Monzeglio, Hope, NMENV

GRCC May MTBE Results

Page 1 of 2

From: Rajen, Gaurav [Gaurav.Rajen@wnr.com]

Sent: Thursday, August 13, 2009 7:57 AM

To: Monzeglio, Hope, NMENV

Cc: Riege, Ed

Subject: May reports for MTBE in OW wells

Attachments: TABLE 1.doc; 2nd qtr-2009 0w29 30 13.pdf; 2nd qtr OW 14.pdf; Feb 23-25, 2009.pdf; Explanatory figure.ppt

Dear Hope:

Could the attached laboratory reports be the ones you are asking for? I do not work on Wednesdays, so am sorry for this delayed response.

Many thanks,

Raj

From: Rajen, Gaurav
Sent: Thursday, June 04, 2009 12:07 PM
To: 'Monzeglio, Hope, NMENV'; Cobrain, Dave, NMENV
Cc: Riege, Ed; Turri, Mark
Subject: In relation to the installation of two new monitoring wells at the Gallup Refinery

Dear Hope:

It is a pleasure to write to you in relation to the letter from John Kieling of May 28, 2009, requiring us to install two new monitoring wells, north and west of existing wells OW-29 and OW-30.

We understand that your concern is that a plume of MTBE contamination may have passed by wells OW-29 and OW-30. As you will see in our attached table and explanatory graphic, the levels in existing wells OW-14, OW-29, OW-30, and OW-13 are fluctuating. In some wells, the levels have gone up then down and then up again. The depth to groundwater has also fluctuated in this area as the table below shows. This may have played a role in the MTBE levels fluctuating anomalously. As we are monitoring the OW-13, OW-14, OW-29 and OW-30 wells now every quarter, we should be able to establish the role of the fluctuating groundwater table if any.

Well #	Date	Depth to water	Date	Depth to water
OW-13	8/18/2008	24.41	2/24/2009	23.93
OW-14	8/21/2008	27.13	2/23/2009	26.73
OW-29	8/19/2008	21.95	2/25/2009	21.43
OW-30	8/20/2008	26.34	2/23/2009	28.87

We would like to request that we continue sampling and monitoring for two more quarters – i.e. till the end of 2009 - before we decide on whether new monitoring wells are needed. As we have recovery wells up-gradient of the wells in question, there is a possibility that the plume may have reversed course, which is why we see levels going down and then up again. If OW-29 levels continue to go up, then we will know with greater certainty that the plume has passed by the existing monitoring wells.

We would also like to review options of remediating the low levels of MTBE we see in this area – by aeration of the groundwater, or by phytoremediation using deep-rooted trees, techniques that have been proven effective at other MTBE in groundwater sites. If we decide to remediate the groundwater, the new wells we establish may have designs that are different from simple monitoring wells.

We hope you will consider our request with due consideration. We look forward to your response.

Sincerely

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This inbound email has been scanned by the MessageLabs Email Security System.

TABLE 1: Levels in OW 13, 14, 29, and 30: All units of concentrations are in mg/l. Quarterly sampling began Fourth Quarter, 2008.

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	Year	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylene	1,2,4 Trimethyl- benzene	МТВЕ
OW#13 **	2009	5/14/2009	< 0.001	<0.001	<0.001	< 0.002	< 0.001	<0.0025
	2009	2/25/2009	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	< 0.0025
	2008	11/13/08	< 0.001	< 0.001	< 0.001	< 0.0015		0.0016
	2008	8/19/08	< 0.001	< 0.001	< 0.001	< 0.0015		< 0.001
	2007	12-27-2007	< 0.001	< 0.001	< 0.001	< 0.0015		0.0013
	2006	10-27-2006	< 0.001	< 0.001	< 0.001	< 0.001		< 0.0025
OW#14 *	2009	5/12/2009	0.11	0.029	0.049	<0.002	0.0016	0.97
	2009	2/23/2009	0.013	0.0014	0.0055	< 0.002	0.0014	1.0
	2008	11/12/08	0.0082	< 0.001	< 0.001	< 0.002		0.91
	2008	8/21/08	.0035	< 0.001	< 0.001	< 0.0015		1.3
	2007	1-1-2008	0.014	< 0.001	< 0.001	< 0.0015		0.92
	2006	12-28-2006	0.0042	< 0.001	0.0025	< 0.003		0.18
	2006	10-27-2006	0.0034	< 0.001	< 0.001	< 0.003		0.016
	2005	9-27-2005	0.017	0.0022	0.0023	0.0014		0.077
OW#29 **	2009	5/14/2009	< 0.001	< 0.001	<0.001	< 0.002	< 0.001	0.041
	2009	2/24/2009	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	0.021
	2008	11/14/08	< 0.001	< 0.001	< 0.001	< 0.0015		0.015
	2008	8/19/08	< 0.001	< 0.001	< 0.001	< 0.0015		.0092
	2007	12-28-2007	< 0.001	< 0.001	< 0.001	< 0.0015		0.0043
	2006	10-27-2006	< 0.001	< 0.001	< 0.001	< 0.003		< 0.0025
	2005	9-27-2005	< 0.001	< 0.001	< 0.001	< 0.0005		< 0.0025
OW#30 *	2009	5/13/2009	< 0.001	<0.001	<0.001	< 0.002	< 0.001	1.1
	2009	2/23/2009	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	1.0
	2008	11/12/08	< 0.001	< 0.001	< 0.001	< 0.002		0.88
	2008	8/20/08	< 0.001	< 0.001	< 0.001	< 0.0015		1.1
	2007	12-28-2007	< 0.001	< 0.001	< 0.001	< 0.0015		0.29
	2006	10-27-2006	< 0.001	< 0.001	< 0.001	< 0.003		< 0.0025
	2005	9-27-2005	< 0.001	< 0.001	< 0.001	< 0.0005		0.018
EPA MCLS			0.005	1.0	0.7	10.0		
Residential Risk Based Screen Levels for Tap Water (12ug/L)			0.01	0.75	0.75	0.62		0.012 (Residential tap water Std.)

Method EPA 8021B Semi-Volatiles used for Fourth Quarter Analysis.
** Method EPA 8260B Volatiles used for Fourth Quarter Analysis.

Benzene is only found in OW-14; recently, Toluene, Ethylbenzene, and 1,2,4 Trimethylbenzene found at trace levels in OW-14 (last seen in 2005). In last five years, Benzene went up, then down, then up in OW-14 (0.017, 0.0034, 0.0042, 0.014, 0,.0035, 0.0082, 0.013, 0.11 ppm).

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In last four quarters, respectively, MTBE went up, then down, then up, then down in OW-14 (1.3, 0.91, 1.0. 0.97 ppm) and OW-30 (1.1, 0.88, 1.0, 1.1 ppm). MTBE went up in OW-29 (0.0092, 0.015, 0.021, 0.041 ppm). Similarly, MTBE fluctuated in OW-13 (<0.001, 0.0016, <0.0025, <0.0025 ppm).





COVER LETTER

Wednesday, June 03, 2009

Gaurav Rajen Western Refining Southwest, Gallup Rt. 3 Box 7 Gallup, NM 87301

TEL: (505) 722-3833 FAX (505) 722-0210

RE: 2009 2nd QTR OW-Well

Dear Gaurav Rajen:

Order No.: 0905336

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 5/19/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001 Texas Lab# T104704424-08-TX



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107 www.hallenvironmental.com

Lab Order: 0905336 Western Refining Southwest, Gallup **CLIENT: Project:** 2009 2nd OTR OW-Well Collection Date: 5/13/2009 3:05:00 PM 0905336-01 Lab ID: Matrix: AQUEOUS Client Sample ID: OW-30 **Date Analyzed** PQL Qual Units DF Result Analyses Analyst: DAM EPA METHOD 8021B: VOLATILES 5/22/2009 1:39:31 AM 1 µg/L ND 1.0 Benzene 5/22/2009 1:39:31 AM 1 1.0 µg/L ND Toluene 5/22/2009 1:39:31 AM 1.0 µg/L 1 ND Ethylbenzene 5/22/2009 1:39:31 AM 1 µg/L 2.0 ND Xylenes, Total 1 5/22/2009 1:39:31 AM µg/L ND 1.0 1,2,4-Trimethylbenzene 5/22/2009 1:39:31 AM 1 1.0 µg/L ND 1,3,5-Trimethylbenzene 5/22/2009 1:39:31 AM %REC 1 80.1 65.9-130 Surr: 4-Bromofluorobenzene Analyst: HL EPA METHOD 8260: VOLATILES SHORT LIST 5/26/2009 5:28:15 PM µg/L 50 50 1100 Methyl tert-butyl ether (MTBE) 5/26/2009 5:28:15 PM 50 %REC 104 80.4-119 Surr: 4-Bromofluorobenzene Collection Date: 5/14/2009 11:06:00 AM 0905336-02 Lab ID: Matrix: AQUEOUS Client Sample ID: OW-29 DF **Date Analyzed** Result POL Qual Units Analyses Analyst: DAM EPA METHOD 8021B: VOLATILES 5/22/2009 2:09:59 AM 1 2.5 µg/L 41 Methyl tert-butyl ether (MTBE) 1 5/22/2009 2:09:59 AM µg/L ND 1.0 Benzene 5/22/2009 2:09:59 AM 1 ND 1.0 µg/L Toluene 5/22/2009 2:09:59 AM µg/L 1 ND 1.0 Ethylbenzene 5/22/2009 2:09:59 AM 1 ND 2.0 µg/L Xylenes, Total 5/22/2009 2:09:59 AM µg/L 1 1.0 ND 1,2,4-Trimethylbenzene 5/22/2009 2:09:59 AM 1 1.0 µg/L ND 1,3,5-Trimethylbenzene 5/22/2009 2:09:59 AM 1 %REC 72.6 65.9-130 Surr: 4-Bromofluorobenzene Collection Date: 5/14/2009 3:22:00 PM 0905336-03 Lab ID: Matrix: AQUEOUS Client Sample ID: OW-13

Cheffe Sumpto 12					
Analyses	Result	PQL Qual	Units	DF	Date Analyzed
EDA METHOD 9021 B. VOLATILES					Analyst: NSB
Mothyl tert butyl ether (MTBE)	ND	2.5	µg/L	1	5/22/2009 10:44:10 PM
Penzono	ND	1.0	µg/L	1	5/22/2009 10:44:10 PM
	ND	1.0	µg/L	1	5/22/2009 10:44:10 PM
Ethylbenzene	ND	1.0	µg/L	1	5/22/2009 10:44:10 PM
	ND	2.0	µg/L	1	5/22/2009 10:44:10 PM
1.2.4.Trimethylbenzene	ND	1.0	µg/L	1	5/22/2009 10:44:10 PM
1.3.5-Trimethylbenzene	ND	1.0	µg/L	1	5/22/2009 10:44:10 PM
Surr: 4-Bromofiuorobenzene	85.0	65.9-130	%REC	1	5/22/2009 10:44:10 PM

Qualifiers:

- E Estimated value
- J Analyte detected below quantitation limits

Hall Environmental Analysis Laboratory, Inc.

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

Date: 03-Jun-09

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

RL Reporting Limit

^{*} Value exceeds Maximum Contaminant Level

Western Refining Southwest, Gallup

Client:

QA/QC SUMMARY REPORT

Project: 2009 2nd Q'	TR OW-We	ell					Wor	k Order:	0905336
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD R	PDLimit	Qual
Method: EPA Method 8021B: \	/olatiles				Deteb	D: 022777	Analysis Date:	5/01/	0000 0·22·24 AM
Sample ID: 5ML RB		MBLK			Batch	D: R33777	Analysis Date.	5/2 1/2	1003 3.22.24 AW
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
1,2,4-Trimethylbenzene	ND	µg/∟	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0					- 100 101	
Sample ID: 5ML RB		MBLK			Batch	ID: R33820	Analysis Date:	5/22/20	009 10:02:47 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	μg/L	1.0						
Ethylbenzene	ND	μg/L	1.0						
Xvienes, Total	ND	µg/L	2.0						
1.2.4-Trimethylbenzene	ND	µg/L	1.0						
1.3.5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R33777	Analysis Date:	5/22/	2009 6:13:09 AM
Mothyl tort butyl other (MTRE)	23 53	un/l	25	58.8	51.2	138			
	20.00	µg/L µg/l	1.0	109	85.9	113			
Tolyono	21.00	µg/L µg/l	1.0	113	86.4	113			
Ethulhenzono	21.00	µg/L	1.0	110	83.5	118			
Ethylogizette	62.02	ug/L	2.0	103	83.4	122			
1 2 4 Trimothylhenzone	21 04	pg/L	10	104	83.5	115			
1,2,4- Infriethylbenzene	21.04	µg/L	1.0	100	85.2	113			
	40.22	108	1.0		Batch	ID: R33820	Analysis Date	5/22/	2009 6:39:59 PM
Sample ID: TOUNG BTEX ECS			.	C.D. 4	E4 0	420	· · · · · · · · · · · · · · · · · · ·		
Methyl tert-butyl ether (MTBE)	24.85	µg/L	2.5	02.1	51.2	130			
Benzene	21.70	µg/L	1.0	108	85.9	113			
Toluene	22.22	µg/L	1.0	111	80.4	113			
Ethylbenzene	22.31	µg/L	1.0	112	83.5	118			
Xylenes, Total	64.10	µg/L	2.0	107	83.4	122			c
1,2,4-Trimethylbenzene	23.13	µg/L	1.0	116	83.5	115			5
1,3,5-Trimethylbenzene	21.79	µg/L	1.0	109	85.2	113	Augusta Dete	. E/00	2000 7-40-20 DM
Sample ID: 100NG BTEX LCSD		LCSD			Batch	ID: R33820	Analysis Dale	. 3/22/	2009 7.10.32 PW
Methyl tert-butyl ether (MTBE)	23.56	µg/L	2.5	58.9	51.2	138	5.33	28	
Benzene	20.62	µg/L	1.0	103	85.9	113	5.07	27	
Toluene	20.79	µg/L	1.0	104	86.4	113	6.67	19	
Ethylbenzene	20.90	µg/L	1.0	104	83.5	118	6.56	10	
Xylenes, Total	59.42	µg/L	2.0	99.0	83.4	122	7.57	13	
1,2,4-Trimethylbenzene	21.06	µg/L	1.0	105	83.5	115	9.37	21	
1,3,5-Trimethylbenzene	20.20	µg/L	1.0	101	85.2	113	7.60	10	
		411-4							
Method: EPA Method 8260: V Sample ID: 5ml rb	olatiles Sho	n List MBLK			Batch	ID: R33844	Analysis Date	: 5/26	/2009 8:43:52 AM
Mothul tort butul other (MTRE)	ND	Hall	10						
weary ten-buty earer (WHDE)		hAir	1.0						
Qualifiers:						 ,			
E Estimated value			Н	Holding	times for prep	aration or analys	sis exceeded		
J Analyte detected below quan	titation limits		ND	Not Det	ected at the Re	porting Limit			Page 1
R RPD outside accepted recover	ry limits		S	Spike re	ecovery outside	accepted recove	ery limits		0

Hall Environmental Analysis Laboratory, Inc.

	Sample	Rece	eipt Ch	ecklist				-
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Work Order Number 0905336	7			Received	by: ARS			
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Checklist completed by:	<i>У</i>) Date	101			WROLIS	
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Matrix:	Carrier name:	FedE	X					
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Custody seals intact on shipping container/coole	r?	Yes	\checkmark	No 🗌	Not Present		Not Shipped	
Custody seals intact on sample bottles?		Yes		No 🗌	N/A	\checkmark		
Chain of custody present?		Yes		No 🗌				
Chain of custody signed when relinquished and	received?	Yes		No 🗌				
Chain of custody agrees with sample labels?		Yes		No 🗌				
Samples in proper container/bottle?		Yes		No 🗔				
Sample containers intact?		Yes		No 🗌				
Sufficient sample volume for indicated test?		Yes		No 🗔				
All samples received within holding time?		Yes		No 🗌			Number o	f preserved
Water - VOA vials have zero headspace?	No VOA vials sub	mitted		Yes 🗹	No []]	pH:	
Water - Preservation labels on bottle and cap m	atch?	Yes		No 🗌	N/A	3		
Water - pH acceptable upon receipt?		Yes		No 🗖	N/A 🗹]	<2 >12 un below.	less noted
Container/Temp Blank temperature?		13.	.2°	<6* C Accep	otable		50/011	
COMMENTS:				If given suffic	ient time to cool.			
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Contacted by:	Regarding:							
Comments:	4							
								
Corrective Action								

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COVER LETTER

Wednesday, June 03, 2009

Gaurav Rajen Western Refining Southwest, Gallup Rt. 3 Box 7 Gallup, NM 87301

TEL: (505) 722-3833 FAX (505) 722-0210

RE: 2009 2nd QTR OW-Wells

Order No.: 0905242

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/14/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001 Texas Lab# T104704424-08-TX



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107

CLIENT:	uthwest, Gallup		Clier	t Sample ID:	OW-14							
Lab Order:	0905242			Collection Date: 5/12/2009 11:12:00 A								
Project:	2009 2nd QTR OW-	Wells		D	ate Received:	5/14/2009						
Lab ID:	0905242-01				Matrix:	AQUEOUS	:.					
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed					
EPA METHOD	8021B: VOLATILES						Analyst: NSB					
Benzene		110	10		µg/L	10	5/22/2009 4:38:11 PM					
Toluene		2.9	1.0		µg/L	1	5/21/2009 11:37:59 PM					
Ethylbenzene		4.9	1.0		µg/L	1	5/21/2009 11:37:59 PM					
Xylenes, Total		ND	2.0		µg/L	1	5/21/2009 11:37:59 PM					
1,2,4-Trimethyl	benzene	1.6	1.0		µg/L	1	5/21/2009 11:37:59 PM					
1,3,5-Trimethyl	benzene	ND	1.0		µg/L	1	5/21/2009 11:37:59 PM					
Surr: 4-Brom	ofluorobenzene	97.3	65.9-130		%REC	1	5/21/2009 11:37:59 PM					
EPA METHOD	8260: VOLATILES SHC						Analyst: HL					
Methyl tert-buty	ether (MTBE)	970	50		µg/L	50	5/26/2009 12:08:21 PM					
Surr: 4-Brom	ofluorobenzene	117	80.4-119		%REC	50	5/26/2009 12:08:21 PM					

Hall Environmental Analysis Laboratory, Inc.

Qualifiers:

* Value exceeds Maximum Contaminant Level

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

Date: 03-Jun-09

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

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QA/QC SUMMARY REPORT

Client: W Project: 20	Vestern Refining South 109 2nd QTR OW-We	west, Gallup ells					W	ork Orde	er: 0905242
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimi	t Qual
Method: EPA Metho	d 8021B: Volatiles					<u> </u>			
Sample ID: 5ML RB		MBLK			Batch	ID: R33777	Analysis Da	te: 5/2	1/2009 9:22:24 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	, ND	µg/L	2 .0						
1,2,4-Trimethylbenzene) ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 5ML RB		MBLK			Batch	ID: R33820	Analysis Da	te: 5/22	/2009 10:02:47 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
1,2,4-Trimethylbenzene	B ND	µg/L	1.0						
1,3,5-Trimethylbenzene	e ND	µg/L	1.0						
Sample ID: 100NG B	TEX LCS	LCS			Batch	ID: R33777	Analysis Da	ite: 5/2	2/2009 6:13:09 AM
Benzene	21.86	µg/L	1.0	109	85.9	113			
Toluene	22.53	μg/L	1.0	113	86.4	113			
Ethvibenzene	21.99	µg/L	. 1.0	1 10	83.5	118			
Xylenes, Total	62.02	µg/L	2.0	103	83.4	122			
1,2,4-Trimethylbenzene	21.04	µg/L	1.0	104	83.5	115			
1,3,5-Trimethylbenzene	20.22	μg/L	1.0	100	85.2	113			
Sample ID: 100NG B	TEX LCS	LCS			Batch	ID: R33820	Analysis Da	ite: 5/2	2/2009 6:39:59 PM
Benzene	21.70	µg/L	1.0	108	85.9	113			
Toluene	22.22	µg/L	1.0	111	86.4	113			
Ethvibenzene	22.31	µg/L	1.0	112	83.5	118			
Xvlenes, Total	64.10	µg/L	2.0	107	83.4	122			
1.2.4-Trimethvibenzene	23.13	μg/L	1.0	116	83.5	115			S
1.3.5-Trimethylbenzene	e 21.79	µg/L	1.0	109	85.2	113			
Sample ID: 100NG B	TEX LCSD	LCSD			Batch	ID: R33820	Analysis Da	ate: 5/2	2/2009 7:10:32 PM
Benzene	20.62	uo/L	1.0	103	85.9	113	5.07	27	
Toluene	20.79	µa/L	1.0	104	86.4	113	6.67	19	
Fthvibenzene	20.90	ua/L	1.0	104	83.5	118	6.56	10	
Xvienes, Total	59.42	µg/L	2.0	99.0	83.4	122	7.57	13	
1.2.4-Trimethylbenzen	e 21.06	µg/L	1.0	105	83.5	115	9.37	21	
1,3,5-Trimethylbenzene	e 20.20	μ g/L	1.0	101	85.2	113	7.60	10	
Method: EPA Meth	od 8260: Volatiles Shor	t List							
Sample ID: 5ml rb		MBLK			Batch	ID: R33844	Analysis Da	ate: 5/2	:6/2009 8:43:52 AM
Methyl tert-butyl ether ((MTBE) ND	µg/L	1.0						

Qualifiers:

E Estimated value

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Nork Order Number 0905242 Received by: ARS Checklist completed by: Signature 5/1/4/0 S Watrix: Carrier name: UPS Shipping container/cooler in good condition? Yes No Not Present Custody seals intact on shipping container/cooler? Yes No Not Present Not Shipped Custody seals intact on sample bottles? Yes No Not Present Not Shipped Image: Carrier name: Custody seals intact on sample bottles? Yes No Not Present Not Shipped Image: Carrier name: Custody seals intact on sample bottles? Yes No Not Present Not Shipped Image: Carrier name: Custody seals intact on sample bottles? Yes No N/A Image: Carrier name: Not Carrier name:	Client Name WESTERN REFINING GALLU	1000	51pt 01.	Date Received	l:		5/14/2009
Matrix: Carrier name: UPS Shipping container/cooler in good condition? Yes No Custody seals intact on shipping container/cooler? Yes No Custody seals intact on sample bottles? Yes No Custody seals intact on sample bottles? Yes No Custody seals intact on sample bottles? Yes No Chain of custody present? Yes No Chain of custody signed when relinquished and received? Yes No Chain of custody agrees with sample labels? Yes No Chain of custody agrees with sample labels? Yes No Samples in proper container/bottle? Yes No Sufficient sample volume for indicated test? Yes No All samples received within holding time? Yes No Water - VOA vials have zero headspace? No VOA vials submitted Yes Water - pH acceptable upon receipt? Yes No Container/Temp Blank temperature? 2.0° COMMENTS: Container/Item time to cool.	Vork Order Number 0905242		5/14 Date	Received by: Sample ID la	ARS bels checked	d by:	Initials
Shipping container/cooler in good condition? Yes Image: No image: Not Present i	Matrix: Carrier name:	<u>UPS</u>	<u>i</u>				
Custody seals intact on shipping container/cooler? Yes No Not Present Not Shipped Custody seals intact on sample bottles? Yes No N/A ✓ Chain of custody present? Yes No N/A ✓ Chain of custody signed when relinquished and received? Yes ✓ No Chain of custody agrees with sample labels? Yes ✓ No Chain of custody agrees with sample labels? Yes ✓ No Samples in proper container/bottle? Yes ✓ No Sufficient sample volume for indicated test? Yes ✓ No Number of preserve bottles checked for pH: Water - VOA vials have zero headspace? No VOA vials submitted Yes ✓ No pH: Water - Preservation labels on bottle and cap match? Yes No N/A > > > > > > > > > > > > > > > > <td< td=""><td>Shipping container/cooler in good condition?</td><td>Yes</td><td></td><td>No 🗔</td><td>Not Presen</td><td>nt 🗆</td><td></td></td<>	Shipping container/cooler in good condition?	Yes		No 🗔	Not Presen	nt 🗆	
Custody seals intact on sample bottles? Yes No N/A Image: Container C	Custody seals intact on shipping container/cooler?	Yes	\checkmark	No 🗌	Not Presen	nt 🗆	Not Shipped
Chain of custody present? Yes No Chain of custody signed when relinquished and received? Yes No Chain of custody agrees with sample labels? Yes No Chain of custody agrees with sample labels? Yes No Samples in proper container/bottle? Yes No Sample containers intact? Yes No Sufficient sample volume for indicated test? Yes No All samples received within holding time? Yes No Water - VOA vials have zero headspace? No VOA vials submitted Yes Water - Preservation labels on bottle and cap match? Yes No Water - pH acceptable upon receipt? Yes No Container/Temp Blank temperature? 2.0° <6° C Acceptable If given sufficient time to cool.	Custody seals intact on sample bottles?	Yes		No 🗔	N/A	\checkmark	
Chain of custody signed when relinquished and received? Yes No Chain of custody agrees with sample labels? Yes No Samples in proper container/bottle? Yes No Sample containers intact? Yes No Sufficient sample volume for indicated test? Yes No Sufficient samples received within holding time? Yes No Water - VOA vials have zero headspace? No VOA vials submitted Yes No Water - Preservation labels on bottle and cap match? Yes No N/A ✓ Water - pH acceptable upon receipt? Yes No N/A ✓ <2 >12 unless note below. Container/Temp Blank temperature? 2.0° <6° C Acceptable If given sufficient time to cool.	Chain of custody present?	Yes		No 🗌			
Chain of custody agrees with sample labels? Yes ✓ No Samples in proper container/bottle? Yes ✓ No Sample containers intact? Yes ✓ No Sufficient sample volume for indicated test? Yes ✓ No Sufficient sample volume for indicated test? Yes ✓ No All samples received within holding time? Yes ✓ No Water - VOA vials have zero headspace? No VOA vials submitted Yes ✓ No pH: Water - Preservation labels on bottle and cap match? Yes No N/A ✓	Chain of custody signed when relinquished and received?	Yes		No 🗌	-		
Samples in proper container/bottle? Yes ✓ No Sample containers intact? Yes ✓ No Sufficient sample volume for indicated test? Yes ✓ No All samples received within holding time? Yes ✓ No ✓ Water - VOA vials have zero headspace? No VOA vials submitted Yes ✓ No pH: Water - Preservation labels on bottle and cap match? Yes ✓ No N/A ✓	Chain of custody agrees with sample labels?	Yes	\checkmark	No 🗔			
Sample containers intact? Yes No	Samples in proper container/bottle?	Yes		No 🗌			
Sufficient sample volume for indicated test? Yes No Number of preservents of pr	Sample containers intact?	Yes		No 🗔			
All samples received within holding time? Yes Yes No Number of preservery bottles checked for pH: Water - VOA vials have zero headspace? No VOA vials submitted Yes Yes No pH: Water - Preservation labels on bottle and cap match? Yes No N/A	Sufficient sample volume for indicated test?	Yes		No 🗌			
Water - VOA vials have zero headspace? No VOA vials submitted Yes No pH: Water - Preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes No N/A Image: Comparison of the preservation labels on bottle and cap match? Yes Yes No N/A Image: Comparison of the preservation labels on bottle and cap matches Yes Yes Yes Yes	All samples received within holding time?	Yes		No 🗌			Number of preserve bottles checked for
Water - Preservation labels on bottle and cap match? Yes No N/A Image: Second cap match? Water - pH acceptable upon receipt? Yes No N/A Image: Second cap match? Yes No N/A Image: Second cap match? Image: Second cap match? Yes No N/A Image: Second cap match? Yes Second cap match? Yes No N/A Image: Second cap match? Yes Second cap match? Yes No N/A Image: Second cap match? Yes Second cap match?	Water - VOA vials have zero headspace? No VOA vials sub	nitted		Yes 🗹	No [pH:
Water - pH acceptable upon receipt? Yes No N/A <2 >12 unless note below. Container/Temp Blank temperature? 2.0° <6° C Acceptable	Water - Preservation labels on bottle and cap match?	Yes		No 🗔	N/A b		
Container/Temp Blank temperature? 2.0° <6° C Acceptable	Water - pH acceptable upon receipt?	Yes		No 🗌	N/A U		<2 >12 unless noted below.
COMMENTS:	Container/Temp Blank temperature?	2	.0°	<6° C Acceptab	le t lime te coo	ı	
	COMMENTS:			n given sumden			

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Client contacted	Date contacted:	Person contacted
Contacted by:	Regarding:	
Comments:		
Corrective Action		
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(Balli	is N	M 81301	Project #:						Tel. 505-345-3975 Fax 505-345-4107												
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email	or Fax#:	505	1220210	Project Mana	ger:			ß	ly)	el)					(4)							
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⊂ Oth	er			Sampler:	John	son		MB	PH (Ű Ű	=	Ê			102,1	082						
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Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type			BTEX + MT	BTEX + MT	TPH Metho	TPH (Metho	EDB (Metho	3310 (PNA	3CRA 8 Me	Anions (F,C	3081 Pestic	3260B (VO/	3270 (Semi-				vir Bubbles
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If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.