorkOrder: 09050065
Lab Batch ID: 89962

Method Blank

RunID: HP_V_090506B-5014268 Units: mg/L
Analysis Date: 05/06/2009 16:19 Analyst: NW
Preparation Date: 05/04/2009 12:29 Prep By: N_M Method SW3510C

Analyte	Result	Rep Limit
Diesel Range Organics (C10-C28)	ND	0.10
Surr: n-Pentacosane	40.2	20-150

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-03C	RB-043009-1
09050065-04C	MW-6
09050065-05C	RB-050109-1

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HP_V_090506B-5014269 Units: mg/L
Analysis Date: 05/06/2009 16:39 Analyst: NW
Preparation Date: 05/04/2009 12:29 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics (C10-C28)	1.00	0.792	79.2	1.00	0.802	80.2	1.3	20	21	130
Surr: n-Pentacosane	0.0500	0.0334	66.8	0.0500	0.0321	64.2	4.0	30	20	150

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Hydrocarbons **WorkOrder:** 09050065
Method: SW8015B **Lab Batch ID:** 89972

Method Blank

RunID: HP_V_090509A-5017621 Units: mg/Kg
Analysis Date: 05/09/2009 20:39 Analyst: NW
Preparation Date: 05/04/2009 16:41 Prep By: FAK Method SW3550B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01E	MW-6-54-55'

Analyte	Result	Rep Limit
Diesel Range Organics (C10-C28)	ND	5.0
Surr: n-Pentacosane	79.7	20-154

Laboratory Control Sample (LCS)

RunID: HP_V_090509A-5017622 Units: mg/Kg
Analysis Date: 05/09/2009 20:59 Analyst: NW
Preparation Date: 05/04/2009 16:41 Prep By: FAK Method SW3550B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Diesel Range Organics (C10-C28)	33.3	24.7	74.3	57	150
Surr: n-Pentacosane	1.66	1.25	75.3	20	154

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050059-01
RunID: HP_V_090509A-5017624 Units: mg/Kg
Analysis Date: 05/09/2009 22:20 Analyst: NW
Preparation Date: 05/04/2009 16:41 Prep By: FAK Method SW3550B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Diesel Range Organics (C10-C28)	1750	33.3	2210	N/C	33.3	1340	N/C	N/C	50	21	175
Surr: n-Pentacosane	ND	1.66	D	D	1.66	D	D	D	30	20	154

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Hydrocarbons
Method: SW8015B
WorkOrder: 09050065
Lab Batch ID: 89972

Method Blank

RunID: HP_V_090611A-5063301 Units: mg/kg
Analysis Date: 05/09/2009 20:39 Analyst: AM
Preparation Date: 05/04/2009 16:41 Prep By: FAK Method SW3550B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01F	MW-6-54-55'

Analyte	Result	Rep Limit
Mineral Spirits	ND	10
Surr: n-Pentacosane	79.7	20-154

Laboratory Control Sample (LCS)

RunID: HP_V_090611A-5063302 Units: mg/kg
Analysis Date: 05/09/2009 20:59 Analyst: AM
Preparation Date: 05/04/2009 16:41 Prep By: FAK Method SW3550B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Mineral Spirits	33.3	24.7	74.3	50	150
Surr: n-Pentacosane	1.66	1.25	75.3	20	154

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050059-01
RunID: HP_V_090611A-5063304 Units: mg/kg
Analysis Date: 05/09/2009 22:20 Analyst: AM

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Mineral Spirits	2360	66.6	2840	N/C	66.6	1750	N/C	N/C	50	50	150
Surr: n-Pentacosane	ND	1.66	D	D	1.66	D	D	D	30	20	154

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Headspace Gas Analysis
Method: RSK147
WorkOrder: 09050065
Lab Batch ID: R272023

Method Blank

RunID: VARC_090507A-5009408 Units: mg/L
Analysis Date: 05/07/2009 9:46 Analyst: V_L

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-04F	MW-6

Analyte	Result	Rep Limit
Methane	ND	0.0012

Sample Duplicate

Original Sample: 09050065-04
RunID: VARC_090507A-5009409 Units: mg/L
Analysis Date: 05/07/2009 10:08 Analyst: V_L

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Methane	ND	ND	0	50

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Gasoline Range Organics
Method: SW8015B
WorkOrder: 09050065
Lab Batch ID: R272171

Method Blank

RunID: HP_S_090508A-5011642 Units: mg/Kg
Analysis Date: 05/08/2009 8:55 Analyst: EMB
Preparation Date: 05/08/2009 8:55 Prep By: Method SW5030B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01B	MW-6-54-55'

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	100.3	63-142
Surr: 4-Bromofluorobenzene	101.6	50-159

Laboratory Control Sample (LCS)

RunID: HP_S_090508A-5011643 Units: mg/Kg
Analysis Date: 05/08/2009 9:52 Analyst: EMB
Preparation Date: 05/08/2009 9:52 Prep By: Method SW5030B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	0.962	96.2	70	130
Surr: 1,4-Difluorobenzene	0.100	0.102	102	63	142
Surr: 4-Bromofluorobenzene	0.100	0.108	108	50	159

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050292-01
RunID: HP_S_090508A-5012651 Units: mg/kg-dry
Analysis Date: 05/08/2009 21:58 Analyst: EMB
Preparation Date: 05/08/2009 9:19 Prep By: XML Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	1.98	0.762	38.4	1.98	0.668	33.7	13.3	50	26	147
Surr: 1,4-Difluorobenzene	ND	0.198	0.214	108	0.198	0.211	106	1.59	30	63	142
Surr: 4-Bromofluorobenzene	ND	0.198	0.205	103	0.198	0.206	104	0.483	30	50	159

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Gasoline Range Organics
Method: SW8015B
WorkOrder: 09050065
Lab Batch ID: R272349

Method Blank

RunID: HP_P_090508A-5014432 Units: mg/L
Analysis Date: 05/08/2009 5:40 Analyst: CLJ

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	90.2	60-155
Surr: 4-Bromofluorobenzene	103.9	50-158

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-03B	RB-043009-1
09050065-04B	MW-6
09050065-05B	RB-050109-1

Laboratory Control Sample (LCS)

RunID: HP_P_090508A-5014430 Units: mg/L
Analysis Date: 05/08/2009 4:43 Analyst: CLJ

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	1.03	103	42	136
Surr: 1,4-Difluorobenzene	0.100	0.101	101	60	155
Surr: 4-Bromofluorobenzene	0.100	0.107	107	50	158

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050042-26
RunID: HP_P_090508A-5014436 Units: mg/L
Analysis Date: 05/08/2009 8:30 Analyst: CLJ

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	4.30	10	11.9	75.9	10	12.2	79.4	2.90	36	22	174
Surr: 1,4-Difluorobenzene	ND	1	0.983	98.3	1	0.986	98.6	0.274	30	60	155
Surr: 4-Bromofluorobenzene	ND	1	1.07	107	1	1.06	106	1.08	30	50	158

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Mercury, Total **WorkOrder:** 09050065
Method: SW7471A **Lab Batch ID:** 90001

Method Blank

RunID: HGLD_090505A-5007425 Units: mg/Kg
Analysis Date: 05/05/2009 14:38 Analyst: F_S
Preparation Date: 05/05/2009 12:00 Prep By: F_S Method SW7471A

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01C	MW-6-54-55'

Analyte	Result	Rep Limit
Mercury	ND	0.03

Laboratory Control Sample (LCS)

RunID: HGLD_090505A-5007426 Units: mg/Kg
Analysis Date: 05/05/2009 14:40 Analyst: F_S
Preparation Date: 05/05/2009 12:00 Prep By: F_S Method SW7471A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Mercury	3.600	3.815	106.0	68	132

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050065-01
RunID: HGLD_090505A-5007428 Units: mg/Kg
Analysis Date: 05/05/2009 14:49 Analyst: F_S
Preparation Date: 05/05/2009 12:00 Prep By: F_S Method SW7471A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Mercury	ND	0.3	0.3355	111.8	0.3	0.3237	107.9	3.597	20	75	125

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 09050065
Lab Batch ID: 90112a

Method Blank

RunID: ICP2_090516A-5023407 Units: mg/Kg
Analysis Date: 05/16/2009 23:49 Analyst: EG
Preparation Date: 05/08/2009 10:00 Prep By: AB1 Method SW3050B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01C	MW-6-54-55'

Analyte	Result	Rep Limit
Arsenic	ND	0.5
Barium	ND	0.5
Cadmium	ND	0.5
Calcium	ND	10
Chromium	ND	0.5
Lead	ND	0.5
Magnesium	ND	10
Potassium	ND	50
Selenium	ND	0.5
Silver	ND	0.5
Sodium	ND	10

Laboratory Control Sample (LCS)

RunID: ICP2_090516A-5023408 Units: mg/Kg
Analysis Date: 05/16/2009 23:53 Analyst: EG
Preparation Date: 05/08/2009 10:00 Prep By: AB1 Method SW3050B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Arsenic	80.90	78.58	97.13	79	121
Barium	156.0	157.4	100.9	82	119
Cadmium	233.0	211.6	90.82	81	119
Calcium	4320	4141	95.86	79	121
Chromium	60.80	61.67	101.4	78	121
Lead	76.80	71.12	92.60	81	120
Magnesium	2220	2122	95.59	77	123
Potassium	2380	2293	96.34	71	129
Selenium	82.90	76.84	92.69	76	124
Silver	80.00	79.17	98.96	61	139
Sodium	456.0	470.5	103.2	56	144

Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

Sample Spiked: 09050317-01
RunID: ICP2_090516A-5023413 Units: mg/kg-dry
Analysis Date: 05/17/2009 0:13 Analyst: EG

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 09050065
Lab Batch ID: 90112a

Analyte	Sample Result	PDS Spike Added	PDS Result	PDS % Recovery	PDSD Spike Added	PDSD Result	PDSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Barium	57.7	2123.4	2423	111.4	2123.4	2438	112.1	0.6116	20	75	125
Potassium	ND	21234	23540	107.3	21234	23470	107.0	0.2710	20	75	125

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050317-01
RunID: ICP2_090516A-5023410 Units: mg/kg-dry
Analysis Date: 05/17/2009 0:01 Analyst: EG
Preparation Date: 05/08/2009 10:00 Prep By: AB1 Method SW3050B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Arsenic	ND	106.2	126.7	110.8	106.2	124.4	108.7	1.776	20	75	125
Barium	57.70	106.2	201.7	135.6 *	106.2	197.3	131.4 *	2.235	20	75	125
Cadmium	ND	106.2	122.1	115.0	106.2	119.2	112.3	2.376	20	75	125
Calcium	962.5	106.2	1101	N/C	106.2	1072	N/C	N/C	20	75	125
Chromium	38.77	106.2	158.4	112.7	106.2	155.1	109.6	2.100	20	75	125
Lead	63.50	106.2	191.1	120.2	106.2	185.6	115.0	2.931	20	75	125
Magnesium	2348	106.2	3214	N/C	106.2	3114	N/C	N/C	20	75	125
Potassium	ND	1062	2336	149.8 *	1062	2297	146.2 *	1.650	20	75	125
Selenium	ND	106.2	120.3	113.3	106.2	117.3	110.5	2.502	20	75	125
Silver	ND	106.2	125.0	117.7	106.2	122.3	115.2	2.147	20	75	125
Sodium	490.0	106.2	606.6	N/C	106.2	575.8	N/C	N/C	20	75	125

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E - Estimated Value exceeds calibration curve
MI - Matrix Interference
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N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09050065
Lab Batch ID: 89968

Method Blank

RunID: R_090508B-5011969
Units: ug/L
Analysis Date: 05/08/2009 10:32
Analyst: E_R
Preparation Date: 05/04/2009 15:05
Prep By: N_M Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-03D	RB-043009-1
09050065-04D	MW-6
09050065-05D	RB-050109-1

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Diphenylhydrazine	ND	10
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,4,5-Trichlorophenol	ND	10
2,4,6-Trichlorophenol	ND	5.0
2,4-Dichlorophenol	ND	5.0
2,4-Dimethylphenol	ND	5.0
2,4-Dinitrophenol	ND	25
2,4-Dinitrotoluene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Chlorophenol	ND	5.0
2-Methylnaphthalene	ND	5.0
2-Nitroaniline	ND	25
2-Nitrophenol	ND	5.0
3,3'-Dichlorobenzidine	ND	10
3-Nitroaniline	ND	25
4,6-Dinitro-2-methylphenol	ND	25
4-Bromophenyl phenyl ether	ND	5.0
4-Chloro-3-methylphenol	ND	5.0
4-Chloroaniline	ND	5.0
4-Chlorophenyl phenyl ether	ND	5.0
4-Nitroaniline	ND	25
4-Nitrophenol	ND	25
Acenaphthene	ND	5.0
Acenaphthylene	ND	5.0
Aniline	ND	5.0
Anthracene	ND	5.0
Benz(a)anthracene	ND	5.0
Benzo(a)pyrene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzoic acid	ND	25
Benzyl alcohol	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Butyl benzyl phthalate	ND	5.0
Carbazole	ND	5.0
Chrysene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Dibenzofuran	ND	5.0

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TNTC - Too numerous to count
MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09050065
Lab Batch ID: 89968

Method Blank

RunID: R_090508B-5011969 Units: ug/L
Analysis Date: 05/08/2009 10:32 Analyst: E_R
Preparation Date: 05/04/2009 15:05 Prep By: N_M Method SW3510C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	5.0
Dimethyl phthalate	ND	5.0
Di-n-butyl phthalate	ND	5.0
Di-n-octyl phthalate	ND	5.0
Fluoranthene	ND	5.0
Fluorene	ND	5.0
Hexachlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
Hexachloroethane	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Isophorone	ND	5.0
Naphthalene	ND	5.0
Nitrobenzene	ND	5.0
N-Nitrosodi-n-propylamine	ND	5.0
N-Nitrosodiphenylamine	ND	5.0
Pentachlorophenol	ND	25
Phenanthrene	ND	5.0
Phenol	ND	5.0
Pyrene	ND	5.0
Pyridine	ND	5.0
2-Methylphenol	ND	5.0
3 & 4-Methylphenol	ND	5.0
Surr: 2,4,6-Tribromophenol	111.6	10-123
Surr: 2-Fluorobiphenyl	78.2	23-116
Surr: 2-Fluorophenol	98.7	16-110
Surr: Nitrobenzene-d5	68.6	21-114
Surr: Phenol-d5	104.4	10-110
Surr: Terphenyl-d14	88.4	22-141

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09041007-02
RunID: R_090508B-5011971 Units: ug/L
Analysis Date: 05/08/2009 14:03 Analyst: E_R
Preparation Date: 05/04/2009 15:05 Prep By: N_M Method SW3510C

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050065
Method: SW8270C **Lab Batch ID:** 89968

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2,4-Trichlorobenzene	ND	25	19.3	77.2	25	19.3	77.2	0	39	10	142
1,2-Dichlorobenzene	ND	25	19.3	77.2	25	19.2	76.8	0.519	50	20	150
1,2-Diphenylhydrazine	ND	25	18.7	74.8	25	18.9	75.6	1.06	50	10	251
1,3-Dichlorobenzene	ND	25	18.3	73.2	25	18.6	74.4	1.63	50	20	150
1,4-Dichlorobenzene	ND	25	18.4	73.6	25	18.6	74.4	1.08	45	20	150
2,4,5-Trichlorophenol	ND	25	19.8	79.2	25	19.4	77.6	2.04	50	30	150
2,4,6-Trichlorophenol	ND	25	21.5	86.0	25	21.0	84.0	2.35	50	30	150
2,4-Dichlorophenol	ND	25	19.8	79.2	25	19.0	76.0	4.12	50	30	150
2,4-Dimethylphenol	ND	25	19.0	76.0	25	18.3	73.2	3.75	50	32	140
2,4-Dinitrophenol	ND	25	19.9	79.6	25	17.5	70.0	12.8	50	10	160
2,4-Dinitrotoluene	ND	25	21.4	85.6	25	20.8	83.2	2.84	50	30	150
2,6-Dinitrotoluene	ND	25	20.6	82.4	25	20.4	81.6	0.976	50	30	150
2-Chloronaphthalene	ND	25	20.5	82.0	25	20.4	81.6	0.489	50	30	150
2-Chlorophenol	ND	25	19.8	79.2	25	20.2	80.8	2.00	40	23	134
2-Methylnaphthalene	ND	25	19.9	79.6	25	19.9	79.6	0	50	20	170
2-Nitroaniline	ND	25	19.3	77.2	25	18.8	75.2	2.62	50	20	160
2-Nitrophenol	ND	25	20.3	81.2	25	19.9	79.6	1.99	50	29	182
3,3'-Dichlorobenzidine	ND	25	18.8	75.2	25	18.8	75.2	0	50	30	200
3-Nitroaniline	ND	25	16.9	67.6	25	17.0	68.0	0.590	50	20	160
4,6-Dinitro-2-methylphenol	ND	25	18.4	73.6	25	18.2	72.8	1.09	50	10	160
4-Bromophenyl phenyl ether	ND	25	19.3	77.2	25	19.2	76.8	0.519	50	30	150
4-Chloro-3-methylphenol	ND	25	20.9	83.6	25	20.5	82.0	1.93	42	25	160
4-Chloroaniline	ND	25	14.0	56.0	25	13.1	52.4	6.64	50	20	160
4-Chlorophenyl phenyl ether	ND	25	20.4	81.6	25	20.3	81.2	0.491	50	25	158
4-Nitroaniline	ND	25	18.9	75.6	25	18.7	74.8	1.06	50	20	160
4-Nitrophenol	ND	25	10.2	40.8	25	10.3	41.2	0.976	50	10	132
Acenaphthene	ND	25	19.6	78.4	25	19.8	79.2	1.02	31	30	150
Acenaphthylene	ND	25	20.5	82.0	25	20.4	81.6	0.489	50	33	250
Aniline	ND	50	0	0 *	50	0	0 *	0	50	10	135
Anthracene	ND	25	20.0	80.0	25	20.3	81.2	1.49	50	27	133
Benz(a)anthracene	ND	25	19.1	76.4	25	18.9	75.6	1.05	50	33	143
Benzo(a)pyrene	ND	25	16.5	66.0	25	16.3	65.2	1.22	50	17	163
Benzo(b)fluoranthene	ND	25	18.2	72.8	25	17.0	68.0	6.82	50	24	159
Benzo(g,h,i)perylene	ND	25	18.1	72.4	25	18.2	72.8	0.551	50	30	160
Benzo(k)fluoranthene	ND	25	16.7	66.8	25	17.8	71.2	6.38	50	11	162
Benzoic acid	ND	25	22.8	91.2	25	21.7	86.8	4.94	50	10	400
Benzyl alcohol	ND	25	17.0	68.0	25	15.5	62.0	9.23	50	30	160
Bis(2-chloroethoxy)methane	ND	25	19.0	76.0	25	18.4	73.6	3.21	50	33	184
Bis(2-chloroethyl)ether	ND	25	19.3	77.2	25	19.3	77.2	0	50	12	158

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09050065
Lab Batch ID: 89968

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09041007-02
RunID: R_090508B-5011971 Units: ug/L
Analysis Date: 05/08/2009 14:03 Analyst: E_R
Preparation Date: 05/04/2009 15:05 Prep By: N_M Method SW3510C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Bis(2-chloroisopropyl)ether	ND	25	20.2	80.8	25	20.3	81.2	0.494	50	20	160
Bis(2-ethylhexyl)phthalate	ND	25	16.7	66.8	25	16.3	65.2	2.42	50	10	158
Butyl benzyl phthalate	ND	25	17.6	70.4	25	17.5	70.0	0.570	50	30	160
Carbazole	ND	25	19.9	79.6	25	19.9	79.6	0	50	30	150
Chrysene	ND	25	19.0	76.0	25	19.0	76.0	0	50	17	168
Dibenz(a,h)anthracene	ND	25	17.6	70.4	25	18.6	74.4	5.52	50	30	160
Dibenzofuran	ND	25	20.7	82.8	25	20.6	82.4	0.484	50	30	150
Diethyl phthalate	ND	25	19.4	77.6	25	19.4	77.6	0	50	30	160
Dimethyl phthalate	ND	25	20.0	80.0	25	20.0	80.0	0	50	30	160
Di-n-butyl phthalate	ND	25	19.1	76.4	25	18.7	74.8	2.12	50	30	160
Di-n-octyl phthalate	ND	25	16.8	67.2	25	17.1	68.4	1.77	50	20	150
Fluoranthene	ND	25	20.5	82.0	25	21.0	84.0	2.41	50	26	137
Fluorene	ND	25	20.0	80.0	25	20.2	80.8	0.995	50	30	150
Hexachlorobenzene	ND	25	19.8	79.2	25	19.7	78.8	0.506	50	20	150
Hexachlorobutadiene	ND	25	18.0	72.0	25	17.7	70.8	1.68	50	20	140
Hexachlorocyclopentadiene	ND	25	24.8	99.2	25	24.4	97.6	1.63	50	10	150
Hexachloroethane	ND	25	16.7	66.8	25	17.0	68.0	1.78	50	10	140
Indeno(1,2,3-cd)pyrene	ND	25	20.6	82.4	25	20.3	81.2	1.47	50	30	160
Isophorone	ND	25	19.8	79.2	25	19.6	78.4	1.02	50	21	196
Naphthalene	ND	25	20.3	81.2	25	20.2	80.8	0.494	50	21	133
Nitrobenzene	ND	25	18.2	72.8	25	17.9	71.6	1.66	50	20	160
N-Nitrosodi-n-propylamine	ND	25	18.3	73.2	25	18.4	73.6	0.545	38	30	160
N-Nitrosodiphenylamine	ND	50	47.8	95.6	50	48.2	96.4	0.833	50	30	150
Pentachlorophenol	ND	25	19.9	79.6	25	19.3	77.2	3.06	50	14	176
Phenanthrene	ND	25	19.8	79.2	25	19.9	79.6	0.504	50	10	140
Phenol	ND	25	11.2	44.8	25	11.2	44.8	0	42	40	132
Pyrene	ND	25	19.0	76.0	25	18.6	74.4	2.13	38	30	150
Pyridine	ND	50	6.26	12.5	50	5.96	11.9	4.91	50	10	150
2-Methylphenol	ND	25	19.2	76.8	25	19.1	76.4	0.522	50	30	160
3 & 4-Methylphenol	ND	25	16.5	66.0	25	16.0	64.0	3.08	50	10	160
Surr: 2,4,6-Tribromophenol	ND	75	77	103	75	75.0	100	2.63	30	10	123
Surr: 2-Fluorobiphenyl	ND	50	35	70.0	50	34.9	69.8	0.286	30	23	116

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050065
Method: SW8270C **Lab Batch ID:** 89968

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09041007-02
RunID: R_090508B-5011971 Units: ug/L
Analysis Date: 05/08/2009 14:03 Analyst: E_R
Preparation Date: 05/04/2009 15:05 Prep By: N_M Method SW3510C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Surr: 2-Fluorophenol	ND	75	49.5	66.0	75	48.6	64.8	1.83	30	16	110
Surr: Nitrobenzene-d5	ND	50	32	64.0	50	32.2	64.4	0.623	30	21	114
Surr: Phenol-d5	ND	75	39.4	52.5	75	39.4	52.5	0	30	10	110
Surr: Terphenyl-d14	ND	50	29.9	59.8	50	29.6	59.2	1.01	30	22	141

Qualifiers:
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
WorkOrder: 09050065
Method: SW8270C
Lab Batch ID: 90048

Method Blank

RunID: H_090513B-5017953
Units: ug/kg
Analysis Date: 05/13/2009 10:00
Analyst: GY
Preparation Date: 05/06/2009 15:27
Prep By: QMT Method SW3550C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01E	MW-6-54-55'

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
1,2-Diphenylhydrazine	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
2,4,5-Trichlorophenol	ND	800
2,4,6-Trichlorophenol	ND	330
2,4-Dichlorophenol	ND	330
2,4-Dimethylphenol	ND	330
2,4-Dinitrophenol	ND	800
2,4-Dinitrotoluene	ND	800
2,6-Dinitrotoluene	ND	330
2-Chloronaphthalene	ND	330
2-Chlorophenol	ND	330
2-Methylnaphthalene	ND	330
2-Nitroaniline	ND	800
2-Nitrophenol	ND	330
3,3'-Dichlorobenzidine	ND	330
3-Nitroaniline	ND	800
4,6-Dinitro-2-methylphenol	ND	800
4-Bromophenyl phenyl ether	ND	330
4-Chloro-3-methylphenol	ND	330
4-Chloroaniline	ND	330
4-Chlorophenyl phenyl ether	ND	330
4-Nitroaniline	ND	800
4-Nitrophenol	ND	800
Acenaphthene	ND	330
Acenaphthylene	ND	330
Aniline	ND	330
Anthracene	ND	330
Benz(a)anthracene	ND	330
Benzo(a)pyrene	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(g,h,i)perylene	ND	330
Benzo(k)fluoranthene	ND	330
Benzoic acid	ND	1600
Benzyl alcohol	ND	330
Bis(2-chloroethoxy)methane	ND	330
Bis(2-chloroethyl)ether	ND	330
Bis(2-chloroisopropyl)ether	ND	330
Bis(2-ethylhexyl)phthalate	ND	330
Butyl benzyl phthalate	ND	330
Carbazole	ND	330
Chrysene	ND	330
Dibenz(a,h)anthracene	ND	330
Dibenzofuran	ND	330

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050065
Method: SW8270C **Lab Batch ID:** 90048

Method Blank

RunID: H_090513B-5017953 Units: ug/kg
Analysis Date: 05/13/2009 10:00 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	330
Dimethyl phthalate	ND	330
Di-n-butyl phthalate	ND	330
Di-n-octyl phthalate	ND	330
Fluoranthene	ND	330
Fluorene	ND	330
Hexachlorobenzene	ND	330
Hexachlorobutadiene	ND	330
Hexachlorocyclopentadiene	ND	330
Hexachloroethane	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Isophorone	ND	330
Naphthalene	ND	330
Nitrobenzene	ND	330
N-Nitrosodi-n-propylamine	ND	330
N-Nitrosodiphenylamine	ND	330
Pentachlorophenol	ND	800
Phenanthrene	ND	330
Phenol	ND	330
Pyrene	ND	330
Pyridine	ND	330
2-Methylphenol	ND	330
3 & 4-Methylphenol	ND	330
Surr: 2,4,6-Tribromophenol	90.4	19-135
Surr: 2-Fluorobiphenyl	67.1	15-140
Surr: 2-Fluorophenol	88.8	15-122
Surr: Nitrobenzene-d5	69.4	10-134
Surr: Phenol-d5	94.4	10-123
Surr: Terphenyl-d14	70.6	18-166

Laboratory Control Sample (LCS)

RunID: H_090513B-5017954 Units: ug/kg
Analysis Date: 05/13/2009 10:29 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,2,4-Trichlorobenzene	850	384	45.2	34	116
1,2-Dichlorobenzene	850	402	47.3	32	129
1,2-Diphenylhydrazine	850	464	54.6	10	256

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09050065
Lab Batch ID: 90048

Laboratory Control Sample (LCS)

RunID: H_090513B-5017954
Analysis Date: 05/13/2009 10:29
Preparation Date: 05/06/2009 15:27
Units: ug/kg
Analyst: GY
Prep By: QMT Method SW3550C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,3-Dichlorobenzene	850	393	46.2	10	172
1,4-Dichlorobenzene	850	398	46.8	20	124
2,4,5-Trichlorophenol	850	391	46.0	40	150
2,4,6-Trichlorophenol	850	382	44.9	37	144
2,4-Dichlorophenol	850	373	43.9	39	135
2,4-Dimethylphenol	850	413	48.6	32	119
2,4-Dinitrophenol	850	266	31.3	10	191
2,4-Dinitrotoluene	850	404	47.5	30	150
2,6-Dinitrotoluene	850	413	48.6	30	150
2-Chloronaphthalene	850	506	59.5	20	175
2-Chlorophenol	850	416	48.9	23	134
2-Methylnaphthalene	850	410	48.2	30	135
2-Nitroaniline	850	417	49.1	20	175
2-Nitrophenol	850	395	46.5	29	182
3,3'-Dichlorobenzidine	850	338	39.8	10	261
3-Nitroaniline	850	406	47.8	20	175
4,6-Dinitro-2-methylphenol	850	310	36.5	10	181
4-Bromophenyl phenyl ether	850	423	49.8	20	175
4-Chloro-3-methylphenol	850	413	48.6	22	147
4-Chloroaniline	850	533	62.7	20	175
4-Chlorophenyl phenyl ether	850	399	46.9	25	158
4-Nitroaniline	850	376	44.2	20	175
4-Nitrophenol	850	312	36.7	10	132
Acenaphthene	850	401	47.2	30	160
Acenaphthylene	850	413	48.6	10	150
Aniline	1700	860	50.6	10	160
Anthracene	850	435	51.2	27	133
Benz(a)anthracene	850	414	48.7	33	143
Benzo(a)pyrene	850	362	42.6	17	163
Benzo(b)fluoranthene	850	409	48.1	24	159
Benzo(g,h,i)perylene	850	421	49.5	10	219
Benzo(k)fluoranthene	850	413	48.6	11	162
Benzoic acid	850	471	55.4	10	450
Benzyl alcohol	850	458	53.9	30	160

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050065
Method: SW8270C **Lab Batch ID:** 90048

Laboratory Control Sample (LCS)

RunID: H_090513B-5017954 Units: ug/kg
Analysis Date: 05/13/2009 10:29 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Bis(2-chloroethoxy)methane	850	408	48.0	33	184
Bis(2-chloroethyl)ether	850	434	51.1	28	158
Bis(2-chloroisopropyl)ether	850	447	52.6	36	166
Bis(2-ethylhexyl)phthalate	850	374	44.0	10	158
Butyl benzyl phthalate	850	408	48.0	10	152
Carbazole	850	413	48.6	45	135
Chrysene	850	411	48.4	17	168
Dibenz(a,h)anthracene	850	397	46.7	10	227
Dibenzofuran	850	415	48.8	30	160
Diethyl phthalate	850	397	46.7	10	160
Dimethyl phthalate	850	402	47.3	10	112
Di-n-butyl phthalate	850	401	47.2	40	132
Di-n-octyl phthalate	850	360	42.4	10	146
Fluoranthene	850	431	50.7	26	137
Fluorene	850	399	46.9	35	135
Hexachlorobenzene	850	425	50.0	10	152
Hexachlorobutadiene	850	365	42.9	20	140
Hexachlorocyclopentadiene	850	578	68.0	10	152
Hexachloroethane	850	389	45.8	25	118
Indeno(1,2,3-cd)pyrene	850	412	48.5	10	171
Isophorone	850	440	51.8	21	196
Naphthalene	850	416	48.9	21	133
Nitrobenzene	850	404	47.5	35	180
N-Nitrosodi-n-propylamine	850	396	46.6	10	230
N-Nitrosodiphenylamine	1700	1040	61.2	30	160
Pentachlorophenol	850	147	17.3	14	176
Phenanthrene	850	420	49.4	35	135
Phenol	850	455	53.5	44	120
Pyrene	850	438	51.5	34	138
Pyridine	1700	741	43.6	10	150
2-Methylphenol	850	436	51.3	40	160
3 & 4-Methylphenol	850	396	46.6	40	160
Surr: 2,4,6-Tribromophenol	2500	1580	63.2	19	135
Surr: 2-Fluorobiphenyl	1700	807	47.5	15	140

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050065
Method: SW8270C **Lab Batch ID:** 90048

Laboratory Control Sample (LCS)

RunID: H_090513B-5017954 Units: ug/kg
Analysis Date: 05/13/2009 10:29 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Surr: 2-Fluorophenol	2500	1660	66.4	15	122
Surr: Nitrobenzene-d5	1700	837	49.2	32	153
Surr: Phenol-d5	2500	1720	68.8	10	123
Surr: Terphenyl-d14	1700	816	48.0	18	166

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050091-01
RunID: H_090508E-5017905 Units: ug/kg
Analysis Date: 05/08/2009 20:15 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2,4-Trichlorobenzene	ND	850	437	51.4	850	292	34.4	39.8 *	28	34	116
1,2-Dichlorobenzene	ND	850	443	52.1	850	329	38.7	29.5	60	32	129
1,2-Diphenylhydrazine	ND	850	500	58.8	850	326	38.4	42.1	60	10	256
1,3-Dichlorobenzene	ND	850	417	49.1	850	318	37.4	26.9	60	10	172
1,4-Dichlorobenzene	ND	850	425	50.0	850	314	36.9	30.0 *	28	20	124
2,4,5-Trichlorophenol	ND	850	477	56.1	850	297	34.9 *	46.5	60	40	150
2,4,6-Trichlorophenol	ND	850	448	52.7	850	303	35.6 *	38.6	60	37	144
2,4-Dichlorophenol	ND	850	429	50.5	850	283	33.3 *	41.0	60	39	135
2,4-Dimethylphenol	ND	850	458	53.9	850	303	35.6	40.7	60	32	119
2,4-Dinitrophenol	ND	850	0	0 *	850	0	0 *	0	60	10	191
2,4-Dinitrotoluene	ND	850	485	57.1	850	301	35.4	46.8	50	30	150
2,6-Dinitrotoluene	ND	850	470	55.3	850	292	34.4	46.7	60	30	150
2-Chloronaphthalene	ND	850	486	57.2	850	335	39.4	36.8	60	20	175
2-Chlorophenol	ND	850	465	54.7	850	327	38.5	34.8	40	23	134
2-Methylnaphthalene	ND	850	476	56.0	850	318	37.4	39.8	60	30	135
2-Nitroaniline	ND	850	478	56.2	850	307	36.1	43.6	60	20	175
2-Nitrophenol	ND	850	434	51.1	850	296	34.8	37.8	60	29	182
3,3'-Dichlorobenzidine	ND	850	451	53.1	850	271	31.9	49.9	60	10	261

Qualifiers:
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C **WorkOrder:** 09050065
Method: SW8270C **Lab Batch ID:** 90048

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050091-01
RunID: H_090508E-5017905 Units: ug/kg
Analysis Date: 05/08/2009 20:15 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
3-Nitroaniline	ND	850	441	51.9	850	267	31.4	49.2	60	20	175
4,6-Dinitro-2-methylphenol	ND	850	43.9	5.16 *	850	27.8	3.27 *	44.9	60	10	181
4-Bromophenyl phenyl ether	ND	850	459	54.0	850	298	35.1	42.5	60	20	175
4-Chloro-3-methylphenol	ND	850	501	58.9	850	311	36.6	46.8 *	42	22	147
4-Chloroaniline	ND	850	561	66.0	850	353	41.5	45.5	60	20	175
4-Chlorophenyl phenyl ether	ND	850	447	52.6	850	305	35.9	37.8	60	25	158
4-Nitroaniline	ND	850	448	52.7	850	274	32.2	48.2	60	20	175
4-Nitrophenol	ND	850	480	56.5	850	243	28.6	65.6 *	50	10	132
Acenaphthene	ND	850	459	54.0	850	303	35.6	40.9 *	31	30	160
Acenaphthylene	ND	850	464	54.6	850	312	36.7	39.2	50	10	150
Aniline	ND	1700	911	53.6	1700	631	37.1	36.3	60	10	160
Anthracene	ND	850	493	58.0	850	303	35.6	47.7	50	27	133
Benz(a)anthracene	ND	850	522	61.4	850	321	37.8	47.7	50	33	143
Benzo(a)pyrene	ND	850	452	53.2	850	282	33.2	46.3	60	17	163
Benzo(b)fluoranthene	ND	850	479	56.4	850	304	35.8	44.7	60	24	159
Benzo(g,h,i)perylene	ND	850	468	55.1	850	286	33.6	48.3	60	10	219
Benzo(k)fluoranthene	ND	850	514	60.5	850	310	36.5	49.5	60	11	162
Benzoic acid	ND	850	0	0 *	850	0	0 *	0	60	10	450
Benzyl alcohol	ND	850	453	53.3	850	290	34.1	43.9	60	30	160
Bis(2-chloroethoxy)methane	ND	850	461	54.2	850	302	35.5	41.7	60	33	184
Bis(2-chloroethyl)ether	ND	850	474	55.8	850	323	38.0	37.9	60	28	158
Bis(2-chloroisopropyl)ether	ND	850	484	56.9	850	346	40.7	33.3	60	36	166
Bis(2-ethylhexyl)phthalate	ND	850	534	62.8	850	317	37.3	51.0	60	10	158
Butyl benzyl phthalate	ND	850	529	62.2	850	326	38.4	47.5	60	10	152
Carbazole	ND	850	491	57.8	850	301	35.4 *	48.0	60	45	135
Chrysene	ND	850	508	59.8	850	318	37.4	46.0	60	17	168
Dibenz(a,h)anthracene	ND	850	479	56.4	850	278	32.7	53.1	60	10	227
Dibenzofuran	ND	850	462	54.4	850	309	36.4 *	39.7	60	45	135
Diethyl phthalate	ND	850	466	54.8	850	299	35.2	43.7	60	10	160
Dimethyl phthalate	ND	850	471	55.4	850	306	36.0	42.5	60	10	112
Di-n-butyl phthalate	ND	850	516	60.7	850	304	35.8 *	51.7	60	40	132
Di-n-octyl phthalate	ND	850	518	60.9	850	313	36.8	49.3	60	10	146

Qualifiers:
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B/V - Analyte detected in the associated Method Blank
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MI - Matrix Interference
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C
WorkOrder: 09050065
Lab Batch ID: 90048

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050091-01
RunID: H_090508E-5017905 Units: ug/kg
Analysis Date: 05/08/2009 20:15 Analyst: GY
Preparation Date: 05/06/2009 15:27 Prep By: QMT Method SW3550C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Fluoranthene	ND	850	521	61.3	850	328	38.6	45.5	60	26	137
Fluorene	ND	850	455	53.5	850	304	35.8 *	39.8	60	45	135
Hexachlorobenzene	ND	850	468	55.1	850	292	34.4	46.3	60	10	152
Hexachlorobutadiene	ND	850	424	49.9	850	278	32.7	41.6	60	20	140
Hexachlorocyclopentadiene	ND	850	460	54.1	850	321	37.8	35.6	60	10	152
Hexachloroethane	ND	850	433	50.9	850	308	36.2	33.7	60	25	118
Indeno(1,2,3-cd)pyrene	ND	850	466	54.8	850	287	33.8	47.5	60	10	171
Isophorone	ND	850	505	59.4	850	316	37.2	46.0	60	21	196
Naphthalene	ND	850	461	54.2	850	316	37.2	37.3	60	21	133
Nitrobenzene	ND	850	436	51.3	850	305	35.9	35.4	60	35	180
N-Nitrosodi-n-propylamine	ND	850	483	56.8	850	338	39.8	35.3	38	10	230
N-Nitrosodiphenylamine	ND	1700	1160	68.2	1700	739	43.5	44.3	60	30	160
Pentachlorophenol	ND	850	219	25.8	850	103	12.1 *	72.0 *	50	14	176
Phenanthrene	ND	850	476	56.0	850	303	35.6 *	44.4	60	45	135
Phenol	ND	850	492	57.9	850	350	41.2 *	33.7	42	44	120
Pyrene	ND	850	530	62.4	850	325	38.2	48.0 *	31	26	127
Pyridine	ND	1700	685	40.3	1700	492	28.9	32.8	60	10	150
2-Methylphenol	ND	850	490	57.6	850	349	41.1	33.6	60	40	160
3 & 4-Methylphenol	ND	850	445	52.4	850	ND	35.3 *	38.9	60	40	160
Surr: 2,4,6-Tribromophenol	ND	2500	1860	74.4	2500	1140	45.6	48.0 *	30	19	135
Surr: 2-Fluorobiphenyl	ND	1700	884	52.0	1700	599	35.2	38.4 *	30	15	140
Surr: 2-Fluorophenol	ND	2500	1700	68.0	2500	1200	48.0	34.5 *	30	15	122
Surr: Nitrobenzene-d5	ND	1700	901	53.0	1700	597	35.1	40.6 *	30	10	134
Surr: Phenol-d5	ND	2500	1860	74.4	2500	1260	50.4	38.5 *	30	10	123
Surr: Terphenyl-d14	ND	1700	959	56.4	1700	577	33.9	49.7 *	30	18	166

Qualifiers:

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J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050065
Method: SW8260B **Lab Batch ID:** R272205

Method Blank

RunID: M_090507E-5012044 Units: ug/kg
Analysis Date: 05/07/2009 14:32 Analyst: TLE

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01A	MW-6-54-55'

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	100
Acrylonitrile	ND	50
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050065
Method: SW8260B **Lab Batch ID:** R272205

Method Blank

RunID: M_090507E-5012044 Units: ug/kg
Analysis Date: 05/07/2009 14:32 Analyst: TLE

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	10
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	87.4	64-115
Surr: 4-Bromofluorobenzene	106.5	65-131
Surr: Toluene-d8	95.5	75-136

Laboratory Control Sample (LCS)

RunID: M_090507E-5012043 Units: ug/kg
Analysis Date: 05/07/2009 12:31 Analyst: TLE

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	20.3	102	56	140
1,1,1-Trichloroethane	20.0	21.2	106	58	135
1,1,2,2-Tetrachloroethane	20.0	19.9	99.3	52	139
1,1,2-Trichloroethane	20.0	20.2	101	81	138
1,1-Dichloroethane	20.0	20.1	101	56	137

Qualifiers:

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050065
Method: SW8260B **Lab Batch ID:** R272205

Laboratory Control Sample (LCS)

RunID: M_090507E-5012043 Units: ug/kg
Analysis Date: 05/07/2009 12:31 Analyst: TLE

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	16.2	81.0	56	135
1,1-Dichloropropene	20.0	21.2	106	62	132
1,2,3-Trichlorobenzene	20.0	22.9	115	53	144
1,2,3-Trichloropropane	20.0	19.9	99.3	44	141
1,2,4-Trichlorobenzene	20.0	21.9	109	51	143
1,2,4-Trimethylbenzene	20.0	18.8	94.0	59	148
1,2-Dibromo-3-chloropropane	20.0	19.2	96.2	53	144
1,2-Dibromoethane	20.0	20.8	104	55	138
1,2-Dichlorobenzene	20.0	20.1	101	63	137
1,2-Dichloroethane	20.0	20.5	103	56	135
1,2-Dichloropropane	20.0	21.1	106	62	132
1,3,5-Trimethylbenzene	20.0	18.4	91.8	54	145
1,3-Dichlorobenzene	20.0	20.1	101	66	137
1,3-Dichloropropane	20.0	19.6	98.0	59	138
1,4-Dichlorobenzene	20.0	19.9	99.5	61	142
2,2-Dichloropropane	20.0	19.4	97.2	55	138
2-Butanone	20.0	25.0	125	10	191
2-Chloroethyl vinyl ether	20.0	25.9	129	10	181
2-Chlorotoluene	20.0	19.5	97.6	64	139
2-Hexanone	20.0	19.8	98.8	18	182
4-Chlorotoluene	20.0	19.0	95.0	63	138
4-Isopropyltoluene	20.0	19.4	97.0	59	156
4-Methyl-2-pentanone	20.0	20.3	102	10	166
Acetone	20.0	25.5	128	10	200
Acrylonitrile	20.0	19.8	98.9	38	169
Benzene	20.0	20.8	104	64	130
Bromobenzene	20.0	19.0	95.0	58	139
Bromochloromethane	20.0	24.4	122	66	127
Bromodichloromethane	20.0	21.5	108	59	134
Bromoform	20.0	19.5	97.3	65	135
Bromomethane	20.0	20.3	101	40	134
Carbon disulfide	20.0	18.1	90.4	53	130
Carbon tetrachloride	20.0	19.2	96.1	61	132
Chlorobenzene	20.0	21.2	106	60	140

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050065
Method: SW8260B **Lab Batch ID:** R272205

Laboratory Control Sample (LCS)

RunID: M_090507E-5012043 Units: ug/kg
Analysis Date: 05/07/2009 12:31 Analyst: TLE

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	16.9	84.7	45	140
Chloroform	20.0	21.2	106	64	131
Chloromethane	20.0	18.3	91.5	39	140
Dibromochloromethane	20.0	19.4	97.1	54	138
Dibromomethane	20.0	23.1	115	64	131
Dichlorodifluoromethane	20.0	15.1	75.3	35	133
Ethylbenzene	20.0	20.9	104	58	143
Hexachlorobutadiene	20.0	25.0	125	56	166
Isopropylbenzene	20.0	18.5	92.3	58	133
Methyl tert-butyl ether	40.0	41.8	104	50	132
Methylene chloride	20.0	18.9	94.6	52	144
Naphthalene	20.0	20.5	103	51	139
n-Butylbenzene	20.0	19.3	96.5	59	164
n-Propylbenzene	20.0	18.7	93.6	57	140
sec-Butylbenzene	20.0	19.2	95.9	63	146
Styrene	20.0	21.1	105	57	134
tert-Butylbenzene	20.0	18.6	93.2	57	144
Tetrachloroethene	20.0	22.5	113	41	156
Toluene	20.0	20.2	101	63	139
Trichloroethene	20.0	23.6	118	62	135
Trichlorofluoromethane	20.0	17.2	85.9	53	140
Vinyl acetate	20.0	19.2	96.2	17	163
Vinyl chloride	20.0	19.3	96.6	45	148
cis-1,2-Dichloroethene	20.0	23.4	117	70	129
cis-1,3-Dichloropropene	20.0	22.0	110	58	132
m,p-Xylene	40.0	42.5	106	64	137
o-Xylene	20.0	21.6	108	64	143
trans-1,2-Dichloroethene	20.0	22.8	114	63	130
trans-1,3-Dichloropropene	20.0	21.1	105	58	128
1,2-Dichloroethene (total)	40.0	46.2	116	63	130
Xylenes,Total	60.0	64.1	107	64	143
Surr: 1,2-Dichloroethane-d4	50.0	46.1	92.3	64	115
Surr: 4-Bromofluorobenzene	50.0	52.8	106	65	131
Surr: Toluene-d8	50.0	47	94.0	75	136

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09050065
Lab Batch ID: R272205

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050250-03
RunID: M_090507E-5012046 Units: ug/kg-dry
Analysis Date: 05/07/2009 16:03 Analyst: TLE
Preparation Date: 05/07/2009 11:01 Prep By: E_G Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	25.3	20.6	81.5	25.3	20.8	82.1	0.679	30	38	129
1,1,1-Trichloroethane	ND	25.3	27.7	109	25.3	28.5	112	2.79	30	44	154
1,1,2,2-Tetrachloroethane	ND	25.3	14.6	57.8	25.3	15.1	59.8	3.39	30	14	143
1,1,2-Trichloroethane	ND	25.3	17.0	67.1	25.3	17.2	68.0	1.21	30	34	135
1,1-Dichloroethane	ND	25.3	24.8	98.1	25.3	24.7	97.4	0.696	30	42	146
1,1-Dichloroethene	ND	25.3	20.5	80.8	25.3	18.7	73.7	9.15	22	39	168
1,1-Dichloropropene	ND	25.3	28.7	113	25.3	29.0	115	1.12	30	42	156
1,2,3-Trichlorobenzene	ND	25.3	16.9	66.9	25.3	17.6	69.4	3.68	30	10	125
1,2,3-Trichloropropane	ND	25.3	14.9	58.8	25.3	15.5	61.4	4.39	30	10	154
1,2,4-Trichlorobenzene	ND	25.3	17.4	68.7	25.3	18.0	71.1	3.55	30	10	128
1,2,4-Trimethylbenzene	ND	25.3	19.4	76.6	25.3	19.6	77.6	1.25	30	22	139
1,2-Dibromo-3-chloropropane	ND	25.3	14.1	55.8	25.3	15.8	62.6	11.5	30	23	139
1,2-Dibromoethane	ND	25.3	16.3	64.4	25.3	16.5	65.0	0.897	30	32	129
1,2-Dichlorobenzene	ND	25.3	17.4	68.6	25.3	17.9	70.7	3.10	30	17	130
1,2-Dichloroethane	ND	25.3	19.3	76.1	25.3	19.7	77.9	2.39	30	15	158
1,2-Dichloropropane	ND	25.3	23.1	91.1	25.3	22.6	89.2	2.10	30	42	133
1,3,5-Trimethylbenzene	ND	25.3	20.2	79.7	25.3	20.5	80.9	1.41	30	22	135
1,3-Dichlorobenzene	ND	25.3	19.2	75.8	25.3	19.3	76.1	0.362	30	22	130
1,3-Dichloropropane	ND	25.3	16.4	64.7	25.3	16.4	64.8	0.193	30	37	131
1,4-Dichlorobenzene	ND	25.3	18.2	71.8	25.3	18.4	72.8	1.35	30	20	129
2,2-Dichloropropane	ND	25.3	25.0	98.8	25.3	25.6	101	2.35	30	39	155
2-Butanone	ND	25.3	25.5	101	25.3	26.2	103	2.64	30	10	200
2-Chloroethyl vinyl ether	ND	25.3	15.3	60.5	25.3	16.7	66.0	8.69	30	10	168
2-Chlorotoluene	ND	25.3	20.2	79.8	25.3	20.5	80.9	1.47	30	30	133
2-Hexanone	ND	25.3	14.6	57.6	25.3	16.1	63.8	10.1	30	14	151
4-Chlorotoluene	ND	25.3	18.8	74.4	25.3	19.0	75.0	0.870	30	24	133
4-Isopropyltoluene	ND	25.3	21.8	86.1	25.3	22.1	87.4	1.50	30	17	143
4-Methyl-2-pentanone	ND	25.3	15.6	61.6	25.3	16.9	66.9	8.20	30	10	176
Acetone	ND	25.3	26.9	106	25.3	30.1	119	11.2	30	10	200
Acrylonitrile	ND	25.3	17.8	70.4	25.3	19.8	78.3	10.6	30	10	200

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050065
Method: SW8260B **Lab Batch ID:** R272205

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050250-03
RunID: M_090507E-5012046 Units: ug/kg-dry
Analysis Date: 05/07/2009 16:03 Analyst: TLE
Preparation Date: 05/07/2009 11:01 Prep By: E_G Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	25.3	25.3	99.8	25.3	25.3	99.9	0.110	21	49	135
Bromobenzene	ND	25.3	17.3	68.5	25.3	17.5	69.0	0.829	30	29	127
Bromochloromethane	ND	25.3	20.8	82.3	25.3	21.3	83.9	2.02	30	27	147
Bromodichloromethane	ND	25.3	21.4	84.4	25.3	21.0	83.1	1.61	30	32	138
Bromoform	ND	25.3	15.3	60.3	25.3	15.7	62.0	2.85	30	27	129
Bromomethane	ND	25.3	24.2	95.6	25.3	23.6	93.2	2.64	30	32	142
Carbon disulfide	ND	25.3	24.6	97.3	25.3	24.2	95.4	1.96	30	25	168
Carbon tetrachloride	ND	25.3	26.4	104	25.3	26.4	104	0.216	30	48	151
Chlorobenzene	ND	25.3	23.0	90.7	25.3	22.6	89.3	1.54	21	38	130
Chloroethane	ND	25.3	19.4	76.7	25.3	21.2	83.8	8.88	30	29	161
Chloroform	ND	25.3	23.9	94.3	25.3	24.4	96.5	2.27	30	34	153
Chloromethane	ND	25.3	22.4	88.7	25.3	23.4	92.6	4.34	30	31	151
Dibromochloromethane	ND	25.3	17.1	67.6	25.3	17.1	67.5	0.155	30	31	127
Dibromomethane	ND	25.3	19.6	77.3	25.3	20.3	80.2	3.69	30	30	141
Dichlorodifluoromethane	ND	25.3	20.9	82.4	25.3	21.4	84.4	2.36	30	15	167
Ethylbenzene	ND	25.3	25.2	99.3	25.3	24.7	97.7	1.71	30	39	135
Hexachlorobutadiene	ND	25.3	27.1	107	25.3	27.9	110	2.92	30	10	149
Isopropylbenzene	ND	25.3	23.0	90.7	25.3	22.7	89.6	1.25	30	25	142
Methyl tert-butyl ether	ND	50.6	35.3	69.7	50.6	36.6	72.3	3.71	30	19	142
Methylene chloride	ND	25.3	15.7	61.9	25.3	17.9	70.6	13.0	30	13	170
Naphthalene	ND	25.3	13.1	51.8	25.3	14.4	57.0	9.56	30	10	124
n-Butylbenzene	ND	25.3	21.8	86.1	25.3	22.1	87.1	1.14	30	10	156
n-Propylbenzene	ND	25.3	21.7	85.6	25.3	21.4	84.7	1.07	30	20	141
sec-Butylbenzene	ND	25.3	22.2	87.8	25.3	22.6	89.4	1.83	30	29	142
Styrene	ND	25.3	21.8	86.2	25.3	21.5	85.0	1.37	30	28	133
tert-Butylbenzene	ND	25.3	21.7	85.9	25.3	22.0	87.0	1.29	30	26	141
Tetrachloroethene	ND	25.3	27.5	109	25.3	27.6	109	0.487	30	33	149
Toluene	ND	25.3	24.1	95.1	25.3	24.2	95.5	0.435	21	49	133
Trichloroethene	ND	25.3	30.3	120	25.3	30.2	119	0.494	24	51	142
Trichlorofluoromethane	ND	25.3	23.4	92.4	25.3	22.1	87.2	5.77	30	24	184
Vinyl acetate	ND	25.3	14.3	56.4	25.3	14.7	57.9	2.61	30	10	174
Vinyl chloride	ND	25.3	27.6	109	25.3	27.8	110	0.978	30	29	177

Qualifiers:
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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050065
Method: SW8260B **Lab Batch ID:** R272205

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050250-03
RunID: M_090507E-5012046 Units: ug/kg-dry
Analysis Date: 05/07/2009 16:03 Analyst: TLE
Preparation Date: 05/07/2009 11:01 Prep By: E_G Method SW5030B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	25.3	25.2	99.5	25.3	23.5	92.7	7.12	30	38	151
cis-1,3-Dichloropropene	ND	25.3	21.5	85.0	25.3	21.7	85.6	0.663	30	31	131
m,p-Xylene	ND	50.6	50.1	99.0	50.6	49.6	98.0	1.02	30	32	140
o-Xylene	ND	25.3	24.8	97.8	25.3	24.0	94.7	3.19	30	36	142
trans-1,2-Dichloroethene	ND	25.3	29.1	115	25.3	29.2	115	0.152	30	41	153
trans-1,3-Dichloropropene	ND	25.3	19.1	75.5	25.3	19.2	75.7	0.271	30	27	128
1,2-Dichloroethene (total)	ND	50.6	54.3	107	50.6	52.7	104	3.16	30	38	153
Xylenes,Total	ND	75.9	74.9	98.6	75.9	73.6	96.9	1.73	30	32	142
Surr: 1,2-Dichloroethane-d4	ND	63.3	57.8	91.3	63.3	55.4	87.6	4.16	30	64	115
Surr: 4-Bromofluorobenzene	ND	63.3	70.7	112	63.3	69.1	109	2.28	30	65	131
Surr: Toluene-d8	ND	63.3	59.1	93.4	63.3	58.3	92.2	1.29	30	75	136

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
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TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09050065
Lab Batch ID: R272244

Method Blank

RunID: L_090508A-5012600 Units: ug/L
Analysis Date: 05/08/2009 11:16 Analyst: E_G
Preparation Date: 05/08/2009 11:16 Prep By: Method

Analyte	Result	Rep Limit
1,1,1,2-Tetrachloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	20
Acrylonitrile	ND	10
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	ND	10
Ethylbenzene	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-02A	FB-043009-1
09050065-03A	RB-043009-1
09050065-04A	MW-6
09050065-05A	RB-050109-1
09050065-06A	FB-050109-1
09050065-07A	TB-043009-1

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050065
Method: SW8260B **Lab Batch ID:** R272244

Method Blank

RunID: L_090508A-5012600 Units: ug/L
Analysis Date: 05/08/2009 11:16 Analyst: E_G
Preparation Date: 05/08/2009 11:16 Prep By: Method

Analyte	Result	Rep Limit
Hexachlorobutadiene	ND	5.0
Isopropylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Methylene chloride	ND	5.0
Naphthalene	ND	5.0
n-Butylbenzene	ND	5.0
n-Propylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
Styrene	ND	5.0
tert-Butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl acetate	ND	10
Vinyl chloride	ND	2.0
cis-1,2-Dichloroethene	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	107.8	78-116
Surr: 4-Bromofluorobenzene	104.7	74-125
Surr: Toluene-d8	108.1	82-118

Laboratory Control Sample (LCS)

RunID: L_090508A-5012599 Units: ug/L
Analysis Date: 05/08/2009 10:36 Analyst: E_G
Preparation Date: 05/08/2009 10:36 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	15.2	75.8	71	128
1,1,1-Trichloroethane	20.0	18.1	90.4	61	135
1,1,2,2-Tetrachloroethane	20.0	19.4	96.9	60	133
1,1,2-Trichloroethane	20.0	19.5	97.5	77	127
1,1-Dichloroethane	20.0	20.3	101	68	132

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis:	**Volatile Organics by Method 8260B**	**WorkOrder:**	**09050065**
Method:	**SW8260B**	**Lab Batch ID:**	**R272244**

Laboratory Control Sample (LCS)

RunID:	L_090508A-5012599	Units:	ug/L
Analysis Date:	05/08/2009 10:36	Analyst:	E_G
Preparation Date:	05/08/2009 10:36	Prep By:	Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	20.0	100	65	134
1,1-Dichloropropene	20.0	20.0	100	68	126
1,2,3-Trichlorobenzene	20.0	16.3	81.4	36	154
1,2,3-Trichloropropane	20.0	18.3	91.4	38	153
1,2,4-Trichlorobenzene	20.0	15.4	77.0	69	144
1,2,4-Trimethylbenzene	20.0	17.7	88.7	64	128
1,2-Dibromo-3-chloropropane	20.0	17.4	87.2	44	141
1,2-Dibromoethane	20.0	17.2	86.1	75	124
1,2-Dichlorobenzene	20.0	16.7	83.4	68	124
1,2-Dichloroethane	20.0	18.1	90.6	61	138
1,2-Dichloropropane	20.0	20.3	102	76	123
1,3,5-Trimethylbenzene	20.0	17.1	85.5	61	127
1,3-Dichlorobenzene	20.0	17.1	85.3	68	127
1,3-Dichloropropane	20.0	18.7	93.7	76	125
1,4-Dichlorobenzene	20.0	16.8	83.8	68	124
2,2-Dichloropropane	20.0	18.3	91.3	42	142
2-Butanone	20.0	20.3	101	22	183
2-Chloroethyl vinyl ether	20.0	23.6	118	10	179
2-Chlorotoluene	20.0	18.3	91.4	64	132
2-Hexanone	20.0	21.2	106	31	178
4-Chlorotoluene	20.0	17.8	88.8	61	132
4-Isopropyltoluene	20.0	17.4	87.2	63	136
4-Methyl-2-pentanone	20.0	21.2	106	10	159
Acetone	20.0	24.2	121	10	200
Acrylonitrile	20.0	24.8	124	54	155
Benzene	20.0	18.6	93.2	74	123
Bromobenzene	20.0	16.3	81.3	68	125
Bromochloromethane	20.0	19.4	97.0	71	124
Bromodichloromethane	20.0	16.8	84.1	72	128
Bromoform	20.0	24.1	121	81	135
Bromomethane	20.0	18.7	93.5	53	130
Carbon disulfide	20.0	20.4	102	41	143
Carbon tetrachloride	20.0	14.4	71.9	59	142
Chlorobenzene	20.0	16.9	84.4	75	125

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050065
Method: SW8260B **Lab Batch ID:** R272244

Laboratory Control Sample (LCS)

RunID: L_090508A-5012599 Units: ug/L
Analysis Date: 05/08/2009 10:36 Analyst: E_G
Preparation Date: 05/08/2009 10:36 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	20.4	102	60	134
Chloroform	20.0	19.2	95.8	71	127
Chloromethane	20.0	14.5	72.4	50	139
Dibromochloromethane	20.0	14.7	73.5	65	130
Dibromomethane	20.0	18.6	92.8	79	124
Dichlorodifluoromethane	20.0	14.0	69.8	22	162
Ethylbenzene	20.0	16.7	83.6	72	127
Hexachlorobutadiene	20.0	14.9	74.5	45	152
Isopropylbenzene	20.0	14.6	73.0	58	130
Methyl tert-butyl ether	40.0	38.9	97.3	63	123
Methylene chloride	20.0	20.4	102	61	135
Naphthalene	20.0	17.8	88.9	33	148
n-Butylbenzene	20.0	19.9	99.3	62	136
n-Propylbenzene	20.0	17.1	85.5	57	131
sec-Butylbenzene	20.0	18.8	94.0	63	131
Styrene	20.0	17.0	85.0	69	120
tert-Butylbenzene	20.0	17.6	88.1	59	131
Tetrachloroethene	20.0	17.3	86.3	45	173
Toluene	20.0	18.1	90.7	74	126
Trichloroethene	20.0	17.4	87.2	79	131
Trichlorofluoromethane	20.0	17.1	85.3	49	153
Vinyl acetate	20.0	22.7	114	10	167
Vinyl chloride	20.0	16.9	84.7	51	148
cis-1,2-Dichloroethene	20.0	20.8	104	71	128
cis-1,3-Dichloropropene	20.0	17.4	86.9	67	128
m,p-Xylene	40.0	33.9	84.7	71	129
o-Xylene	20.0	17.2	86.0	74	130
trans-1,2-Dichloroethene	20.0	19.9	99.7	66	128
trans-1,3-Dichloropropene	20.0	15.5	77.7	60	128
1,2-Dichloroethene (total)	40.0	40.7	102	66	128
Xylenes,Total	60.0	51.1	85.2	71	130
Surr: 1,2-Dichloroethane-d4	50.0	53.2	106	78	116
Surr: 4-Bromofluorobenzene	50.0	52.4	105	74	125
Surr: Toluene-d8	50.0	53.5	107	82	118

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis:	**Volatile Organics by Method 8260B**	**WorkOrder:**	**09050065**
Method:	**SW8260B**	**Lab Batch ID:**	**R272244**

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050065-04
RunID: L_090508A-5012607 Units: ug/L
Analysis Date: 05/08/2009 15:28 Analyst: E_G

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	20	14.5	72.5	20	14.8	74.0	2.08	20	68	124
1,1,1-Trichloroethane	ND	20	17.6	87.9	20	17.5	87.7	0.290	20	69	123
1,1,2,2-Tetrachloroethane	ND	20	18.8	94.0	20	19.6	98.2	4.33	20	69	130
1,1,2-Trichloroethane	ND	20	19.4	96.8	20	19.4	97.0	0.232	20	75	126
1,1-Dichloroethane	ND	20	21.0	105	20	20.8	104	1.29	20	65	129
1,1-Dichloroethene	ND	20	20.1	101	20	19.7	98.7	1.92	22	61	139
1,1-Dichloropropene	ND	20	19.7	98.6	20	19.5	97.4	1.24	20	69	121
1,2,3-Trichlorobenzene	ND	20	11.7	58.5	20	14.0	69.9	17.8	20	53	127
1,2,3-Trichloropropane	ND	20	17.7	88.7	20	18.2	91.0	2.54	20	79	124
1,2,4-Trichlorobenzene	ND	20	11.6	57.8 *	20	13.3	66.3	13.6	20	58	118
1,2,4-Trimethylbenzene	ND	20	16.3	81.7	20	16.1	80.7	1.26	20	43	132
1,2-Dibromo-3-chloropropane	ND	20	15.5	77.3	20	17.3	86.7	11.4	20	46	131
1,2-Dibromoethane	ND	20	17.0	85.0	20	16.8	83.9	1.32	20	76	122
1,2-Dichlorobenzene	ND	20	15.7	78.4	20	15.6	78.0	0.537	20	74	110
1,2-Dichloroethane	ND	20	18.6	93.2	20	18.6	93.0	0.225	20	60	129
1,2-Dichloropropane	ND	20	20.3	101	20	20.2	101	0.435	20	76	116
1,3,5-Trimethylbenzene	ND	20	16.3	81.5	20	15.9	79.3	2.76	20	51	121
1,3-Dichlorobenzene	ND	20	16.1	80.7	20	16.2	81.1	0.544	20	71	110
1,3-Dichloropropane	ND	20	18.6	93.0	20	18.5	92.5	0.598	20	80	119
1,4-Dichlorobenzene	ND	20	15.9	79.7	20	15.6	77.8	2.38	20	69	110
2,2-Dichloropropane	ND	20	16.5	82.7	20	16.8	83.9	1.46	20	52	122
2-Butanone	ND	20	21.8	109	20	25.7	129	16.5	20	10	133
2-Chloroethyl vinyl ether	ND	20	0	0 *	20	0	0 *	0	20	10	182
2-Chlorotoluene	ND	20	17.8	88.8	20	17.1	85.5	3.77	20	69	112
2-Hexanone	ND	20	24.0	120	20	25.0	125	3.89	20	10	163
4-Chlorotoluene	ND	20	17.2	85.9	20	16.6	83.1	3.25	20	37	110
4-Isopropyltoluene	ND	20	15.3	76.7	20	15.4	77.2	0.650	20	65	116
4-Methyl-2-pentanone	ND	20	21.7	108 *	20	22.6	113 *	4.08	20	10	103
Acetone	ND	20	28.2	141	20	39.0	195 *	32.0 *	20	10	160
Acrylonitrile	ND	20	22.4	112	20	26.2	131	15.9	20	45	155

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050065
Method: SW8260B **Lab Batch ID:** R272244

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050065-04
RunID: L_090508A-5012607 Units: ug/L
Analysis Date: 05/08/2009 15:28 Analyst: E_G

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	18.3	91.5	20	18.2	91.0	0.510	22	70	124
Bromobenzene	ND	20	15.9	79.6	20	15.6	78.1	1.86	20	72	111
Bromochloromethane	ND	20	17.2	85.9	20	17.6	87.8	2.16	20	73	126
Bromodichloromethane	ND	20	16.6	82.9	20	16.8	83.8	0.996	20	68	125
Bromoform	ND	20	21.4	107	20	22.1	111	3.37	20	44	132
Bromomethane	ND	20	18.1	90.4	20	19.2	95.8	5.77	20	50	140
Carbon disulfide	ND	20	19.4	96.8	20	19.4	97.2	0.443	20	46	143
Carbon tetrachloride	ND	20	14.0	69.9	20	13.7	68.7	1.79	20	66	126
Chlorobenzene	ND	20	16.2	81.1	20	16.2	80.8	0.389	21	68	123
Chloroethane	ND	20	20.2	101	20	21.1	106	4.24	20	59	134
Chloroform	ND	20	18.5	92.3	20	18.4	92.2	0.135	20	68	127
Chloromethane	ND	20	16.9	84.7	20	15.3	76.3	10.5	20	51	137
Dibromochloromethane	ND	20	13.7	68.7	20	13.8	69.1	0.501	20	58	131
Dibromomethane	ND	20	18.2	91.2	20	18.6	93.0	2.00	20	82	123
Dichlorodifluoromethane	ND	20	13.7	68.3	20	13.5	67.3	1.45	20	35	143
Ethylbenzene	ND	20	15.8	78.8	20	15.8	79.0	0.311	20	76	122
Hexachlorobutadiene	ND	20	9.81	49.1	20	11.0	54.9	11.3	20	43	137
Isopropylbenzene	ND	20	13.5	67.3	20	13.5	67.3	0.0297	20	57	124
Methyl tert-butyl ether	ND	40	39.4	98.6	40	40.0	99.9	1.39	20	10	200
Methylene chloride	ND	20	20.5	103	20	20.7	104	0.945	20	70	134
Naphthalene	ND	20	14.0	70.2	20	16.4	81.8	15.1	20	42	140
n-Butylbenzene	ND	20	16.9	84.3	20	17.3	86.7	2.77	20	82	112
n-Propylbenzene	ND	20	15.9	79.7	20	15.5	77.6	2.63	20	73	108
sec-Butylbenzene	ND	20	16.8	84.2	20	16.6	83.2	1.16	20	76	110
Styrene	ND	20	15.7	78.6	20	15.7	78.3	0.472	20	58	152
tert-Butylbenzene	ND	20	16.4	82.2	20	16.0	79.9	2.78	20	66	120
Tetrachloroethene	ND	20	15.1	75.4	20	14.8	74.0	1.87	20	71	130
Toluene	ND	20	17.5	87.3	20	17.2	86.2	1.27	24	80	117
Trichloroethene	ND	20	16.7	83.6	20	16.4	82.0	1.90	21	82	121
Trichlorofluoromethane	ND	20	17.0	85.2	20	16.7	83.7	1.76	20	74	138
Vinyl acetate	ND	20	22.9	114	20	23.3	116	1.60	20	66	135
Vinyl chloride	ND	20	20.8	104	20	17.7	88.4	16.2	20	45	143

Qualifiers:

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09050065
Method: SW8260B **Lab Batch ID:** R272244

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050065-04
RunID: L_090508A-5012607 Units: ug/L
Analysis Date: 05/08/2009 15:28 Analyst: E_G

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	20	19.8	99.2	20	19.9	99.4	0.156	20	67	132
cis-1,3-Dichloropropene	ND	20	16.0	79.8	20	16.5	82.7	3.61	20	67	116
m,p-Xylene	ND	40	32.1	80.3	40	31.8	79.6	0.813	20	69	127
o-Xylene	ND	20	16.5	82.3 *	20	16.4	82.2 *	0.0912	20	84	114
trans-1,2-Dichloroethene	ND	20	20.2	101	20	19.9	99.4	1.45	20	68	131
trans-1,3-Dichloropropene	ND	20	14.2	70.8	20	14.7	73.4	3.62	20	56	131
1,2-Dichloroethene (total)	ND	40	40	100	40	40	99	0.65	20	67	132
Xylenes,Total	ND	60	48.6	80.9	60	48.2	80.5	0.568	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	50	52.2	104	50	53.4	107	2.15	30	78	116
Surr: 4-Bromofluorobenzene	ND	50	51.6	103	50	52.6	105	1.80	30	74	125
Surr: Toluene-d8	ND	50	53.3	107	50	52.7	105	1.07	30	82	118

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Ion Chromatography **WorkOrder:** 09050065
Method: E300.0 **Lab Batch ID:** R272251

Method Blank

RunID: IC2_090502A-5012729 Units: mg/L
Analysis Date: 05/02/2009 18:24 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-04E	MW-6

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090502A-5012735 Units: mg/L
Analysis Date: 05/02/2009 20:44 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10.00	10.92	109.2	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050065-04
RunID: IC2_090502A-5012733 Units: mg/L
Analysis Date: 05/02/2009 20:09 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	10	11.42	113.4	10	12.60	125.2 *	9.852	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Ion Chromatography **WorkOrder:** 09050065
Method: E300.0 **Lab Batch ID:** R272670

Method Blank

RunID: IC2_090512A-5019634 Units: mg/L
Analysis Date: 05/12/2009 19:11 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-04E	MW-6

Analyte	Result	Rep Limit
Chloride	ND	0.50
Sulfate	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC2_090512A-5019635 Units: mg/L
Analysis Date: 05/12/2009 19:29 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	10.00	9.006	90.06	85	115
Sulfate	10.00	9.169	91.69	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050283-09
RunID: IC2_090512A-5019657 Units: mg/L
Analysis Date: 05/13/2009 2:29 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	557.3	1000	1579	102.2	1000	1637	108.0	3.609	20	80	120
Sulfate	ND	1000	954.9	92.57	1000	949.9	92.06	0.5299	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Ion Chromatography **WorkOrder:** 09050065
Method: E300.0 MOD **Lab Batch ID:** R272873

Method Blank

RunID: IC1_090515C-5022984 Units: mg/kg
Analysis Date: 05/15/2009 21:27 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01D	MW-6-54-55'

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	5.0
Nitrogen,Nitrite (As N)	ND	5.0

Laboratory Control Sample (LCS)

RunID: IC1_090515C-5022985 Units: mg/kg
Analysis Date: 05/15/2009 21:47 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	100.0	97.37	97.37	90	110
Nitrogen,Nitrite (As N)	100.0	104.0	104.0	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050065-01
RunID: IC1_090515C-5022982 Units: mg/kg
Analysis Date: 05/15/2009 20:49 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	100	97.25	97.25	100	96.47	96.47	0.8053	20	80	120
Nitrogen,Nitrite (As N)	ND	100	103.7	103.7	100	103.1	103.1	0.5319	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Ion Chromatography **WorkOrder:** 09050065
Method: E300.0 MOD **Lab Batch ID:** R272875

Method Blank

RunID: IC1_090515E-5023022 Units: mg/kg
Analysis Date: 05/15/2009 21:27 Analyst: BDG

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01D	MW-6-54-55'

Analyte	Result	Rep Limit
Chloride	ND	5.0
Fluoride	ND	5.0
Sulfate	ND	5.0

Laboratory Control Sample (LCS)

RunID: IC1_090515E-5023023 Units: mg/kg
Analysis Date: 05/15/2009 21:47 Analyst: BDG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	100.0	98.88	98.88	80	120
Fluoride	100.0	103.3	103.3	80	120
Sulfate	100.0	106.4	106.4	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09050065-01
RunID: IC1_090515E-5023020 Units: mg/kg
Analysis Date: 05/15/2009 20:49 Analyst: BDG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	61.13	100	168.6	107.4	100	168.6	107.5	0.04745	20	75	125
Fluoride	ND	100	105.5	104.3	100	104.0	102.8	1.461	20	75	125
Sulfate	20.25	100	129.3	109.0	100	128.0	107.7	1.003	20	75	125

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Alkalinity, Bicarbonate
Method: SM2320B
WorkOrder: 09050065
Lab Batch ID: R273005

Method Blank

RunID: WET_090518X-5025312 Units: mg/Kg
Analysis Date: 05/18/2009 16:45 Analyst: PAC

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01D	MW-6-54-55'

Analyte	Result	Rep Limit
Alkalinity, Bicarbonate	ND	20

Laboratory Control Sample (LCS)

RunID: WET_090518X-5025314 Units: mg/Kg
Analysis Date: 05/18/2009 16:45 Analyst: PAC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Bicarbonate	387	390	101	90	110

Sample Duplicate

Original Sample: 09050065-01
RunID: WET_090518X-5025315 Units: mg/Kg
Analysis Date: 05/18/2009 16:45 Analyst: PAC

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Bicarbonate	190	190	0	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Alkalinity, Carbonate
Method: M2320 B
WorkOrder: 09050065
Lab Batch ID: R273007

Method Blank

RunID: WET_090518Y-5025318 Units: mg/kg
Analysis Date: 05/18/2009 16:45 Analyst: PAC

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-01D	MW-6-54-55'

Analyte	Result	Rep Limit
Alkalinity, Carbonate	ND	20

Laboratory Control Sample (LCS)

RunID: WET_090518Y-5025320 Units: mg/kg
Analysis Date: 05/18/2009 16:45 Analyst: PAC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Carbonate	387.0	390.0	100.8	90	110

Sample Duplicate

Original Sample: 09050065-01
RunID: WET_090518Y-5025321 Units: mg/kg
Analysis Date: 05/18/2009 16:45 Analyst: PAC

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Carbonate	ND	ND	0	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

Brown & Caldwell

BJ-Fracmaster 128125

Analysis: Alkalinity (as CaCO3), Total
Method: E310.1
WorkOrder: 09050065
Lab Batch ID: R275095

Method Blank

RunID: WET_090610U-5061236 Units: mg/L
Analysis Date: 06/10/2009 12:30 Analyst: PAC

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09050065-04D	MW-6

Analyte	Result	Rep Limit
Alkalinity, Total (As CaCO3)	ND	2.0

Laboratory Control Sample (LCS)

RunID: WET_090610U-5061238 Units: mg/L
Analysis Date: 06/10/2009 12:30 Analyst: PAC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Total (As CaCO3)	38.70	38.00	98.19	90	110

Sample Duplicate

Original Sample: 09050091-02
RunID: WET_090610U-5061242 Units: mg/L
Analysis Date: 06/10/2009 16:00 Analyst: PAC

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Total (As CaCO3)	477	477	0	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - *Too numerous to count*

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Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**09050065**	Received By:	**RE**
Date and Time Received:	**5/2/2009 10:00:00 AM**	Carrier name:	**Fedex-Priority**
Temperature:	**3.0°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes	☑	No	☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes	☑	No	☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes	☐	No	☐	Not Present ☑
4.	**Chain of custody present?**	Yes	☑	No	☐	
5.	**Chain of custody signed when relinquished and received?**	Yes	☑	No	☐	
6.	**Chain of custody agrees with sample labels?**	Yes	☑	No	☐	
7.	**Samples in proper container/bottle?**	Yes	☑	No	☐	
8.	**Sample containers intact?**	Yes	☑	No	☐	
9.	**Sufficient sample volume for indicated test?**	Yes	☑	No	☐	
10.	**All samples received within holding time?**	Yes	☑	No	☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes	☑	No	☐	
12.	**Water - VOA vials have zero headspace?**	Yes	☐	No	☐	VOA Vials Not Present ☑
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes	☐	No	☐	Not Applicable ☑

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No.: 322327

0905 0065

page 1 of 1

Client Name: Brown and Caldwell
Address: 1415 Louisiana Ste. 2500,
City Houston State TX Zip 77002
Phone/Fax: 713-759-0999 713-308-3886 (fax)
Client Contact: Rick Rexroad Email: rrexroad@brwncald.com
Project Name/No.: BJ - FracMaster 128125
Site Name: BJ - Fracmaster
Site Location: Hobbs, NM
Invoice To: Same Ph:

matrix: W=water S=soil O=oil A=air SL=sludge E=encore X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	Requested Analysis: TPH-GRO	TPH-DRO	SVOC-8270/CL	VOC 8260	RCRA 8 Metals	Cations	Anions	NO_3, SO_4, Alk, Chlorides 300	Methane
MW-6-54-55'	4/30/09	1500	X	X	S	G	4,8	X	5	X	X	X	X	X	X	X		
FB-043009-1	4/30/09	1540		X	W	V	40	1	3				X					
RB-043009-1	5/1/09	0705		X	W	VA	40	1,X	10	X	X	X	X					
MW-6	5/1/09	1200		X	W	VAP	40	1,X	15	X	X	X	X				X	X
RB-050109-1	5/1/09	1330		X	W	VA	40	1,X	10	X	X	X	X					
FB-050109-1	5/1/09	1340		X	W	V	40	1	3				X					
TB-043009-1	4/30/09	—			W	V	40	1	2				X					

RUSH

Client/Consultant Remarks: 2 coolers

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 3.5c

Requested TAT

☐ 1 Business Day ☐ Contract
☐ 2 Business Days ☒ Standard
☐ 3 Business Days
☐ Other
Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

	date	time	
1. Relinquished by Sampler: Ricardo Banda	5/1/09	1630	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	5/2/09	0900	6. Received by Laboratory:

☒ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901
☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (337) 237-4775
☐ 459 Hughes Drive, Traverse City, MI 49686 (231) 947-5777

APPENDIX C

Groundwater Sampling Forms

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-1

1. PROJECT INFORMATION

Project Number: 128125 Task Number: 004 Date: 4-7-09 Time: 12 ST

Client: BJ Services Personnel: R Rexroad

Project Location: Hobbs (Fracmaster) Weather: Clear, ±55°, breeze from South @ 10-20 mph

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 68.30 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 55.31 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Length of Water Column: 12.99 feet	Well Volume: 2.08 gal
Pump intake depth _____ (from GS)	Screened Interval (from GS): _____

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

12.99
.16
7794
1299
20784

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☒ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: 0.5 liters/min

Equipment Model(s)
1. Monsoon pump
2. YSI
3. Hach turbidity

Time	Cum. Liters Removed	pH	°C Temp	Spec* Cond.	mV Eh	Dissolved Oxygen**	Turbidity	Depth to Water (TOC)	Comments
1410	0	8.23	19.45	1.761	-15.0	6.18	NM	55.31	light brn
1412	1	7.66	19.30	1.961	-8.6	5.09		55.61	(turbid)
1414	2	7.46	19.40	2.012	-6.4	4.92		55.64	
1416	3	7.30	19.48	2.056	-5.5	4.81		55.64	less turbid
1418	4	7.21	19.51	2.056	-4.9	4.76		55.64	
1420	5	7.15	19.55	2.099	-4.7	4.73	***	55.64	

*** instrument malfunction or > 1000

4. SAMPLING DATA

* uS/cm ** mg/L ***

Method(s): ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 55.40 Field Filtered? ☐ Yes ☒ No

Sample ID: MW-1 Sample Time: 1509 # of Containers: 14

Duplicate Sample Collected? ☐ Yes ☒ No ID:

Geochemical Analyses

Ferrous Iron:	2.2	mg/L
DO:	1.4	mg/L
Nitrate:	NM	mg/L
Sulfate:		mg/L
Alkalinity:		mg/L

5. COMMENTS

Stable after 5 liters, but need to test DO by Hach ampules because YSI reading >2.5 mg/L. DO at 1.4 mg/L by Hach ampules, so VOCs aliquot collected using disposable bailer

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-liters

FORM GW-1 (Rev 2/26/02 - dg)

R Rexroad
Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-2

1. PROJECT INFORMATION

Project Number: 128125 Task Number: 004 Date: 4-7-09 Time: 0918

Client: BJ Services (Fracmaster) Personnel: R. Rexroad

Project Location: Hobbs, NM Weather: Clear, ± 40°, ± 10 mph breeze from south

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 67.30 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 54.44 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 12.86 feet Well Volume: 2.06 gal Screened Interval (from GS):

Pump intake depth (from GS) *Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft*

67.30
54.44
12.86
.16
7716
1286
2.0576

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Equipment Model(s)

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable 1.

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable 2.

Was well purged dry? ☐ Yes ☐ No Pumping Rate: liters/min 3.

Time	Cum. Liters Removed	pH	Temp	Spec. Cond. *	Eh (mV)	Dissolved Oxygen **	Turbidity	Depth to Water (TOC)	Comments
1009	0	7.02	18.69	2.113	-69.6	4.06		54.44	light brown
1011	1	6.80	18.89	2.096	-67.8	3.56	↓	54.60	
1013	2	6.73	19.04	2.080	-70.8	3.29	↓	54.71	less turbid
1015	3	6.71	19.06	2.065	-71.6	3.69		54.75	
1017	4	6.69	19.09	2.057	-72.1	3.78	546	54.78	

4. SAMPLING DATA

* mS/cm ** mg/L

Method(s): ☐ Bailer, Size: ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Depth to Water at Time of Sampling: 54.45 Field Filtered? ☐ Yes ☒ No

Sample ID: Sample Time: 1144 # of Containers: 14

Duplicate Sample Collected? ☐ Yes ☐ No ID:

Geochemical Analyses

Ferrous Iron: 2.2 mg/L

DO: ~~0.28~~ 0.8 mg/L RJ 2/09

Nitrate: NM mg/L

Sulfate: mg/L

Alkalinity: mg/L

5. COMMENTS

DO at 3.78 mg/L after 4 liters (parameters stable); per work plan, will need to measure DO by HACH Kit from bailer. Did so, DO = 0.8 per Hach ampule; collected VOC aliquot w/ bailer.

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-liters

FORM GW-1 (Rev 2/26/02 - dg)

Signature: R. Rexroad

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-3

66.50
54.89
11.61
.16
6966
1161
1.8576

1. PROJECT INFORMATION

Project Number: 128125 Task Number: 004 Date: 4/8/09 Time: 0715
Client: BJ Services Personnel: Rick Rexroad
Project Location: Hobbs - Fracmaster Weather: ± 45°, low clouds, light to no breeze

2. WELL DATA

Casing Diameter: 2 inches Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 66.50 feet From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 54.89 feet From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: - feet From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Length of Water Column: 11.61 feet Well Volume: 1.86 gal Screened Interval (from GS):
Pump intake depth ____ (from GS)
Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: ____ liters/min

Equipment Model(s)
1. YSI
2. Monsoon pump
3. Hach turbidity
54.89 RR 4/8/09

Time	Cum. Liters Removed	pH	Temp °C	Spec. Cond.*	Eh	Dissolved Oxygen**	Turbidity	Depth to Water (TOC)	Comments
732	0	8.77	17.84	0.584	10.5	3.61	NM	~~66.56~~	Light brown
734	1	8.36	18.30	0.582	8.3	2.39	instrument malfunction	54.99	
***0736	2	8.19	17.74	0.566	9.9	2.14		54.97	
0739	2.5	8.03	17.62	0.567	11.8	2.02		54.98	less turbid
0742	3	7.88	17.72	0.551	13.6	1.93		54.98	
0744	3.5	7.84	17.78	0.549	13.9	1.94		54.98	
0746	4	7.80	17.78	0.547	14.0	1.92		54.98	

4. SAMPLING DATA

* um/cm ** mg/L *** slowed pump rate

Method(s): ☐ Bailer, Size: ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 54.98 Field Filtered? ☐ Yes ☐ No
Sample ID: MW-3 Sample Time: 0812 # of Containers: 14 P
Duplicate Sample Collected? ☒ Yes ☐ No ID: MW-99

Geochemical Analyses
Ferrous Iron: 0 mg/L
DO: 0.6 mg/L
Nitrate: N/M mg/L
Sulfate: ↓ mg/L
Alkalinity: ↓ mg/L

5. COMMENTS

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

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FORM GW-1 (Rev 2/26/02 - dg)

Signature: [signature]

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-4

1. PROJECT INFORMATION

Project Number: 128125 Task Number: _____ Date: 5/2/09 Time: 1100

Client: BJ Services Frac Master Personnel: R. Banda

Project Location: Hobbs NM Weather: Cloudy 70°F, 5-10 mph winds from N

2. WELL DATA

Casing Diameter: 2 inches	Type: ☐ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other: _____
Screen Diameter: 2 inches	Type: ☐ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other: _____
Total Depth of Well: 63.73 feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other: _____
Depth to Static Water: 54.26 feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other: _____
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other: _____

Length of Water Column: 9.47 feet Well Volume: 1.52 gal Screened Interval (from GS): 45-60'

Pump intake depth 56 (~~from GS~~) BTOC *Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft*

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☐ Stainless ☒ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: 0.125 liters/min

Equipment Model(s)
1. Mega Monsoon
2. YSI
3. HACH Turbidity Meter

Time	Cum. Liters Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
1104	L.	—	°C	mS/cm	mV	mg/L	NTUs	ft	
1108	0.5	6.75	23.40	1.914	-152	0.67	3.64	54.72	
1112	1.0	6.74	23.53	1.927	-147	0.54	2.23	54.75	
1116	1.5	6.72	23.35	1.941	-136	0.51	1.52	54.68	
1120	2.0	6.72	23.71	1.939	-129	0.53	1.50	54.60	
1124	2.5	6.72	23.75	1.938	-128	0.54	—	54.58	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☒ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 54.58 Field Filtered? ☐ Yes ☒ No

Sample ID: MW-4 Sample Time: 1200 # of Containers: 15

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: 0.0 mg/L

DO: 0.4 mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-5

1. PROJECT INFORMATION

Project Number: 128125 Task Number: 004 Date: 4-9-09 Time: 0725

Client: BJ Services Personnel: R Rexroad

Project Location: Fracmaster: Hobbs, NM Weather: Clear, ±50°, wind from NW @ ≥40 mph

2. WELL DATA (Stickup ≈ 3')

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 63.80 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 54.98 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: – feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Length of Water Column: 8.82 feet	Well Volume: 1.41 gal Screened Interval (from GS): 60 - 45
Pump intake depth ____ (from GS)	*Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft*

63.80
54.98
8.82
.16
5292
882
1.41 | 12

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ____ ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: ____

Equipment Model(s)

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable — 1. Moonsoon pump

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable — 2. YSI

Was well purged dry? ☐ Yes ☒ No Pumping Rate: ____ liters/min — 3. ____

Time	Cum. Liters Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
0843	0	9.24	18.36	0.597	-5.9	4.91	NM	54.98	sl. turbid, cloudy
0845	1	8.55	14.94	0.598	-26.5	4.42		***	clear
0847	2	8.38	19.02	0.594	-38.8	3.94		***	
0848	3	8.16	19.05	0.591	-47.1	3.81		***	
0850	4	8.16	19.00	0.587	-52.0	3.76		59.13	
0852	5	8.08	19.09	0.584	-56.4	3.61		***	
0854	6	8.04	19.18	0.583	-56.9	3.46		***	

4. SAMPLING DATA

* um/cm ** - mg/L *** - No Reading from Unit

Method(s): ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Depth to Water at Time of Sampling: ~54.98 Field Filtered? ☐ Yes ☒ No

Sample ID: MW-5 Sample Time: 0845 # of Containers: 14

Duplicate Sample Collected? ☐ Yes ☒ No ID:

Geochemical Analyses

Ferrous Iron: ____ mg/L

DO: 0 mg/L

Nitrate: ____ mg/L

Sulfate: ____ mg/L

Alkalinity: ____ mg/L

5. COMMENTS

All parameters stable at 6 liters purge, but DO > 2.5; will collect aliquot for Hach test kit measurement.

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-liters

FORM GW-1 (Rev 2/26/02 - dg)

Signature R Rexroad

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-6

1. PROJECT INFORMATION

Project Number: 128125 Task Number: _____ Date: 5/1/09 Time: 1100

Client: BJ Service Frac Master Site Personnel: R. Banda

Project Location: Hobbs, NM Weather: Sunny 90°F

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 62.92 feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 53.69 feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 9.23 feet Well Volume: 1.48 gal Screened Interval (from GS): 45-60'

Pump intake depth 53.5 (from GS) *Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft*

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☐ Stainless ☒ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: 0.125 liters/min

Equipment Model(s)
1. Mega Monsoon
2. YSI
3. HACH Turbidity meter

Time	Cum. Liters Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
	L.	—	°C	ms/cm	mV	mg/L	NTUs	ft.	
1105	L.	—	°C	ms/cm	mV	mg/L	NTUs	ft.	start purge
1109	0.5	6.76	22.16	2.292	64	9.27	20.6	54.15'	
1113	1.0	6.76	22.51	2.294	67	9.06	15.8	54.13'	
1117	1.5	6.76	22.93	2.321	71	8.94	11.2	54.09	
1121	2.0	6.77	22.98	2.326	71	8.90	10.8	54.05	
1125	2.5	6.77	23.08	2.330	72	8.79	9.57	54.02	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☒ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 54.02 Field Filtered? ☐ Yes ☒ No

Sample ID: MW-6 Sample Time: 1200 # of Containers: 15

Duplicate Sample Collected? ☐ Yes ☒ No ID:

Geochemical Analyses

Ferrous Iron: 0.0 mg/L

DO: 9.2 mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

Used bailer to collect VOCs, TPH-G, and Methane.
Used pump for all other bottles.

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature