GW - 361

ANNUAL REPORT

12/06/2007



December 6, 2007

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GW361

Mr. Glenn Von Gonten Senior Hydrologist New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Re: TEPPCO Hobbs Station, Hobbs, New Mexico

Dear Mr. Von Gonten:

TEPPCO Crude Oil, L.P. (TEPPCO) is submitting the enclosed annual groundwater monitoring report for the TEPPCO Hobbs Station. Current site conditions at Hobbs Station are documented in the October 11, 2005 report entitled: Supplemental Environmental Site Investigation Report. This report describes the soil and groundwater monitoring results obtained during investigation of the station during 2007 following acquisition of the station from ARCO. TEPPCO is currently monitoring four monitor wells at the station. Groundwater conditions at these locations appear to be stable and constituents are below either laboratory reporting levels or New Mexico Water Quality Commission Ground Water Standards. Light non-aqueous phase liquids were not observed in any of the monitor wells.

Please note that a crude oil recovery system is currently in operation at the station. This recovery system is operated by Navajo Pipeline (Navajo) to recover crude oil occurring on July 22, 2004 at Tank 5201 which is leased by TEPPCO to Navajo. Navajo reported this release to the New Mexico Oil Conservation Division (OCD) on October 10, 2004.

TEPPCO recommends continued groundwater monitoring at the station during 2008 and will evaluate requesting closure for the site if groundwater conditions remain stable. Please do not hesitate to contact me at (713) 803-2286 if you have any questions.

Sincerely,

David R. Smith, P.G.

Sr. Environmental Scientist

Attachment

xc: w/attachment - Dickie Townley; Safety/Environmental Supervisor; Navajo Pipeline; 311 West Quay; Artesia, NM 88210

w/o Attachment - Chris Mitchell - Southwest Geoscience, Dallas, TX



TEPPCO Partners, L.P. Texas Eastern Products Pipeline Company. LLC, General Partner P.O. Box 2521 Houston, TX 77252-2521 Office: 713/880-6500 Fax: 713/880-6660 ANNUAL GROUNDWATER MONITORING REPORT TEPPCO Hobbs Station Off County Road 61 Hobbs, Lea County, New Mexico

> SWG Project No. 0105013 November 15, 2007

> > Prepared for:

TEPPCO Crude Pipeline, LP c/o EPCO, Inc. 2727 North Loop West Houston, TX 77008 Attention: Mr. David Smith, P.G.

PREPARED BY:

Lethaus

Russell D. Howard Project Scientist

......

B. Chris Mitchell, P.G. Senior Technical Review



2351 W. Northwest Hwy., Suite 3321 Dallas, Texas 75220 Ph: (214) 350-5469 Fax: (214) 350-2914



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ANNUAL GROUNDWATER MONITORING REPORT TEPPCO Hobbs Station Off County Road 61 Hobbs, Lea County, New Mexico

1.0 INTRODUCTION

1.1 Site Description & History

Southwest Geoscience (SWG) has conducted two (2) semi-annual groundwater monitoring events at the TEPPCO Crude Pipeline, L.P. (TEPPCO) Hobbs Station, referred to hereinafter as the "site" located at off County Road 61, Hobbs, Lea County, New Mexico. The site consists of approximately 35 acres developed as a crude oil storage facility associated with crude oil pipeline operations located to the south of Hobbs, New Mexico.

A topographic map is included as Figure 1, a site vicinity map is included as Figure 2, and a site plan is included as Figure 3 of Appendix A.

During the completion of due diligence activities during the acquisition of select ARCO assets by TEPPCO, soil borings MW-1, MW-2, MW-4 and B-5 were advanced at the station by ALPHA TESTING, INC. (ALPHA) in March, 2003. Soil borings MW-1, MW-2 and MW-4 were subsequently converted to permanent groundwater monitoring wells. The objective of the due diligence activities was to evaluate the presence of petroleum hydrocarbons in the on-site soil and groundwater as a result of the operations historically associated with the site.

In addition, an existing monitoring well previously installed under the direction of ARCO, labeled MW-3, was identified on the north-northeast portion of the site during the completion of the due diligence activities. No other existing monitoring wells were observed during the 2003 investigation activities.

A groundwater monitoring event was subsequently conducted by ALPHA in May, 2004 to further evaluate the magnitude of petroleum hydrocarbon constituents in the on-site groundwater. During the completion of sampling activities, on-site personnel indicated the location of two (2) additional groundwater monitoring wells previously installed under the direction of ARCO, labeled MW-1 and MW-2. ALPHA sampled monitoring wells MW-1(ARCO), MW-2(ARCO), MW-1, MW-2 and MW-4. However, the groundwater table appeared to have dropped below the total depth of monitoring well MW-3(ARCO); therefore, no groundwater sample was collected.

Due to the absence of chemicals of concern (COCs) above the laboratory method detection limits (MDLs) in groundwater samples collected from MW-1(ARCO) and MW-2(ARCO), these monitoring wells were removed from the quarterly groundwater monitoring sample program.

Due to the elevation of the groundwater table below the total depth of monitoring well MW-3(ARCO). monitoring well MW-3R was installed adjacent to monitoring well MW-3(ARCO) on July 25, 2005 by SWG.



Analytical tables which include the historical groundwater analytical data are provided in Appendix B.

In addition, according to the New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division *Release Notification and Correction Action Form* (Form C-141) prepared by Navajo Pipeline (Navajo) and dated October 11, 2004, an unknown volume of crude oil was released on July 22, 2004 as a result of an external corrosion hole in the pipeline which extends from the Navajo truck unloading rack to storage tank no. 5201, which is owned by TEPPCO and leased to Navajo.

Subsequent to the discovery of the leak, the pipeline was isolated, depressurized and clamped to repair the leak. An area approximately 4 feet wide, 20 feet long and 18 feet deep was subsequently excavated, and the excavated soil were disposed off-site.

Based on SWG's review of the Navajo file information, seven (7) soil borings were advanced at the Site in the vicinity of the Navajo pipeline release. Three (3) of the soil borings were subsequently converted to monitoring wells. The soil and groundwater samples collected on behalf of Navajo from the borings/monitoring wells were analyzed for total petroleum hydrocarbons (TPH) Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) using EPA method SW-846 #8015, benzene, toluene, ethylbenzene and xylenes (BTEX) using EPA SW-846 #8021, chlorides utilizing EPA method 300 and/or total dissolved solids (TDS) utilizing EPA method 160.1.

Based on SWG's observations in the field, Navajo is currently utilizing a pneumatic recovery system to recover the phase-separated hydrocarbons (PSH) from the initial groundwater-bearing unit.

1.2 Scope of Work

The objective of the semi-annual groundwater monitoring events was to evaluate the current concentrations of COCs in the on-site groundwater in the vicinity of monitoring wells MW-1, MW-2, MW-3R and MW-4 over time.

1.3 Standard of Care

SWG's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. SWG makes no warranties, express or implied, as to the services performed hereunder. Additionally, SWG does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services was performed in accordance with the scope of work agreed with the client, as detailed in our proposal.

1.4 Additional Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and SWG cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this Groundwater



Monitoring Event. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. SWG's findings, and recommendations are based solely upon data available to SWG at the time of these services.

1.5 Reliance

This report has been prepared for the exclusive use of TEPPCO, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of TEPPCO and SWG. Any unauthorized distribution or reuse is at the client's sole risk.

2.0 SAMPLING PROGRAM

The groundwater sampling events were conducted on January 31, 2007 and August 1, 2007 by B. Chris Mitchell and Russell D. Howard, SWG environmental professionals. SWG's groundwater sampling program consisted of the following:

Monitoring Wells MW-1, MW-2, MW-3R and MW-4

• Collection of one groundwater sample from each monitoring well utilizing low-flow sampling techniques.

Prior to sample collection, SWG gauged the depth to fluids in each monitoring well. Light nonaqueous phase liquid (LNAPL) were not observed in monitoring wells MW-1, MW-2, MW-3R or MW-4 during sampling activities.

Groundwater samples were collected utilizing low-flow minimal drawdown techniques. Samples were collected utilizing dedicated sampling materials subsequent to the stabilization of Dissolved Oxygen, Conductivity, pH and Temperature.

Low-flow refers to the velocity with which water enters the peristaltic pump intake and that is imparted to the formation pore water in the immediate vicinity of the well screen. Water level drawdown provides the best indication of the stress imparted by a given flow-rate for a given hydrological situation. The objective is to pump in a manner that minimizes stress (drawdown) to the system to the extent practical taking into account established site sampling objectives. Flow rates on the order of 0.1-0.5 L/min were maintained during the sampling activities using dedicated sampling equipment.

The utilization of low-flow minimal drawdown techniques enables the isolation of the screened interval groundwater from the overlying stagnant casing water. The pump intake is placed within the screened interval such that the groundwater pumped is drawn in directly from the formation with little mixing of casing water or disturbance to the sampling zone.

Due to the absence of COCs above the laboratory method detection limits (MDLs) in groundwater samples historically collected from MW-1(ARCO) and MW-2(ARCO), these monitoring wells were removed from the quarterly groundwater monitoring sample program.

Due to the elevation of the groundwater table below the total depth of monitoring well MW-3(ARCO), monitoring well MW-3R was removed from the quarterly groundwater monitoring sample program.



Since the monitoring wells installed at the site on behalf of Navajo are strictly related to the Navajo release of crude oil and associated on-going corrective action, the Navajo monitoring wells were not included in the quarterly groundwater monitoring sample program.

Groundwater samples were collected in laboratory prepared glassware, sealed with custody tape and placed on ice in a cooler secured with a custody seal. The sample coolers and completed chain-of-custody forms were relinquished to Severn-Trent Laboratories (STL) in Corpus Christi, Texas.

3.0 LABORATORY ANALYTICAL PROGRAM AND RESULTS

The groundwater samples collected from the monitoring wells were analyzed for total petroleum hydrocarbons (TPH) Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) using EPA method SW-846 #8015, and benzene, toluene, ethylbenzene and xylenes (BTEX) using EPA SW-846 #8021. In addition, the groundwater sample during each sampling event which exhibited the highest TPH concentrations was resubmitted for polynuclear aromatic hydrocarbons (PAHs) using EPA method SW-846 #8270.

Laboratory results are summarized in Table 1, Appendix B. The executed chain-of-custody documentation and laboratory data sheets are provided in Appendix C.

4.0 GROUNDWATER FLOW DIRECTION

The monitoring wells were surveyed for top-of-casing (TOC) elevations relative to an arbitrary on-site benchmark of 100.0 feet. Groundwater measurements collected during each gauging event are presented with TOC elevations in Table 3, Appendix B.

Prior to sample collection, SWG gauged the depth to fluids in each monitoring well. During gauging activities, phase-separated hydrocarbons (PSH) was not observed in monitoring well MW-1 through MW-4.

Based on the groundwater elevations associated with each of the monitoring wells installed on behalf of TEPPCO, groundwater generally flows to the east-southeast at an average hydraulic gradient of 0.00121 ft./ft.

5.0 FINDINGS

The findings of this investigation are presented as follows:

- The laboratory analyses of the groundwater samples collected from monitoring wells MW-1. MW-2 and MW-4 did not indicate TPH concentrations above the sample reporting limits (SRLs).
- The laboratory analyses of the groundwater samples collected from monitoring well MW-3R did not indicate PAH concentrations above the SRLs.



- The laboratory analyses of the groundwater samples collected from monitoring well MW-1, did not indicate benzene concentrations above the SRLs.
- The laboratory analyses of the groundwater samples collected from monitoring wells MW-1, MW-2 and MW-3R did not indicate toluene concentrations above the SRLs.
- The laboratory analyses of the groundwater samples collected from monitoring wells MW-1, MW-2, MW-3R and MW-4 did not indicate xylenes concentrations above the SRLs.
- The laboratory analyses of the groundwater samples collected from monitoring wells MW-1, MW-2, MW-3R, and MW-4 did exhibit TPH DRO concentrations above the SRL.
- The laboratory analyses of the groundwater samples collected from monitoring well MW-3R exhibited TPH GRO concentrations above the SRL.
- The laboratory analyses of the groundwater samples collected from monitoring wells MW-2, MW-3R and MW-4 did not exhibit benzene, toluene and/or ethylbenzene concentrations above the SQLs.
- Prior to sample collection, SWG gauged the depth to fluids in each monitoring well. LNAPL were not observed in monitoring wells MW-1, MW-2, MW-3R or MW-4 during sampling activities.
- Based on SWG's evaluation of the historic trends in groundwater analytical data, the COC concentrations identified in the groundwater samples collected from monitoring wells MW-1, MW-2, MW-3R and MW-4 appear to be stable.

6.0 RECOMMENDATIONS

Based on the geochemistry and subsurface conditions identified at the site, the COC concentrations which have been identified in the on-site groundwater will likely naturally attenuate over time.

SWG recommends TEPPCO continue to monitor the existing network of groundwater monitoring wells on a semiannual basis in 2008. Provided the results of the proposed semiannual groundwater monitoring are consistent with the historic data, SWG recommends TEPPCO request regulatory closure from the New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division for the historic petroleum hydrocarbon impact to soil and groundwater.







SWG Project No. 0105013

2002 Aerial Photograph Source: USGS











	GROUN	T/ NDWATER	ABLE I	ICAL RESULTS	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Xylenes	TPH	TPH
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	GRO	DRO
	(Ourollity)					ung c	(UII8/L)
Commission (NMWQ Water Standa	C) Ground rds	10	750	750	620	NE	NE
Contraction of the second	Mor	nitoring We	llsInstalle	ed by ARCO			S.
MW-1	5.11.04	<1.0	0.1>	0.1>	<3.0	NA	0.124
MW-2	5.11.04	<1.0	<1.0	<1.0	<3.0	NA	<0.10
MW-3	3.20.03	63.7	2.49	197	6.23	1.95	18
	5.11.04	Insu	ufficent Wa	ater Volume for	Sample (Collectio	n
	Moni	toring Well	s Installed	by TEPPCO		2 5	
MW-1	3.20.03	<1.0	<1.0	<1.0	<3.0	<0.05	2.44
	5.11.04	<1.0	<1.0	<1.0	<3.0	< 0.05	1.31
	2.03.06	<2.0	<2.0	<2.0	<6.0	<0.05	<0.5
	8.19.06	<2.0	<2.0	<2.0	<6.0	<0.05	<0.5
	1.31.07	<2.0	<2.0	<2.0	<6.0	<0.15	<0.5
	8.01.07	<1.0	<1.0	<1.0	<3.0	<0.05	0.262
MW-2	3.20.03	<1.0	<1.0	<1.0	<3.0	<0.05	0.493
	5.11.04	<1.0	<1.0	<1.0	<3.0	<0.05	<0.10
	2.03.06	<2.0	<2.0	<2.0	<6.0	<0.05	< 0.5
	8.19.06	2.0	<2.0	<2.0	<6.0	<0.05	<0.5
	1.31.07	<2.0	<2.0	<2.0	<6.0	<0.15	<0.5
	8.01.07	<1.0	<1.0	<1.0	<3.0	<0.05	0.393
MW-3R	7.25.05	<2.0	<2.0	<2.0	<6.0	0.074	2.4
	2.03.06	<2.0	<2.0	4.0	<6.0	0.175	1.94
	8.19.06	2.0	<2.0	<2.0	<6.0	0.323	1.97
	1.31.07	<2.0	<2.0	3.1	<6.0	0.209	2.5
	8.01.07	<1.0	<1.0	<1.0	<3.0	0.101	4.06
MW-4	3.20.03	<1.0	<1.0	<1.0	<3.0	<0.05	0.829
	5.11.04	<1.0	<1.0	<1.0	<3.0	<0.05	<0.10
	2.03.06	<2.0	<2.0	<2.0	<6.0	<0.05	<0.5
	8.19.06	4.0	5.0	<2.0	<6.0	<0.05	<0.5
	1.31.07	<2.0	<2.0	<2.0	<6.0	<0.15	<0.5
	8.01.07	<10	<1.0	<1.0	<3.0	<0.05	0.129

NE = Not Established

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			TABLE 2		
		GROU POLYNI	NDWATER ANALYTICAL	RESULTS	there is a second to a second to a
Sample	Date	Constituent	Observed Concentration	New Mexico Energy; Minerals e Natural Resources Department, Oil	Commission Ground Water
			(#8/1_)	Conservation Division:	Standards
			Factor and the second sec	Remodelion Action Love	
MW-3	3.20.03	Acenaphthene	<2.5	NE	
		Acenaphthylene	4.85	NE	
		Anthracene	15	NE	
		Benzo(a)anthracenej Benzo(a)pyrene	0.29	NE NE	0.7
	1	Benzolb)fluoranthene	<0.01	NE	U. /
	'	Benzo(g,h,i)perylene	0.545	NE	· •
	'	Benzo(k)fluoranthene	1.32	NE	
	'	Chrysene	1.7	NE	-
		Dibenzo(a,h)anthracene	0.623		<u> </u>
	/	Fluorene	9.18	NE NE	
	'	indeno(1,2,3-cd)pyrene	2.1	NE	
		Naphthalene	29	NE	30
	1 /	Phenanthrene	7.67	NE	
	<u> </u>	Pyrene	0.506	NE NE	
MW-3R	2.03.06	Acenaphthene	<10	NE	
	ļ ,	Acenaphithylene	<10		l
	(Renzo(a)anthracena	<10		· · · · · · · · · · · · · · · · · · ·
	'	Benzo(a)pyrene	<10	NE	0.7
	'	Benzo(b)fluoranthene	<10	NE	
	1	Benzo(g,h,i)perylene	<10	NE	
	/	Benzo(k)fluoranthene	<10		·
	,	Chrysene Dihenzo(a b)aptbracene	<10		
	'	Fluoranthene	<10	NE	
	'	Fluorene	<10	NE	
	1	Indeno(1,2,3-cd)pyrene	<10	NE	-
	'	Naphthalene	<10	NE	30
	ļ '	Phenanthrene	<10		
MW-3R		Acenariothene	<10		
19199 -013	0.18.00	Acenaphthylene	<10	NE NE	
	,	Anthracene	<10	NË	-
	1 /	Benzo(a)anthracene	<10	NE	<u> </u>
	/	Benzo(a)pyrene	<10	NE	0.7
	/	Benzo(b)fluoranthene	<10	NE	
	ļ /	Benzo(g,n,i)perviene	<10		
	1 1	Chrysene	<10	NE NE	h
	1 1	Dibenzo(a,h)anthracene	<10	NE	
	1 ,	Fluoranthene	<10	NE	
	/	Fluorene	<10	NE	· · · · · · · · · · · · · · · · · · ·
	1	Indeno(1,2,3-cd)pyrene	<10		
	1 '	Phenanthrene	<10		30
	/	Pyrene	<10	NE	· · · · · ·
MW-3R	1.31.07	Acenaphthene	<10	NE	-
	'	Acenaphthylene	<10	NE	-
	۱ <u>ا</u>	Anthracene	<10	NE	
	1 7	Benzo(a)anthracene	<10		<u>`</u>
	/	Benzo(a)pyrene Renzo(bifluoranthene	<10		0.7
	/	Benzo(g.h.ipervlene	<10	NE NE	
	ļ /	Benzo(k)fluoranthene	<10	NE NE	
	/	Chrysene	<10	NE	
	'	Dibenzo(a,h)anthracene	<10	NE	
,	1	Fluoranthene	<10	NE	-
i '	'	Fluorene	<10	NE	-
 '	1 !	Indeno(1,2,3-cd)pyrene Naphtbalane	<10		
, I I I I I I I I I I I I I I I I I I I	1	Phenanthrene	<10	NE	
1 /	1 1	Pirena		NE	

NE = Not Established

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Southwest

			FLUI	TABLE 3 D LEVEL GAUGING D	ATA		۲۰۰۰ میں میں میں میں میں اور
Well ID	Measurement Date	Ground Surface Elevation (feet)	Top-of-Casing Elevation (feet)	Depth to PSH (feet)	Depth to Water (feet)	PSH Thickness (feet)	Corrected Groundwater Elevation
1. 1. 2025			C. TE	PPCO Monitoring Wel	ls		
MW-1	2.3.06	93.5	97.08	None Detected	Not Recorded	0	Not Determined
	8.19.06		97.08	None Detected	44.19	Q	52.89
	1.31.07		97.08	None Detected	44.31	0	52.77
	8.01.07		97.08	None Detected	44.64	0	52.44
MW-2	2.3.06	95.58	99.36	None Detected	44.89	0	54.47
	8.19.06		99.36	None Detected	45.24	0	54.12
	1.31.07		99.36	None Detected	44.89	O	54.47
	8.01.07		99.36	None Detected	45.65	0	53.71
MW 3R	2.3.06	95.26	98.66	None Detected	45.31	0	53.35
	8.19.06		98.66	None Detected	45.78	0	52.88
	1.31.07		98.66	None Detected	45.82	0	52.84
	8.01.07		98.66	None Detected	46.07	0	52.59
MW-4	2.3.06	93.63	97.15	None Detected	44. J	0	53.05
	8.19.06		97.15	None Detected	44,52	0	52.63
	1.31.07		97.15	None Detected	44.55	0	52.60
	8.01.07		97.15	None Detected	44.91	0	52.24

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APPENDIX C

Laboratory Data Reports & Chain-of-Custody Documentation

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Environmental Laboratories Bethany Tech Center • Suite 190 400 W. Bethany Rd. • Allen, Texas 75013 State Certifications Arkansas: 88-0647 Oklahoma: 8727

Report of Sample Analysis

Southwest Geoscience	Page: Page 2 of 16
2351 W. Northwest Highway, Suite 3321	Project: Hobbs Station
Dallas, TX 75220	Project #: 0105013
ATTN: Chris Mitchell	Print Date/Time: 08/10/07 15:29

The analytical data and results contained in this report, as well as their supporting data, conform with Texas Risk Reduction Program (TRRP), 30 TAC, Section 350, requirements and are of sufficient and documented quality to meet both TRRP objectives, TCEQ regulatory guidance No. RG-366/TRRP-13 and the project-based objective of achieving the lowest method detection limit (i.e., the TRRP Critical PCL where reasonably achievable or, if not reasonably achievable, the MQL). All information concerning analytical parameters, methods and protocols that might bear upon or otherwise affect the accuracy of the analytical data in this report have been provided or otherwise disclosed herein. The data were obtained using applicable and appropriate EPA SW-846 or Texas Commission on Environmental Quality approved analytical protocols, methodologies and quality assurance/quality control standards. **ERMI Environmental Laboratories** certifies that its quality control program is substantially and materially consistent with the International Organization for Standardization "Guide 25: General Requirements the Competence of Calibration and Testing Laboratories (ISO 25 3rd Edition, 1990)," as amended or the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. The entire analytical data package for this report, including the supporting quality control data, will be retained and maintained for at least five (5) years (or such longer period of time as may be required by TRRP) from the report date at the offices of **ERMI Environmental Laboratories, 400 W. Bethany, Suite 190, Allen, Texas 75013.**

I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Thank you for the opportunity to serve your environmental chemistry analysis needs. If you have any questions or concerns regarding this report please contact our Customer Service Department at the phone number below.

Respectfully submitted,

aball K. Birn

Kendall K. Brown President



Bethany Tech Center • Suite 190 400 W. Bethany Rd. • Allen, Texas 75013

State Certifications Arkansas: 88-0647 Oklahoma: 8727

Report of Sample Analysis

Southwest Geoscience	Page: Page 3 of 16
2351 W. Northwest Highway, Suite 3321	Project: Hobbs Station
Dallas, TX 75220	Project #: 0105013
ATTN: Chris Mitchell	Print Date/Time: 08/10/07 15:29

Laboratory ID #: 0708073-01 Sample Description MW 4	<u>Sample Type</u> Grab		<u>Matr</u> Aque <u>Sam</u> 08/0	i <u>x</u> eous ple Date/] 1/07 0840	<u> Time</u>		Sample C Russell He	Collected By oward	Cus	tomer
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anist	Flag
Total Petroleum Hydro	carbons - DRO					-			4qa	
Separatory Funnel Liquid-Liquid Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3510C	7H07006	08/07/07 0930	MR	
TPH Diesel	0.129	0.100	0.100	mg/l	1.00	EPA 8015B mod	7H07006	08/09/07 1649	PMS	
Surrogate: a-Pinene		52 %	23-104			EPA 8015B mod	7H07006	08/09/07 1649	PMS	
Surrogate: Triacontane		91 %	61-131			EPA 8015B mod	7H07006	08/09/07 1649	PMS	
Total Petroleum Hydro	carbons - GRO									
TPH Gasoline	ND	0.0500	0.0500	mg/l	1.00	EPA 8015B mod	7H03032	08/06/07 2111	ТА	
Surrogate: 4-Bromofluorob	penzene	104 %	38-145			EPA 8015B mod	7H03032	08/06/07 2111	ТА	
BTEX										
Benzene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2111	ТА	
Ethyl Benzene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2111	ТА	
Toluene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2111	ТА	
Xylenes (total)	ND	3.00	3.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2111	ТА	
Surrogate: 4-Bromofluorob	enzene	105 %	44-140			EPA 8021B	7H03032	08/06/07 2111	ТА	



Environmental Laboratories

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Report of Sample Analysis

Southwest Geo 2351 W. North Dallas, TX 752 ATTN: Chris M Laboratory ID #: 0708073-02 Sample Description MW 1	uite 3321	Page: Page 4 of 16 Project: Hobbs Station Project #: 0105013 Print Date/Time: 08/10/07 15:29 Matrix Aqueous Sample Collected By Russell Howard Sample Date/Time								
			08/0	1/07 0945						
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anist	Flag
Total Petroleum Hydro	carbons - DRO	ŗ								
Separatory Funnel Liquid-Liquid	Completed	N/A	N/A	N/A	1.00	EPA 3510C	7H07006	08/07/07 0930	MR	
TPH Diesel	0.262	0.100	0.100	mg/l	1.00	EPA 8015B mod	7H07006	08/09/07 1655	PMS	
Surrogate: a-Pinene		50 %	23-104			EPA 8015B mod	7H07006	08/09/07 1655	PMS	
Surrogate: Triacontane		93 %	61-131			EPA 8015B mod	7H07006	08/09/07 1655	PMS	
Total Petroleum Hydro	carbons - GRO									
TPH Gasoline	ND	0.0500	0.0500	mg/l	1.00	EPA 8015B mod	7H03032	08/06/07 2223	ТА	
Surrogate: 4-Bromofluorob	enzene	116 %	38-145			EPA 8015B mod	7H03032	08/06/07 2223	TA	
BTEX										
Benzene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2223	TA	
Ethyl Benzene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2223	TA	
Toluene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2223	ТА	
Xylenes (total)	ND	3.00	3.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2223	ТА	
Surrogate: 4-Bromofluorob	enzene	105 %	44-140			EPA 8021B	7H03032	08/06/07 2223	TA	



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104 %

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EPA 8021B

7H03032 08/06/07 2147

ΤA

Report of Sample Analysis

Southwest Geo 2351 W. North Dallas, TX 752 ATTN: Chris M	oscience west Highway, St 220 litchell	uite 3321		Page: Project Project Print Da	Paę : H #: ate/Tir	ge 5 of 16 Iobbs Statio 0105013 me: 08	n 10/07 15	5:29		
Laboratory ID #: 0708073-03 Sample Description MW 2	<u>Sample Type</u> Grab		<u>Matri</u> Aque <u>Sam</u> 08/0	<u>x</u> eous <u>ple Date/T</u> 1/07 1055	Time		<u>Sample C</u> Russell Ho	Collected By oward	Cust	tomer
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anlst	Flag
Total Petroleum Hydro Separatory Funnel Liquid-Liquid	carbons - DRO Completed	N/A	N/A	N/A	1.00	EPA 3510C	7H07006	08/07/07 0930	MR	
TPH Diesel	0.393	0.100	0.100	mg/l	1.00	EPA 8015B mod	7H07006	08/09/07 1700	PMS	
Surrogate: a-Pinene		52 %	23-104			EPA 8015B mod	7H07006	08/09/07 1700	PMS	
Surrogate: Triacontane		106 %	61-131			EPA 8015B mod	7H07006	08/09/07 1700	PMS	
Total Petroleum Hydro	carbons - GRO									
TPH Gasoline	ND	0.0500	0.0500	mg/l	1.00	EPA 8015B mod	7H03032	08/06/07 2147	TA	
Surrogate: 4-Bromofluorol	benzene	105 %	38-145			EPA 8015B mod	7H03032	08/06/07 2147	TA	
BTEX										
Benzene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2147	ТА	
Ethyl Benzene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2147	ТА	
Toluene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2147	TA	
Xylenes (total)	ND	3.00	3.00	ug/l	1.00	EPA 8021B	7H03032	08/06/07 2147	ТА	

44-140

Surrogate: 4-Bromofluorobenzene



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Report of Sample Analysis

Southwest Geoscience 2351 W. Northwest Highway, Suite 3321					Pag : H	e 6 of 16 obbs Statior	ו			
Dallas, TX 752	220			Project	#:	0105013				
ATTN: Chris N	litchell			Print D	ate/Tim	ne: 08/	10/07 15	5:29		
Laboratory ID #: 0708073-04 Sample Description	<u>Sample Type</u> Grab		<u>Matri</u> Aque	<u>x</u> eous			Sample C Russell Ho	collected By	Cust	omer
MW 3R			<u>Sam</u> 08/0 ⁻	<u>pie Date/ 1</u> 1/07 1210	Ime					
Analyte(s)	Result	SRL	MRL	Units	F*	Method	Batch	Analysis Date/Time	Anist	Flag
Total Petroleum Hydro	carbons - DRO		,							
Separatory Funnel Liquid-Liquid Extraction	Completed	N/A	N/A	N/A	1.00	EPA 3510C	7H07006	08/07/07 0930	MR	
TPH Diesel	4.06	0.100	0.100	mg/l	1.00	EPA 8015B mod	7H07006	08/09/07 1712	PMS	
Surrogate: a-Pinene		57 %	23-104			EPA 8015B mod	7H07006	08/09/07 1712	PMS	
Surrogate: Triacontane		109 %	61-131			EPA 8015B mod	7H07006	08/09/07 1712	PMS	
Total Petroleum Hydro	carbons - GRO			,						
TPH Gasoline	0.101	0.0500	0.0500	mg/l	1.00	EPA 8015B mod	7H03032	08/07/07 1005	ТА	
Surrogate: 4-Bromofluorol	benzene	110 %	38-145			EPA 8015B mod	7H03032	08/07/07 1005	ТА	
BTEX										
Benzene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/07/07 1005	ТА	
Ethyl Benzene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/07/07 1005	ТА	
Toluene	ND	1.00	1.00	ug/l	1.00	EPA 8021B	7H03032	08/07/07 1005	ТА	
Xylenes (total)	ND	3.00	3.00	ug/l	1.00	EPA 8021B	7H03032	08/07/07 1005	ТА	
Surrogate: 4-Bromofluorol	benzene	114 %	44-140			EPA 8021B	7H03032	08/07/07 1005	TA	
Semivolatile Polynucle	ear Aromatic Hydro	carbons								
Separatory Funnel Liquid-Liquid	Completed	N/A	N/A	ug/l	1.00	EPA 3510C	7H07021	08/07/07 1230	MR	
Acenaphthene	ND	6.00	3.00	ug/l	2.00	EPA 8270C	7H07021	08/08/07 2155	ΜZ	
Acenaphthylene	ND	6.00	3.00	ug/l	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	
Anthracene	ND	6.00	3.00	ug/ì	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	
Benzo(a)anthracene	ND	6.00	3.00	ug/ł	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	
Benzo(a)pyrene	ND	6.00	3.00	ug/l	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	
Benzo(b)fluoranthene	ND	6.00	3.00	ug/l	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	
Benzo(g,h,i)perylene	ND	6.00	3.00	ug/l	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	
Benzo(k)fluoranthene	ND	6.00	3.00	ug/l	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	
Chrysene	ND	6.00	3.00	ug/l	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	
Dibenz(a,h)anthracene	ND	6.00	3.00	ug/l	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	
Fluoranthene	ND	6.00	3.00	ug/l	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	
Fluorene	ND	6.00	3.00	ug/l	2.00	EPA 8270C	7H07021	08/08/07 2155	MZ	

Std Rpt v.2.5-070907



MW 3R

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Report of Sample Analysis

Southwest Ge	eoscience	Page: Page 7 o	f 16	
2351 W. Nort	hwest Highway, Suite 3321	Project: Hobbs	Station	
Dallas, TX 75	220	Project #: 0105	5013	
ATTN: Chris	Vitchell	Print Date/Time:	08/10/07 15:29	
Laboratory ID #:	<u>Sample Type</u>	<u>Matrix</u>	Sample Collected By	
0708073-04	Grab	Aqueous	Russell Howard	
Sample Description		Sample Date/Time		

08/01/07 1210 Analysis MRL F* Result SRL Units Method Batch Date/Time Anlst Flag Analyte(s) Semivolatile Polynuclear Aromatic Hydrocarbons, (continued) ND Indeno(1,2,3-cd)pyrene 6.00 3.00 2.00 EPA 8270C 7H07021 08/08/07 2155 ΜZ ug/l ND 7H07021 08/08/07 2155 MZ Naphthalene 6.00 3.00 2.00 EPA 8270C ug/l ND Phenanthrene 6.00 3.00 2.00 EPA 8270C 7H07021 08/08/07 2155 ΜZ ug/l ND 6.00 3.00 2.00 EPA 8270C 7H07021 08/08/07 2155 ΜZ Pyrene ug/l EPA 8270C 7H07021 08/08/07 2155 ΜZ 87 % 6-109 Surrogate: Nitrobenzene-d5 Surrogate: 2-Fluorobiphenyl 77 % 13-120 EPA 8270C 7H07021 08/08/07 2155 MZ EPA 8270C 7H07021 08/08/07 2155 MZ Surrogate: Terphenyl-d14 142 % 4-167

Customer



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Report of Sample Analysis

Southwest Geoscience	Page: Page 8 of 16
2351 W. Northwest Highway, Suite 3321	Project: Hobbs Station
Dallas, TX 75220	Project #: 0105013
ATTN: Chris Mitchell	Print Date/Time: 08/10/07 15:29

Total Petroleum Hydrocarbons - DRO - Quality Control

Analyte(s)	Result	*SRI	Units	Spike	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 7H07006 - EPA 3510C	Separatory F	unnel Extraction	ı			•			•	
Blank (7H07006-BLK1) Prepared & Analyzed: 08/07/07	09:30	,								
Separatory Funnel Liquid-Liquid Extraction	Completed	N/A	N/A							
TPH Diesel	ND	0.100	mg/l							
Surrogate: a-Pinene	0.0497		mg/l	0.103		48	23-104			
Surrogate: Triacontane	0.0923		mg/l	0.100		92	61-131			
Laboratory Control Sample (7H Prepared & Analyzed: 08/07/07	107006-BS1) 09:30									
Separatory Funnel Liquid-Liquid Extraction	Completed	N/A	N/A				0-0			
TPH Diesel	0.706	0.100	mg/l	1.02		69	64-137			
Surrogate: a-Pinene	0.0490		mg/l	0.103		48	23-104			
Surrogate: Triacontane	0.0987		mg/l	0.100		99	61-131			
Laboratory Control Sample Du Prepared & Analyzed: 08/07/07	plicate (7H0700 09:30	6-BSD1)		<u></u>			, * * 4 * 4,			
Separatory Funnel Liquid-Liquid Extraction	Completed	N/A	N/A				0-0		0	
TPH Diesel	0.872	0.100	mg/l	1.02		85	64-137	21	17	C-01
Surrogate: a-Pinene	0.0608		mg/l	0.103		59	23-104			
Surrogate: Triacontane	0.109		mg/l	0.100		109	61-131			
Matrix Spike (7H07006-MS1) Prepared & Analyzed: 08/07/07	09:30			S	ource: 070809	9-01				
Separatory Funnel Liquid-Liquid Extraction	Completed	N/A	N/A		ND		0-0			
TPH Diesel	0.796	0.100	mg/l	1.02	0.104	68	63-140			
Surrogate: a-Pinene	0.0578		mg/l	0.103		56	23-104			
Surrogate: Triacontane	0.0954		mg/l	0.100		95	61-131			
Matrix Spike Duplicate (7H0700 Prepared & Analyzed: 08/07/07	6-MSD1) 09:30			S	ource: 070809	9-01				
Separatory Funnel Liquid-Liquid Extraction	Completed	N/A	N/A		ND		0-0		0	
TPH Diesel	0.946	0.100	mg/l	1.02	0.104	83	63-140	17	21	
Surrogate: a-Pinene	0.0702		mg/l	0.103		68	23-104			
Surrogate: Triacontane	0.116		ma/l	0 100		116	61-131			



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Report of Sample Analysis

Southwest Geoscience	Page: Page 9 of 16
2351 W. Northwest Highway, Suite 3321	Project: Hobbs Station
Dallas, TX 75220	Project #: 0105013
ATTN: Chris Mitchell	Print Date/Time: 08/10/07 15:29

Total Petroleum Hydrocarbons - GRO - Quality Control

			1	Spike	Source		%REC		RPD	
Analyte(s)	Result	*SRI	Units	level	Result	WREC	Limits	RPD	Limit	Flag
Batch 7H03032 - EPA 5030	B Purge-and-Trap	o for Aqueous	s Samples							
Blank (7H03032-BLK1) Prepared: 08/03/07 18:30 Ani	alyzed: 08/06/07 11:	09					· _ · · · ·			
TPH Gasoline	ND	0.0500	mg/l							
Surrogate: 4-Bromofluorobenzene	0.0516		mg/l	0.0500		103	38-145			
Laboratory Control Sample (Prepared: 08/03/07 18:30 An	7H03032-BS1) alyzed: 08/06/07 11:	45			······································					
TPH Gasoline	0.484	0.0500	mg/l	0.500		97	75-127			
Surrogate: 4-Bromofluorobenzene	0.0520		mg/l	0.0500		104	38-145			
Laboratory Control Sample I Prepared: 08/03/07 18:30 And	Duplicate (7H03032- alyzed: 08/06/07 12:	BSD1) 20								
TPH Gasoline	0.496	0.0500	mg/l	0.500		99	75-127	2	15	
Surrogate: 4-Bromofluorobenzene	0.0557		mg/l	0.0500		111	38-145			
Matrix Spike (7H03032-MS1) Prepared: 08/03/07 18:30 Ani	alyzed: 08/06/07 12:	56			Source: 070758	30-01				
TPH Gasoline	0.432	0.0500	mg/l	0.500	ND	86	34-151			
Surrogate: 4-Bromofluorobenzene	0.0543		mg/l	0.0500		109	38-145			
Matrix Spike Duplicate (7H03 Prepared: 08/03/07 18:30 Ani	8032-MSD1) alyzed: 08/06/07 13:	32			Source: 070758	80-01				
TPH Gasoline	0.515	0.0500	mg/l	0.500	ND	103	34-151	18	20	
Surrogate: 4-Bromofluorobenzene	0.0566		mg/l	0.0500		113	38-145			



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Report of Sample Analysis

Southwest Geoscience	Page: Page 10 of 16
2351 W. Northwest Highway, Suite 3321	Project: Hobbs Station
Dallas, TX 75220	Project #: 0105013
ATTN: Chris Mitchell	Print Date/Time: 08/10/07 15:29

BTEX - Quality Control

Analyte(s)	Result	*SRI	Units	Spike	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 7H03032 - EPA 5030E	B Purge-and-Tra	p for Aqueous	s Samples							
Blank (7H03032-BLK1) Prepared: 08/03/07 18:30 Ana	lvzed: 08/06/07 11:	:09								
Benzene	ND	1.00	ug/l							
Ethyl Benzene	ND	1.00	ug/l							
Toluene	ND	1.00	ug/l							
Xylenes (total)	ND	3.00	ug/l							
Surrogate: 4-Bromofluorobenzene	53.3		ug/l	50.0		107	44-140			
Laboratory Control Sample (7 Prepared: 08/03/07 18:30 Ana	H03032-BS1) lyzed: 08/06/07 11:	45								
Benzene	45.1	1.00	ug/l	50.0		90	69-130			
Ethyl Benzene	47.1	1.00	ug/l	50.0		94	58-135			
Toluene	47.0	1.00	ug/l	50.0		94	66-131			
Xylenes (total)	142	3.00	ug/l	150		95	65-135			
Surrogate: 4-Bromofluorobenzene	54.0		ug/l	50.0		108	44-140			
Laboratory Control Sample D Prepared: 08/03/07 18:30 Ana	uplicate (7H03032- lyzed: 08/06/07 12:	- BSD1) :20								
Benzene	45.8	1.00	ug/l	50.0		92	69-130	2	20	
Ethyl Benzene	48.0	1.00	ug/l	50.0		96	58-135	2	21	
Toluene	46.5	1.00	ug/l	50.0		93	66-131	1	22	
Xylenes (total)	144	3.00	ug/l	150		96	65-135	1	19	
Surrogate: 4-Bromofluorobenzene	54.0		ug/l	50.0		108	44-140			
Matrix Spike (7H03032-MS1) Prepared: 08/03/07 18:30 Ana	lyzed: 08/06/07 12	:56		s	ource: 070758	30-01				
Benzene	42.2	1.00	ug/l	50.0	ND	84	39-157			
Ethyl Benzene	43.2	1.00	ug/l	50.0	ND	86	28-157			
Toluene	43.5	1.00	ug/l	50.0	ND	87	42-151			
Xylenes (total)	130	3.00	ug/l	150	ND	87	39-156			
Surrogate: 4-Bromofluorobenzene	54.4		ug/l	50.0		109	44-140			



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Report of Sample Analysis

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2351 W. Northwest Highway, Suite 3321	Project: Hobbs Station
Dallas, TX 75220	Project #: 0105013
ATTN: Chris Mitchell	Print Date/Time: 08/10/07 15:29

BTEX - Quality Control

	l Result	*SDI		Spike	Source	I%REC	%REC	RPD	RPD Limit	Flag
Batch 7H03032 - EPA 503	0B Purge-and-Trai	o for Aqueous	s Samples	(continue	1)	701120	1		 _	1
Matrix Spike Duplicate (7H0	13032-MSD1)			(000000000	~,					
Prepared: 08/03/07 18:30 Ar	nalyzed: 08/06/07 13:	32		S	ource: 070758	30-01				
Benzene	45.0	1.00	ug/l	50.0	ND	90	39-157	6	24	
Ethyl Benzene	45.3	1.00	ug/l	50.0	ND	91	28-157	5	35	
Toluene	46.1	1.00	ug/l	50.0	ND	92	42-151	6	28	
Xylenes (total)	137	3.00	ug/l	150	ND	91	39-156	5	32	
Surrogate: 4-Bromofluorobenzene	51.0		ug/l	50.0		102	44-140			



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Report of Sample Analysis

Southwest Geoscience	Page: Page 12 of 16
2351 W. Northwest Highway, Suite 3321	Project: Hobbs Station
Dallas, TX 75220	Project #: 0105013
ATTN: Chris Mitchell	Print Date/Time: 08/10/07 15:29

Semivolatile Polynuclear Aromatic Hydrocarbons - Quality Control

Analyte(s)	Result	*SRI	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	_	Flag
Batch 7H07021 - EPA 3510C	Separatory F	unnel Extractio	on								
Blank (7H07021-BLK1)											
Prepared & Analyzed: U8/U7/U7 Separatory Funnel Liquid-Liquid Extraction	Completed	NI/A	ua/l								
Acenanbthene	ND	6.00	ua/l								
Acenaphthylene	ND	6.00	ug/l								
Anthracene	ND	6.00	ug/l								
Benzo(a)anthracene	ND	6.00	ug/l								
Benzo(a)pyrene	ND	6.00	ug/l								
Benzo(b)fluoranthene	ND	6.00	ug/l								
Benzo(a.h.i)pervlene	ND	6.00	ug/l								
Benzo(k)fluoranthene	ND	6.00	ug/l								
Chrysene	ND	6.00	ug/l								
Dibenz(a h)anthracene	ND	6.00	ug/l								
Fluoranthene	ND	6.00	ug/l								
Fluorene	ND	6.00	ug/l								
Indeno(1.2.3-cd)pyrene	ND	6.00	ug/l								
Naphthalene	ND	6.00	ug/l								
Phenanthrene	ND	6.00	ug/l								
Pvrene	ND	6.00	ug/l								
Surrogate: Nitrobenzene-d5	73.3	0.00	ua/l	103		71	6-109				
Surrogate: 2-Fluorobiphenvl	71.9		ug/l	103		70	13-120				
Surrogate: Terphenyl-d14	110		ug/l	100		109	4-167				
Laboratory Control Sample (7)	H07021-BS1)										
Prepared & Analyzed: 08/07/07	7 12:30										
Separatory Funnel Liquid-Liquid Extraction	Completed	N/A	ug/l				0-0				
Acenaphthene	41.6	6.00	ug/l	50.0		83	31-127				
Acenaphthylene	42.4	6.00	ug/l	50.0		85	10-140				
Anthracene	45.5	6.00	ug/l	50.0		91	10-140				
Benzo(a)anthracene	48.3	6.00	ug/l	50.0		97	10-140				
Benzo(a)pyrene	47.8	6.00	ug/l	50.0		96	10-140				
Benzo(b)fluoranthene	46.6	6.00	ug/ì	50.0		93	10-140				
Benzo(g,h,i)perylene	34.8	6.00	ug/l	50.0		70	10-140				
Benzo(k)fluoranthene	52.9	6.00	ug/l	50.0		106	10-140				
Chrysene	49.9	6.00	ug/l	50.0		100	10-140				



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Report of Sample Analysis

Southwest Geoscience	Page: Page 13 of 16
2351 W. Northwest Highway, Suite 3321	Project: Hobbs Station
Dallas, TX 75220	Project #: 0105013
ATTN: Chris Mitchell	Print Date/Time: 08/10/07 15:29

	Semivolatile P	olynuclea	ar Aromat	ic Hydroc	arbons - Q	uality Co	ntrol			
Analyte(s)	Result	*SRI	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 7H07021 - EPA 3510C	Separatory Funne	I Extractio	on (continu	ed)	ar :					
Laboratory Control Sample (7H Prepared: 08/07/07 12:30 Analy	107021-BS1) zed: 08/08/07 17:24							n faile a		
Dibenz(a,h)anthracene	40.5	6.00	ug/l	50.0		81	10-140			
Fluoranthene	46.2	6.00	ug/l	50.0		92	10-140			
Fluorene	42.0	6.00	ug/l	50.0		84	10-140			
Indeno(1,2,3-cd)pyrene	41.6	6.00	ug/l	50.0		83	10-140			
Naphthalene	39.0	6.00	ug/l	50.0		78	10-140			
Phenanthrene	46.5	6.00	ug/l	50.0		93	10-140			
Pyrene	45.3	6.00	ug/l	50.0		91	43-128			
Surrogate: Nitrobenzene-d5	84.0		ug/l	103		82	6-109			
Surrogate: 2-Fluorobiphenyl	79.5		ug/l	103		77	13-120			
Surrogate: Terphenyl-d14	135		ug/l	101		134	4-167			
Laboratory Control Sample Du Prepared & Analyzed: 08/07/07 Separatory Funnel Liquid-Liquid Extraction	plicate (7H07021-BS 12:30 Completed	D1)	ua/l				0-0		0	
Acenanhthene	37.8	6.00	ua/l	50.0		76	31-127	10	18	
Acenaphthylene	38.6	6.00	ug/i	50.0		77	10-140	9	40	
Anthracene	43.7	6.00	ug/l	50.0		87	10-140	4	40	
Benzo(a)anthracene	47.2	6.00	ug/l	50.0		94	10-140	2	40	
Benzo(a)pyrene	47.6	6.00	ug/l	50.0		95	10-140	0.4	40	
Benzo(b)fluoranthene	42.4	6.00	ug/l	50.0		85	10-140	9	40	
Benzo(g,h,i)perylene	35.3	6.00	ug/l	50.0		71	10-140	1	40	
Benzo(k)fluoranthene	55.2	6.00	ug/l	50.0		110	10-140	4	40	
Chrysene	48.9	6.00	ug/l	50.0		98	10-140	2	40	
Dibenz(a,h)anthracene	43.7	6.00	ug/l	50.0		87	10-140	8	40	
Fluoranthene	43.3	6.00	ug/l	50.0		87	10-140	6	40	
Fluorene	39.1	6.00	ug/I	50.0		78	10-140	7	40	
Indeno(1,2,3-cd)pyrene	44.5	6.00	ug/l	50.0		89	10-140	7	40	
Naphthalene	34.0	6.00	ug/l	50.0		68	10-140	14	40	
Phenanthrene	44.3	6.00	ug/l	50.0		89	10-140	5	40	
Pyrene	42.2	6.00	ug/l	50.0		84	43-128	7	20	
Surrogate: Nitrobenzene-d5	75.2		ug/l	103		73	6-109			
Surrogate: 2-Fluorobiphenyl	73.0		ug/l	103		71	13-120			
Surrogate: Terphenyl-d14	131		uɑ/l	101		130	4-167			

Std Rpt v.2.5-070907



State Certifications Arkansas: 88-0647 Oklahoma: 8727

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Dallas, TX 75220	Project #: 0105013					
ATTN: Chris Mitchell	Print Date/Time: 08/10/07 15:29					

Semivolatile Polynuclear Aromatic Hydrocarbons - Quality Control

Analyte(s)	Result	*SRI	Units	Spike	Source Result	KREC	%REC Limits	RPD	RPD Limit	Flag
Batch 7H07021 - EPA 35100	Separatory Fu	unnel Extractio	on (continu	ed)						
Laboratory Control Sample Du Prepared: 08/07/07 12:30 Anal	uplicate (7H0702 yzed: 08/08/07 1	1-BSD1) 8:22								
Matrix Spike (7H07021-MS1) Prepared & Analyzed: 08/07/07 12:30 Source: 0708099-01										
Separatory Funnel Liquid-Liquid Extraction	Completed	N/A	ug/l		ND		0-0			
Acenaphthene	40.8	6.00	ug/l	50.0	ND	82	36-120			
Acenaphthylene	41.8	6.00	ug/l	50.0	ND	84	10-140			
Anthracene	43.8	6.00	ug/l	50.0	ND	88	10-140			
Benzo(a)anthracene	44.1	6.00	ug/l	50.0	ND	88	10-140			
Benzo(a)pyrene	40.8	6.00	ug/l	50.0	ND	82	10-140			
Benzo(b)fluoranthene	36.4	6.00	ug/l	50.0	ND	73	10-140			
Benzo(g,h,i)perylene	24.3	6.00	ug/l	50.0	ND	49	10-140			
Benzo(k)fluoranthene	49.1	6.00	ug/l	50.0	ND	98	10-140			
Chrysene	46.5	6.00	ug/l	50.0	ND	93	10-140			
Dibenz(a,h)anthracene	31.6	6.00	ug/l	50.0	ND	63	10-140			
Fluoranthene	46.0	6.00	ug/l	50.0	ND	92	10-140			
Fluorene	41.6	6.00	ug/l	50.0	ND	83	10-140			
Indeno(1,2,3-cd)pyrene	32.3	6.00	ug/l	50.0	ND	65	10-140			
Naphthalene	39.5	6.00	ug/l	50.0	ND	79	10-140			
Phenanthrene	45.0	6.00	ug/l	50.0	ND	90	10-140			
Pyrene	44.7	6.00	ug/l	50.0	ND	89	42-128			
Surrogate: Nitrobenzene-d5	91.0		ug/l	103		88	6-109			
Surrogate: 2-Fluorobiphenyl	77.7		ug/l	103		75	13-120			
Surrogate: Terphenyl-d14	123		ug/l	101		122	4-167			
Matrix Spike Duplicate (7H070	21-MSD1)									
Prepared & Analyzed: 08/07/07	7 12:30		- //	S	ource: 070809	9-01				
Separatory Funnel Liquid-Liquid Extraction	Completed	N/A	ug/i		ND		0-0		0	0.04
Acenaphthene	46.0	6.00	ug/I	50.0	ND	92	36-120	12	11	2-04
Acenaphthylene	46.8	6.00	ug/l	50.0	ND	94	10-140	11	40	
Anthracene	48.5	6.00	ug/l	50.0	ND	97	10-140	10	40	
Benzo(a)anthracene	48.5	6.00	ug/l	50.0	ND	97	10-140	10	40	
Benzo(a)pyrene	44.6	6.00	ug/l	50.0	ND	89	10-140	9	40	
Benzo(b)fluoranthene	39.6	6.00	ug/l	50.0	ND	79	10-140	8	40	
Benzo(g,h,i)perylene	24.3	6.00	ug/l	50.0	ND	49	10-140	0	40	



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Semivolatile Polynuclear Aromatic Hydrocarbons - Quality Control

Analyte(s)	Result	*SRL	Units	Spike	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 7H07021 - EPA 3510	C Separatory Fur	nnel Extractio	n (continu	ed)		•	•	-		-
Matrix Spike Duplicate (7H07 Prepared: 08/07/07 12:30 Ana	021-MSD1) Ilyzed: 08/08/07 20:	:08		S	ource: 070809	9-01				
Benzo(k)fluoranthene	52.3	6.00	ug/l	50.0	ND	105	10-140	6	40	
Chrysene	50.4	6.00	ug/l	50.0	ND	101	10-140	8	40	
Dibenz(a,h)anthracene	33.8	6.00	ug/l	50.0	ND	68	10-140	7	40	
Fluoranthene	49.9	6.00	ug/l	50.0	ND	100	10-140	8	40	
Fluorene	46.8	6.00	ug/l	50.0	ND	94	10-140	12	40	
Indeno(1,2,3-cd)pyrene	35.1	6.00	ug/l	50.0	ND	70	10-140	8	40	
Naphthalene	42.9	6.00	ug/l	50.0	ND	86	10-140	8	40	
Phenanthrene	50.2	6.00	ug/l	50.0	ND	100	10-140	11	40	
Pyrene	48.5	6.00	ug/l	50.0	ND	97	42-128	8	19	
Surrogate: Nitrobenzene-d5	99.1		ug/l	103		96	6-109			
Surrogate: 2-Fluorobiphenyl	88.0		ug/l	103		85	13-120			
Surrogate: Terphenyl-d14	137		ug/l	101		136	4-167			



State Certifications Arkansas: 88-0647 Oklahoma: 8727

Report of Sample Analysis

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Notes and Definitions

The results presented in this report were generated using those methods given in 40 CFR Part 136 for Water and Wastewater samples and in SW-846 for RCRA/Solid Waste samples.

- C-01 The RPD is higher than expected.
- Q-04 The RPD of the target analyte(s) in the MS/MSD is outside of established limits. The RPD of this same analyte(s) in the LCS/LCSD is within acceptable limits. Therefore, the data were reported and are acceptable.
- NDAnalyte NOT DETECTED at or above the reporting limitdrySample results reported on a dry weight basis
- LCS/LCSD Laboratory Control Sample/Laboratory Control Sample Duplicate
- MS/MSD Matrix Spike/Matrix Spike Duplicate
- RPD Relative Percent Difference
- mg/kg milligrams per kilogram
- mg/l milligrams per liter
- ug/kg micrograms per kilogram
- ug/l micrograms per liter
- F* Calculated factor rounded to 3 significant figures. Concentration factor when <1.00 and dilution factor when >1.00.
- Anlst Analyst Initials
- SRL Sample Reporting Limit
- MRL Method Reporting Limit



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Lab	Number	(s):	07	0	8	Ô	73
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ERMI Sample Preservation Documentation*

On Ice (Circle One): YES OR NO (check if on Dry Ice____)

Parameters	Conta #	ainers Size	Required Preservation	Sample Container	Circle pH Note any discrepancy
Metals			pH < 2	Glass or Plastic	pH < 2
Dissolved Metals			Unpreserved prior to being filtered, Cool**	Glass or Plastic	
Hexavalent Chromium			CWA - pH 9.3-9.7, Cool; RCRA - Cool	Glass or Plastic	Checked At Analysis
Semivolatiles, Pesticides, PCBs , Herbicides PAH	1	11+	Cool	Glass only with Teflon lid	
VOA (BTEX, MTBE, 624, 8260, TCH-GBO)	12	40	Cool, pH < 2 Zero Head Space	40 ml VOA vial	DO NOT OPEN
VOA (TPH-1005)			Cool, Zero Head Space Please check if collected in pre-weighed vials	40 ml VOA vial	DO NOT OPEN
Phos., NO₃/NO₂, NH₃N, COD, TKN,TOC			Cool, pH < 2	Glass or Plastic	pH < 2
TDS, BOD, CBOD, Cond, pH, TSS, F, SO₄, CI, Alk, Sulfite			Cool	Glass or Plastic, Plastic only if F	
Phenols, TPH-DR9	4	11+	Cool, pH < 2	Glass only Ceflor lid Foil lid	рH < 2
Oil & Grease, TPH (by 1664a)			Cool, pH < 2	Glass only Teflon lid Foil lid	DO NOT Check pH
Cyanide			Cool, pH >12	Glass or Plastic	pH > 12 Chlorine ⊡yes ⊡no Sulfide ⊡yes ⊡no ⊡na
Sulfide			Cool, pH > 9	Glass or Plastic	pH > 9
Bacteria			Cool	Plastic Sterile Cup	
Soil, Sludge, Solid, Oil, Liquid			Cool Note: please check if collected in pre-weighed vials		

Metals Preserved By Login Dyes Dno

COMMENTS:

*This form is used to document sample preservation. Circle parameter requested. Fill in number and size of containers received. Check pH (adjust if needed) and note if different from what is required and make a notation of any samples not received on ice. Note any incorrect sample containers or preservation on chain-of-custody.

**Cool means cooled to ≤6°C but not frozen for CWA samples and 4°C ± 2°C for RCRA samples.

Preservation Checked By بسر

8.3-07 Date

425 Time

-

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0.017010

kkb 4/18/071000.0-3