Analytical Report 413032

for

Tetra Tech EM, Atlanta

Project Manager: Jessica Vickers

Kerr McGee

103DX9017.0001.0154

15-APR-11

XENCO Laboratories
Florida Testing Services, LLC

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

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6017 Financial Dr., Norcross, GA 30071
Ph:(770) 449-8800 Fax:(770) 449-5477

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
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Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
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Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
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North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
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Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

Table of Contents

15-APR-11

Project Manager: **Jessica Vickers**
Tetra Tech EM, Atlanta
1955 Evergreen Boulevard, Building 200, Suite 300
Duluth, GA 30096

Reference: XENCO Report No: **413032**
Kerr McGee
Project Address: Columbus, Mississippi

Jessica Vickers:

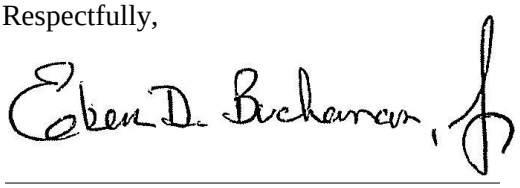
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 413032. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 413032 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,



Eben Buchanan
Project Manager

Sample Cross Reference 413032

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
KM-BF-041211-01	S	Apr-12-11 16:25		413032-001
KM-BF-041211-02	S	Apr-12-11 16:30		413032-002

Project ID:	*103DX9017.0001.0154*	*Report Date:*	*15-APR-11*
Work Order Number:	*413032*	*Date Received:*	*04/13/2011*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

***** Outside XENCO's scope of NELAC Accreditation.

QEC
Quality Environmental Containers

C-QEC
CERTIFICATE OF QUALITY ENVIRONMENTAL COMPLIANCE

P.O. Box 1160 • Beaver, WV 25813 • 800-255-3950 • 304-255-3900

Lot Number **F-0-342-01AB** **9 oz. Clear Jar 2114-0009**

The above lot number has been specially cleaned using procedures specified by the USEPA to limit the concentration of the following organic compounds:

Compound	CRQL (µg/L)	Compound	CRQL (µg/L)
Phenol	5	2,4-Dinitrophenol	20
bis-(2-Chlorethyl)ether	5	4-Nitrophenol	20
2-Chlorophenol	5	Dibenzofuran	5
2-Methylphenol	5	2,4-Dinitrotoluene	5
2,2'-oxybis-(1-Chloropropane)	5	Diethylphthalate	5
4-Methylphenol	5	4-Chlorophenyl-phenylether	5
N-Nitroso-di-n-dipropylamine	5	Fluorene	5
Hexachloroethane	5	4-Nitroaniline	20
Nitrobenzene	5	4,6-Dinitro-2-methylphenol	20
Isophorone	5	N-Nitrosodiphenylamine	5
2-Nitrophenol	5	4-Bromophenyl-phenylether	5
2,4-Dimethylphenol	5	Hexachlorobenzene	5
bis-(2-Chloroethoxy)methane	5	Pentachlorophenol	20
2,4-Dichlorophenol	5	Phenanthrene	5
1,2,4-Trichlorobenzene	5	Anthracene	5
Naphthalene	5	Di-n-butylphthalate	5
4-Chloroaniline	5	Fluoranthene	5
Hexachlorobutadiene	5	Pyrene	5
4-Chloro-3-methylphenol	5	Butylbenzylphthalate	5
2-Methylnaphthalene	5	3,3'-Dichlorobenzidine	5
Hexachlorocyclopentadiene	5	Benz[a]anthracene	5
2,4,6-Trichlorophenol	5	Chyrsene	5
2,4,5-Trichlorophenol	20	bis-(2-Ethylhexyl)phthalate	5
2-Chloronaphthalene	5	Di-n-octylphthalate	5
2-Nitroaniline	20	Benzo[b]fluoranthene	5
Dimethylphthalate	5	Benzo[k]fluoranthene	5
Acenaphthylene	5	Benzo[a]pyrene	5
2,6-Dinitrotoluene	5	Indeno(1,2,3-cd)pyrene	5
3-Nitroaniline	20	Dibenz[a,h]anthracene	5
Acenaphthene	5	Benzo[g,h,i]perylene	5

The above lot number has also been specially cleaned using procedures specified by the USEPA to limit the concentration of the following pesticides/PCBs compounds:

Compound	CRQL (µg/L)	Compound	CRQL (µg/L)
alpha-BHC	0.01	4,4'-DDT	0.02
beta-BHC	0.01	Methoxychlor	0.10
delta-BHC	0.01	Endrin ketone	0.02
gamma-BHC (Lindane)	0.01	Endrin aldehyde	0.02
Heptachlor	0.01	alpha-Chlordane	0.01
Aldrin	0.01	gamma-chlordane	0.01
Heptachlor epoxide	0.01	Toxaphene	1.00
Endosulfan I	0.01	Aroclor-1016	0.20
Dieldrin	0.02	Aroclor-1221	0.20
4,4'-DDE	0.02	Aroclor-1232	0.40
Endrin	0.02	Aroclor-1242	0.20
EndosulfanII	0.02	Aroclor-1248	0.20
4,4'-DDD	0.02	Aroclor-1254	0.20
Endosulfan sulfate	0.02	Aroclor-1260	0.20

The above lot number has also been specially cleaned using procedures specified by the USEPA to limit the concentration of the following elements:

Element	CRQL (µg/L)	Element	CRQL (µg/L)
Aluminum	100	Manganese	10
Antimony	5	Mercury	0.2
Arsenic	2	Nickel	20
Barium	20	Potassium	750
Beryllium	1	Selenium	3
Cadmium	1	Silver	10
Calcium	500	Sodium	500
Chromium	10	Thallium	10
Cobalt	10	Vanadium	10
Copper	10	Zinc	20
Iron	500	Cyanide	10
Lead	2	Fluoride	200
Magnesium	500	Nitrate/Nitrite	100

6017 Financial Dr., Norcross, GA 30071
Ph:(770) 449-8800 Fax:(770) 449-5477

XENCO Laboratories

Bottle Order No: 3018

COPY

XENCO Laboratories

Client Information		Project Information		Delivery Information	
Client:	Tetra Tech EM, Atlanta	Date Requested:	04/08/2011	Date Required:	04/11/2011 00:00
Project Manager:	Jessica Vickers	Project Manager:	Eben Buchanan	Bill to Client:	N
Requested by:	Jessica Vickers	Project No:	10313	Delivery Method:	Delivered by Laboratory
Deliver to:	10955 Evergreen Blvd. Bld. 200 Suite 300 Duluth GA 300967	Project Name:	Tronox - Columbus, MS Samp	Airbill:	N/A
		Prepared by:	4/9/11 12:00	No. of Coolers:	1
Phone/Fax:	678-775-3080 / 678-775-3138				

No. Smp	Bottles	Total	Matrix	Analysis	Syze Type	Preservative	HT	Container Lot #	Preserv. Lot #	Comments
14	1	14	S	PAHs by SW8270C_SIM	9 OZ Straight-Side, W/M Glass Amber	Cool to <4 deg C	40 Days	F.0-342-01AB	N/A	One Jar for 8270 PAH-SIM and Moisture
0	1	0	S	Percent Moisture	4 OZ Straight-Side, W/M Glass Amber	Cool to <4 deg C	45 Days	—	—	One Jar for 8270 PAH-SIM and Moisture

Comments

Supplies

[X] COC(s) — [X] Label(s) [ ] Trip Blanks 1 No. of Sets

[X] Custody Seals

Directions / Notes To Drive

Deliver to Eric Turner at Tetra Tech, Include a copy of Container CofA and give a copy to PM for final report.

**** Please pack all samples with ice prior to shipment. Please inform your project manager if you can not achieve this.****

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee

Sample Id: KM-BF-041211-01 **Matrix:** Soil **Date Received:** Apr-13-11 10:16
Lab Sample Id: 413032-001 **Date Collected:** Apr-12-11 16:25

Analytical Method: Mercury by SW-846 7471A **Prep Method:** SW7471P
Tech: ABA **% Moisture:** 11.5
Analyst: 4150 **Date Prep:** Apr-13-11 11:34 **Basis:** Dry Weight
Seq Number: 852013

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**2.83**	5.04	0.303	mg/kg	04/14/11 12:50	J	1

Analytical Method: PAHs by SW8270C_SIM **Prep Method:** SW3545
Tech: 4118 **% Moisture:** 11.5
Analyst: BJM **Date Prep:** Apr-13-11 14:00 **Basis:** Dry Weight
Seq Number: 851950

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	BRL	7.5	0.99	ug/kg	04/13/11 19:58	U	1
2-Methylnaphthalene	91-57-6	BRL	7.5	0.99	ug/kg	04/13/11 19:58	U	1
Acenaphthene	83-32-9	BRL	7.5	0.91	ug/kg	04/13/11 19:58	U	1
Acenaphthylene	208-96-8	BRL	7.5	0.91	ug/kg	04/13/11 19:58	U	1
Anthracene	120-12-7	BRL	7.5	1.4	ug/kg	04/13/11 19:58	U	1
Benzo(a)anthracene	56-55-3	BRL	7.5	1.3	ug/kg	04/13/11 19:58	U	1
Benzo(a)pyrene	50-32-8	BRL	7.5	2.2	ug/kg	04/13/11 19:58	U	1
Benzo(b)fluoranthene	205-99-2	BRL	7.5	2.1	ug/kg	04/13/11 19:58	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	7.5	1.2	ug/kg	04/13/11 19:58	U	1
Benzo(k)fluoranthene	207-08-9	BRL	7.5	2.0	ug/kg	04/13/11 19:58	U	1
Chrysene	218-01-9	BRL	7.5	2.0	ug/kg	04/13/11 19:58	U	1
Dibenz(a,h)anthracene	53-70-3	BRL	7.5	1.0	ug/kg	04/13/11 19:58	U	1
Fluoranthene	206-44-0	BRL	7.5	1.7	ug/kg	04/13/11 19:58	U	1
Fluorene	86-73-7	BRL	7.5	1.5	ug/kg	04/13/11 19:58	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	7.5	1.0	ug/kg	04/13/11 19:58	U	1
Naphthalene	91-20-3	**15**	7.5	1.0	ug/kg	04/13/11 19:58		1
Phenanthrene	85-01-8	BRL	7.5	0.91	ug/kg	04/13/11 19:58	U	1
Pyrene	129-00-0	BRL	7.5	1.6	ug/kg	04/13/11 19:58	U	1

Analytical Method: Percent Moisture
Tech: 4099 **% Moisture:**
Analyst: 4099 **Basis:** Wet Weight
Seq Number: 851867

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Percent Moisture	TMOIST	**11.5**	1.00	1.00	%	04/13/11 11:20		1

Project: Tronox - Columbus, MS Sampling

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 413032

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Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee

Sample Id: KM-BF-041211-01 **Matrix:** Soil **Date Received:** Apr-13-11 10:16
Lab Sample Id: 413032-001 **Date Collected:** Apr-12-11 16:25

Analytical Method: RCRA Metals by SW846-6010B **Prep Method:** SW3050B
Tech: ABA **% Moisture:** 11.5
Analyst: 4150 **Date Prep:** Apr-13-11 11:29 **Basis:** Dry Weight
Seq Number: 852008

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**4.06**	5.43	0.670	mg/kg	04/14/11 13:33	J	1
Barium	7440-39-3	**49.5**	5.43	0.166	mg/kg	04/14/11 13:33		1
Cadmium	7440-43-9	**0.761**	0.543	0.0228	mg/kg	04/14/11 13:33		1
Chromium	7440-47-3	**31.5**	5.43	0.104	mg/kg	04/14/11 13:33		1
Lead	7439-92-1	**10.4**	5.43	0.326	mg/kg	04/14/11 13:33		1
Selenium	7782-49-2	BRL	5.43	1.04	mg/kg	04/14/11 13:33	U	1
Silver	7440-22-4	BRL	5.43	0.0514	mg/kg	04/14/11 13:33	U	1

Project: Tronox - Columbus, MS Sampling

Final 1.000

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee

Sample Id: KM-BF-041211-02 **Matrix:** Soil **Date Received:** Apr-13-11 10:16
Lab Sample Id: 413032-002 **Date Collected:** Apr-12-11 16:30

Analytical Method: Mercury by SW-846 7471A **Prep Method:** SW7471P
Tech: ABA **% Moisture:** 10.1
Analyst: 4150 **Date Prep:** Apr-13-11 11:34 **Basis:** Dry Weight
Seq Number: 852013

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**2.22**	5.56	0.334	mg/kg	04/14/11 13:16	J	1

Analytical Method: PAHs by SW8270C_SIM **Prep Method:** SW3545
Tech: 4118 **% Moisture:** 10.1
Analyst: BJM **Date Prep:** Apr-13-11 14:00 **Basis:** Dry Weight
Seq Number: 851950

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	BRL	7.4	0.98	ug/kg	04/13/11 20:22	U	1
2-Methylnaphthalene	91-57-6	BRL	7.4	0.98	ug/kg	04/13/11 20:22	U	1
Acenaphthene	83-32-9	BRL	7.4	0.89	ug/kg	04/13/11 20:22	U	1
Acenaphthylene	208-96-8	BRL	7.4	0.89	ug/kg	04/13/11 20:22	U	1
Anthracene	120-12-7	BRL	7.4	1.4	ug/kg	04/13/11 20:22	U	1
Benzo(a)anthracene	56-55-3	BRL	7.4	1.2	ug/kg	04/13/11 20:22	U	1
Benzo(a)pyrene	50-32-8	BRL	7.4	2.2	ug/kg	04/13/11 20:22	U	1
Benzo(b)fluoranthene	205-99-2	BRL	7.4	2.1	ug/kg	04/13/11 20:22	U	1
Benzo(g,h,i)perylene	191-24-2	BRL	7.4	1.2	ug/kg	04/13/11 20:22	U	1
Benzo(k)fluoranthene	207-08-9	BRL	7.4	2.0	ug/kg	04/13/11 20:22	U	1
Chrysene	218-01-9	BRL	7.4	2.0	ug/kg	04/13/11 20:22	U	1
Dibenz(a,h)anthracene	53-70-3	BRL	7.4	1.0	ug/kg	04/13/11 20:22	U	1
Fluoranthene	206-44-0	BRL	7.4	1.6	ug/kg	04/13/11 20:22	U	1
Fluorene	86-73-7	BRL	7.4	1.5	ug/kg	04/13/11 20:22	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	BRL	7.4	1.0	ug/kg	04/13/11 20:22	U	1
Naphthalene	91-20-3	**7.4**	7.4	1.0	ug/kg	04/13/11 20:22	J	1
Phenanthrene	85-01-8	BRL	7.4	0.89	ug/kg	04/13/11 20:22	U	1
Pyrene	129-00-0	BRL	7.4	1.6	ug/kg	04/13/11 20:22	U	1

Analytical Method: Percent Moisture
Tech: 4099 **% Moisture:**
Analyst: 4099 **Basis:** Wet Weight
Seq Number: 851867

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Percent Moisture	TMOIST	**10.1**	1.00	1.00	%	04/13/11 11:20		1

Project: Tronox - Columbus, MS Sampling

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 413032

ACCREDITED IN ACCORDANCE WITH nelac

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee

Sample Id: KM-BF-041211-02 **Matrix:** Soil **Date Received:** Apr-13-11 10:16
Lab Sample Id: 413032-002 **Date Collected:** Apr-12-11 16:30

Analytical Method: RCRA Metals by SW846-6010B **Prep Method:** SW3050B
Tech: ABA **% Moisture:** 10.1
Analyst: 4150 **Date Prep:** Apr-13-11 11:29 **Basis:** Dry Weight
Seq Number: 852008

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**2.68**	5.30	0.654	mg/kg	04/14/11 13:44	J	1
Barium	7440-39-3	**41.6**	5.30	0.162	mg/kg	04/14/11 13:44		1
Cadmium	7440-43-9	**0.657**	0.530	0.0222	mg/kg	04/14/11 13:44		1
Chromium	7440-47-3	**10.8**	5.30	0.102	mg/kg	04/14/11 13:44		1
Lead	7439-92-1	**8.04**	5.30	0.318	mg/kg	04/14/11 13:44		1
Selenium	7782-49-2	BRL	5.30	1.01	mg/kg	04/14/11 13:44	U	1
Silver	7440-22-4	BRL	5.30	0.0501	mg/kg	04/14/11 13:44	U	1

Project: Tronox - Columbus, MS Sampling

Final 1.000

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: Kerr McGee

Work Orders : 413032,

Project ID: 103DX9017.0001.0154

Lab Batch #: 851950 **Sample:** 600368-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: ug/kg **Date Analyzed:** 04/13/11 19:10

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	510	1000	51	9-125	
Nitrobenzene-d5	420	1000	42	20-151	
Terphenyl-D14	630	1000	63	11-134	

Lab Batch #: 851950 **Sample:** 600368-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: ug/kg **Date Analyzed:** 04/13/11 19:34

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	510	1000	51	9-125	
Nitrobenzene-d5	470	1000	47	20-151	
Terphenyl-D14	580	1000	58	11-134	

Lab Batch #: 851950 **Sample:** 413032-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/13/11 19:58

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	560	1000	56	9-125	
Nitrobenzene-d5	530	1000	53	20-151	
Terphenyl-D14	1060	1000	106	11-134	

Lab Batch #: 851950 **Sample:** 413032-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/13/11 20:22

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	480	1000	48	9-125	
Nitrobenzene-d5	480	1000	48	20-151	
Terphenyl-D14	600	1000	60	11-134	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Final 1.000

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: Kerr McGee

Work Orders : 413032,

Project ID: 103DX9017.0001.0154

Lab Batch #: 851950 **Sample:** 413032-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/13/11 20:46

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	440	1000	44	9-125	
Nitrobenzene-d5	390	1000	39	20-151	
Terphenyl-D14	770	1000	77	11-134	

Lab Batch #: 851950 **Sample:** 413032-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/13/11 21:10

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	520	1000	52	9-125	
Nitrobenzene-d5	520	1000	52	20-151	
Terphenyl-D14	870	1000	87	11-134	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Blank Spike Recovery

Project Name: Kerr McGee

Work Order #: 413032 **Project ID:** 103DX9017.0001.0154

Lab Batch #: 851950 **Sample:** 600368-1-BKS **Matrix:** Solid

Date Analyzed: 04/13/2011 **Date Prepared:** 04/13/2011 **Analyst:** BJM

Reporting Units: ug/kg **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
1-Methylnaphthalene	<0.88	33	16	48	31-115	
2-Methylnaphthalene	<0.88	33	15	45	29-114	
Acenaphthene	<0.80	33	16	48	32-117	
Acenaphthylene	<0.80	33	15	45	30-119	
Anthracene	<1.2	33	16	48	48-114	
Benzo(a)anthracene	<1.1	33	20	61	32-141	
Benzo(a)pyrene	<1.9	33	17	52	51-119	
Benzo(b)fluoranthene	<1.9	33	20	61	38-131	
Benzo(g,h,i)perylene	<1.0	33	16	48	48-124	
Benzo(k)fluoranthene	<1.8	33	19	58	43-125	
Chrysene	<1.8	33	18	55	49-129	
Dibenz(a,h)anthracene	<0.92	33	17	52	39-134	
Fluoranthene	<1.5	33	17	52	35-126	
Fluorene	<1.3	33	16	48	42-111	
Indeno(1,2,3-c,d)Pyrene	<0.92	33	17	52	49-122	
Naphthalene	<0.92	33	15	45	29-118	
Phenanthrene	<0.80	33	17	52	45-111	
Pyrene	<1.5	33	19	58	56-117	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Final 1.000

BS / BSD Recoveries

Project Name: Kerr McGee

Work Order #: 413032 **Project ID:** 103DX9017.0001.0154

Analyst: 4150 **Date Prepared:** 04/13/2011 **Date Analyzed:** 04/14/2011

Lab Batch ID: 852013 **Sample:** 600343-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Mercury by SW-846 7471A Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	<0.300	50.0	50.4	101	50.0	51.2	102	2	85-115	20	

Analyst: 4150 **Date Prepared:** 04/13/2011 **Date Analyzed:** 04/14/2011

Lab Batch ID: 852008 **Sample:** 600340-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

RCRA Metals by SW846-6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Arsenic	<0.617	100	89.4	89	100	88.1	88	1	75-125	20	
Barium	<0.153	100	89.5	90	100	88.4	88	1	75-125	20	
Cadmium	<0.0210	100	88.1	88	100	87.0	87	1	75-125	20	
Chromium	<0.0960	100	89.9	90	100	88.7	89	1	75-125	20	
Lead	<0.300	100	92.0	92	100	90.6	91	2	75-125	20	
Selenium	<0.956	100	90.9	91	100	89.7	90	1	75-125	20	
Silver	<0.0473	100	87.3	87	100	86.2	86	1	75-125	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories
Florida Testing Services, LLC

Form 3 - MS / MSD Recoveries

Project Name: Kerr McGee

Work Order # : 413032 **Project ID:** 103DX9017.0001.0154

Lab Batch ID: 852013 **QC- Sample ID:** 413032-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/14/2011 **Date Prepared:** 04/13/2011 **Analyst:** 4150

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Mercury by SW-846 7471A Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	2.83	54.3	56.1	98	52.3	52.9	96	6	85-115	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories
Florida Testing Services, LLC

Form 3 - MS / MSD Recoveries

Project Name: Kerr McGee

Work Order # : 413032 **Project ID:** 103DX9017.0001.0154

Lab Batch ID: 851950 **QC- Sample ID:** 413032-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/13/2011 **Date Prepared:** 04/13/2011 **Analyst:** BJM

Reporting Units: ug/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
1-Methylnaphthalene	<0.98	37	16	43	37	19	51	17	31-115	30	
2-Methylnaphthalene	<0.98	37	16	43	37	19	51	17	29-114	30	
Acenaphthene	<0.89	37	16	43	37	19	51	17	32-117	30	
Acenaphthylene	<0.89	37	17	46	37	20	54	16	30-119	30	
Anthracene	<1.4	37	18	49	37	20	54	11	48-114	30	
Benzo(a)anthracene	<1.2	37	22	59	37	23	62	4	32-141	30	
Benzo(a)pyrene	<2.2	37	20	54	37	20	54	0	51-119	30	
Benzo(b)fluoranthene	<2.1	37	24	65	37	24	65	0	38-131	30	
Benzo(g,h,i)perylene	<1.2	37	18	49	37	18	49	0	48-124	30	
Benzo(k)fluoranthene	<2.0	37	20	54	37	21	57	5	43-125	30	
Chrysene	<2.0	37	20	54	37	20	54	0	49-129	30	
Dibenz(a,h)anthracene	<1.0	37	20	54	37	19	51	5	39-134	30	
Fluoranthene	<1.6	37	19	51	37	21	57	10	35-126	30	
Fluorene	<1.5	37	17	46	37	20	54	16	42-111	30	
Indeno(1,2,3-c,d)Pyrene	<1.0	37	19	51	37	19	51	0	49-122	30	
Naphthalene	7.4	37	21	37	37	25	48	17	29-118	30	
Phenanthrene	<0.89	37	18	49	37	20	54	11	45-111	30	
Pyrene	<1.6	37	21	57	37	22	59	5	56-117	30	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories
Florida Testing Services, LLC

Form 3 - MS / MSD Recoveries

Project Name: Kerr McGee

Work Order # : 413032 **Project ID:** 103DX9017.0001.0154

Lab Batch ID: 852008 **QC- Sample ID:** 413032-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/14/2011 **Date Prepared:** 04/13/2011 **Analyst:** 4150

Reporting Units: mg/kg

RCRA Metals by SW846-6010B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Arsenic	4.06	113	105	89	109	100	88	5	75-125	20	
Barium	49.5	113	159	97	109	148	90	7	75-125	20	
Cadmium	0.761	113	98.2	86	109	93.2	85	5	75-125	20	
Chromium	31.5	113	120	78	109	117	78	3	75-125	20	
Lead	10.4	113	116	93	109	106	88	9	75-125	20	
Selenium	<1.08	113	99.8	88	109	95.2	87	5	75-125	20	
Silver	<0.0534	113	98.9	88	109	93.9	86	5	75-125	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Kerr McGee

Work Order #: 413032

Lab Batch #: 852013 **Project ID:** 103DX9017.0001.0154
Date Analyzed: 04/14/2011 12:53 **Date Prepared:** 04/13/2011 **Analyst:** 4150
QC- Sample ID: 413032-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Mercury by SW-846 7471A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Mercury	2.83	2.93	3	20	J

Lab Batch #: 851867
Date Analyzed: 04/13/2011 11:20 **Date Prepared:** 04/13/2011 **Analyst:** 4099
QC- Sample ID: 413032-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	11.5	11.6	1	20	

Lab Batch #: 852008
Date Analyzed: 04/14/2011 13:35 **Date Prepared:** 04/13/2011 **Analyst:** 4150
QC- Sample ID: 413032-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

RCRA Metals by SW846-6010B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Arsenic	4.06	3.03	29	20	FJ
Barium	49.5	51.6	4	20	
Cadmium	0.761	0.803	5	20	
Chromium	31.5	10.7	99	20	F
Lead	10.4	10.2	2	20	
Selenium	<1.01	<1.01	0	20	
Silver	<0.0499	<0.0499	0	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee

Sample Id: **600340-1-BLK** Matrix: **SOLID**

Lab Sample Id: **600340-1-BLK**

Analytical Method: RCRA Metals by SW846-6010B Prep Method: SW3050B

Date Analyzed: Apr-14-11 13:24 Analyst: 4150 Date Prep: Apr-13-11 11:29 Tech: ABA

Seq Number: 852008

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Arsenic	7440-38-2	U	5.00	0.617	mg/kg	U	1
Barium	7440-39-3	U	5.00	0.153	mg/kg	U	1
Cadmium	7440-43-9	U	0.500	0.0210	mg/kg	U	1
Chromium	7440-47-3	U	5.00	0.0960	mg/kg	U	1
Lead	7439-92-1	U	5.00	0.300	mg/kg	U	1
Selenium	7782-49-2	U	5.00	0.956	mg/kg	U	1
Silver	7440-22-4	U	5.00	0.0473	mg/kg	U	1

Project: Tronox - Columbus, MS Sampling

Version: 1.004

Blank Summary 413032

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee

Sample Id: **600343-1-BLK** Matrix: **SOLID**
Lab Sample Id: **600343-1-BLK**

Analytical Method: Mercury by SW-846 7471A Prep Method: SW7471P

Date Analyzed: Apr-14-11 12:40 Analyst: 4150 Date Prep: Apr-13-11 11:34 Tech: ABA
Seq Number: 852013

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
Mercury	7439-97-6	U	5.00	0.300	mg/kg	U	1

Project: Tronox - Columbus, MS Sampling

Version: 1.004

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee

Sample Id: **600368-1-BLK** Matrix: **SOLID**

Lab Sample Id: **600368-1-BLK**

Analytical Method: PAHs by SW8270C_SIM Prep Method: SW3545

Date Analyzed: Apr-13-11 19:10 Analyst: BJM Date Prep: Apr-13-11 14:00 Tech: 4118

Seq Number: 851950

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
1-Methylnaphthalene	90-12-0	U	6.7	0.88	ug/kg	U	1
2-Methylnaphthalene	91-57-6	U	6.7	0.88	ug/kg	U	1
Acenaphthene	83-32-9	U	6.7	0.80	ug/kg	U	1
Acenaphthylene	208-96-8	U	6.7	0.80	ug/kg	U	1
Anthracene	120-12-7	U	6.7	1.2	ug/kg	U	1
Benzo(a)anthracene	56-55-3	U	6.7	1.1	ug/kg	U	1
Benzo(a)pyrene	50-32-8	U	6.7	1.9	ug/kg	U	1
Benzo(b)fluoranthene	205-99-2	U	6.7	1.9	ug/kg	U	1
Benzo(g,h,i)perylene	191-24-2	U	6.7	1.0	ug/kg	U	1
Benzo(k)fluoranthene	207-08-9	U	6.7	1.8	ug/kg	U	1
Chrysene	218-01-9	U	6.7	1.8	ug/kg	U	1
Dibenz(a,h)anthracene	53-70-3	U	6.7	0.92	ug/kg	U	1
Fluoranthene	206-44-0	U	6.7	1.5	ug/kg	U	1
Fluorene	86-73-7	U	6.7	1.3	ug/kg	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	U	6.7	0.92	ug/kg	U	1
Naphthalene	91-20-3	U	6.7	0.92	ug/kg	U	1
Phenanthrene	85-01-8	U	6.7	0.80	ug/kg	U	1
Pyrene	129-00-0	U	6.7	1.5	ug/kg	U	1

Project: Tronox - Columbus, MS Sampling

Version: 1.004

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**
☐ 842 Cantwell, Corpus Christi, TX 78408 **361-8840371**

Serial #: 301870 Page 1 of 1

Company-City: Tetra Tech Duluth GA **Phone:** 678-775-3080

Lab Only: 413032

Project Name-Location: Kerr McGee ☐ Previously done at XENCO **Project ID:** 103DX9017.0001.0154

TAT: ASAP 5h 12h 24h (48h) 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: TX, AL, FL, GA, LA, (MS) NC, NJ, PA, SC, TN, UT Other

Proj. Manager (PM): ~~Brian Croft~~ Jessica Vickers

E-mail Results to ☒ PM and Jessica.Vickers@tetratech.com **Fax No:**

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.

Bill to: See contact

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name: Eric Turner **Signature:** [signature]

	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOCs: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VCO's PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCL PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals (RCRA-8) RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	% Moisture	TATASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Sample Clean-ups are pre-approved as needed	Remarks: Addn: Date Rcv. by: From:	
1	KM-BF-041211-01	4/12/11	1625	NA	S	✓		1	8	C	NA			/				/			/						1
2	KM-BF-041211-02	4/12/11	1630	NA	S	✓		1	8	C	NA			/				/			/						2
3																											3
4																											4
5																											5
6																											6
7																											7
8																											8
9																											9
10																											10

	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1	1) [signature] ET	4/12/11 1615	2) FedEx Columbus, MS	4/12/11 1615
2	3)		4)	
3	5)		6)	

Total Containers per COC: 2 Cooler Temp: 5° °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**), See Label (**L**), Other (**O**) ______
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other ______ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

Committed to Excellence in Service and Quality www.xenco.com

Notice: Signature of this document and relinquishment of these samples constitutes a valid purchase order from client company to Xenco Laboratories and its affiliates, subcontractors and assigns under Xenco's standard terms and conditions of service unless previously negotiated under a fully executed client contract.

FedEx. *USA Airbill* FedEx Tracking Number **823970273071**

Form I.D. No. 0200 — Recipient's Copy

1 From

Date 4/12/11

Sender's Name Eric Turner Phone 770 512-4705

Company Tetra Tech EM, Inc

Address 1955 Evergreen Blvd Bldg 200 Ste 300 Dept./Floor/Suite/Room

City Duluth State GA ZIP 30096

2 Your Internal Billing Reference

3 To

Recipient's Name Eben Buchanan Phone 770 419-5177

Company Xenco

Address 6017 Financial Dr.
To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

City Norcross State GA ZIP 30071

8239 7027 3071

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Envelope/Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation: _____

5 Packaging — * Declared value limit $500

- [ ] FedEx Envelope/Letter*
- [ ] FedEx Pak*
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] SUNDAY Delivery — Available for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain Recip. Acct. No.

Total Packages	Total Weight	Total Declared Value†	Total Charges
1		$ .00	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature *Sign to authorize delivery without obtaining signature.*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1·800·Go·FedEx® (800-463-3339)
Visit our Web site at www.fedex.com

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360

CUSTODY SEAL QEC Quality Environmental Containers 800-255-3950 • 304-255-3900
DATE 4/12/11
SIGNATURE

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: tetra tech

Date/ Time Received: 4/13/11 10:16

WO ID # : 413032

Initials of Sample Receipt Person: HS

Checklist completed by, date/time: HS 4/13/11 11:00

Acceptable Temperature Range: 0-6° C
Acceptable pH Range(s):
<2 for samples preserved with HNO3, HCL, H2SO4
>10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH

Temperature Measuring device used: AAL#62

Sample Receipt Checklist

#1 *Temperature of cooler(s)? # of Coolers 1 5.1 °C

					Comments
#2	*Shipping container in good condition?	(YES)	No	None	
#3	*Samples received on ice?	(YES)	No	N/A	Blue / Water
#4	*Custody Seals intact on shipping container/ cooler?	Yes	No	(N/A)	
#5	Custody Seals intact on sample bottles/ container?	Yes	No	(N/A)	
#6	*Custody Seals Signed and dated for Containers/coolers	Yes	No	(N/A)	
#7	*Chain of Custody present?	(YES)	No		
#8	Sample instructions complete on Chain of Custody?	(YES)	No		
#9	Any missing/extra samples?	Yes	(NO)		
#10	Chain of Custody signed when relinquished/ received?	(YES)	No		
#11	Chain of Custody agrees with sample label(s)?	(YES)	No		
#12	Container label(s) legible and intact?	(YES)	No		
#13	Sample matrix/ properties agree with Chain of Custody?	(YES)	No		
#14	Samples in proper container/ bottle?	(YES)	No		
#15	Samples properly preserved?	(YES)	No	(N/A)	See Attached Preservation Sheet If NO
#16	Sample container(s) intact?	(YES)	No		
#17	Sufficient sample amount for indicated test(s)?	(YES)	No		
#18	All samples received within hold time?	(YES)	No		
#19	Subcontract of sample(s)?	Yes	(NO)		
#20	VOC samples have zero headspace (less than 1/4 inch bubble)?	(YES)	No	(N/A)	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

pH Check: Date/Time: Analyst: pH Device/Lot Number: I0116498-4

Nonconformance Documentation

Contact: Contacted by: Date/ Time:

Regarding:

Corrective Action Taken:

Revision 1.0
Revision Date 11/3/10

Analytical Report 413211

for

Tetra Tech EM, Atlanta

Project Manager: Jessica Vickers

Kerr McGee - Columbus

103DX90170001.0154

15-APR-11

XENCO Laboratories
Florida Testing Services, LLC

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

ACCREDITED IN ACCORDANCE WITH nelac

6017 Financial Dr., Norcross, GA 30071
Ph:(770) 449-8800 Fax:(770) 449-5477

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

Table of Contents

15-APR-11

Project Manager: **Jessica Vickers**
Tetra Tech EM, Atlanta
1955 Evergreen Boulevard, Building 200, Suite 300
Duluth, GA 30096

Reference: XENCO Report No: **413211**
Kerr McGee - Columbus
Project Address: Columbus, Mississippi

Jessica Vickers:

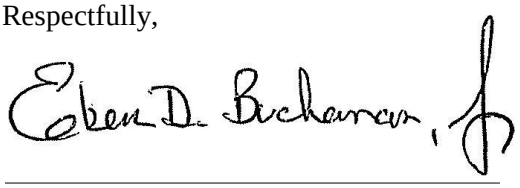
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 413211. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 413211 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,



Eben Buchanan
Project Manager

Sample Cross Reference 413211

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee - Columbus

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
KM-12462-B-CS-01	S	Apr-13-11 14:45	1 ft	413211-001

Project ID:	*103DX90170001.0154*	*Report Date:*	*15-APR-11*
Work Order Number:	*413211*	*Date Received:*	*04/14/2011*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

***** Outside XENCO's scope of NELAC Accreditation.

QEC
Quality Environmental Containers

C-QEC
CERTIFICATE OF QUALITY ENVIRONMENTAL COMPLIANCE

P.O. Box 1160 • Beaver, WV 25813 • 800-255-3950 • 304-255-3900

Lot Number **F-0-342-01AB** **9 oz. Clear Jar 2114-0009**

The above lot number has been specially cleaned using procedures specified by the USEPA to limit the concentration of the following organic compounds:

Compound	CRQL (µg/L)	Compound	CRQL (µg/L)
Phenol	5	2,4-Dinitrophenol	20
bis-(2-Chlorethyl)ether	5	4-Nitrophenol	20
2-Chlorophenol	5	Dibenzofuran	5
2-Methylphenol	5	2,4-Dinitrotoluene	5
2,2'-oxybis-(1-Chloropropane)	5	Diethylphthalate	5
4-Methylphenol	5	4-Chlorophenyl-phenylether	5
N-Nitroso-di-n-dipropylamine	5	Fluorene	5
Hexachloroethane	5	4-Nitroaniline	20
Nitrobenzene	5	4,6-Dinitro-2-methylphenol	20
Isophorone	5	N-Nitrosodiphenylamine	5
2-Nitrophenol	5	4-Bromophenyl-phenylether	5
2,4-Dimethylphenol	5	Hexachlorobenzene	5
bis-(2-Chloroethoxy)methane	5	Pentachlorophenol	20
2,4-Dichlorophenol	5	Phenanthrene	5
1,2,4-Trichlorobenzene	5	Anthracene	5
Naphthalene	5	Di-n-butylphthalate	5
4-Chloroaniline	5	Fluoranthene	5
Hexachlorobutadiene	5	Pyrene	5
4-Chloro-3-methylphenol	5	Butylbenzylphthalate	5
2-Methylnaphthalene	5	3,3'-Dichlorobenzidine	5
Hexachlorocyclopentadiene	5	Benz[a]anthracene	5
2,4,6-Trichlorophenol	5	Chyrsene	5
2,4,5-Trichlorophenol	20	bis-(2-Ethylhexyl)phthalate	5
2-Chloronaphthalene	5	Di-n-octylphthalate	5
2-Nitroaniline	20	Benzo[b]fluoranthene	5
Dimethylphthalate	5	Benzo[k]fluoranthene	5
Acenaphthylene	5	Benzo[a]pyrene	5
2,6-Dinitrotoluene	5	Indeno(1,2,3-cd)pyrene	5
3-Nitroaniline	20	Dibenz[a,h]anthracene	5
Acenaphthene	5	Benzo[g,h,i]perylene	5

The above lot number has also been specially cleaned using procedures specified by the USEPA to limit the concentration of the following pesticides/PCBs compounds:

Compound	CRQL (µg/L)	Compound	CRQL (µg/L)
alpha-BHC	0.01	4,4'-DDT	0.02
beta-BHC	0.01	Methoxychlor	0.10
delta-BHC	0.01	Endrin ketone	0.02
gamma-BHC (Lindane)	0.01	Endrin aldehyde	0.02
Heptachlor	0.01	alpha-Chlordane	0.01
Aldrin	0.01	gamma-chlordane	0.01
Heptachlor epoxide	0.01	Toxaphene	1.00
Endosulfan I	0.01	Aroclor-1016	0.20
Dieldrin	0.02	Aroclor-1221	0.20
4,4'-DDE	0.02	Aroclor-1232	0.40
Endrin	0.02	Aroclor-1242	0.20
EndosulfanII	0.02	Aroclor-1248	0.20
4,4'-DDD	0.02	Aroclor-1254	0.20
Endosulfan sulfate	0.02	Aroclor-1260	0.20

The above lot number has also been specially cleaned using procedures specified by the USEPA to limit the concentration of the following elements:

Element	CRQL (µg/L)	Element	CRQL (µg/L)
Aluminum	100	Manganese	10
Antimony	5	Mercury	0.2
Arsenic	2	Nickel	20
Barium	20	Potassium	750
Beryllium	1	Selenium	3
Cadmium	1	Silver	10
Calcium	500	Sodium	500
Chromium	10	Thallium	10
Cobalt	10	Vanadium	10
Copper	10	Zinc	20
Iron	500	Cyanide	10
Lead	2	Fluoride	200
Magnesium	500	Nitrate/Nitrite	100

6017 Financial Dr., Norcross, GA 30071
Ph:(770) 449-8800 Fax:(770) 449-5477

XENCO Laboratories
Bottle Order No: 3018

COPY

XENCO Laboratories

Client Information		Project Information		Delivery Information	
Client:	Tetra Tech EM, Atlanta	Date Requested:	04/08/2011	Date Required:	04/11/2011 00:00
Project Manager:	Jessica Vickers	Project Manager:	Eben Buchanan	Bill to Client:	N
Requested by:	Jessica Vickers	Project No:	10313	Delivery Method:	Delivered by Laboratory
Deliver to:	10955 Evergreen Blvd. Bld. 200 Suite 300 Duluth GA 300967	Project Name:	Tronox - Columbus, MS Samp	Airbill:	N/A
		Prepared by:	4/9/11 12:00	No. of Coolers:	1
Phone/Fax:	678-775-3080 / 678-775-3138				

No. Smp	Bottles	Total	Matrix	Analysis	Syze Type	Preservative	HT	Container Lot #	Preserv. Lot #	Comments
14	1	14	S	PAHs by SW8270C_SIM	9 OZ Straight-Side, W/M Glass Amber	Cool to <4 deg C	40 Days	F.0-342-01AB	N/A	One Jar for 8270 PAH-SIM and Moisture
0	1	0	S	Percent Moisture	4 OZ Straight-Side, W/M Glass Amber	Cool to <4 deg C	45 Days	—	—	One Jar for 8270 PAH-SIM and Moisture

Comments

Supplies

[X] COC(s) — [X] Label(s) [ ] Trip Blanks 1 No. of Sets

[X] Custody Seals

Directions / Notes To Drive

Deliver to Eric Turner at Tetra Tech, Include a copy of Container CofA and give a copy to PM for final report.

**** Please pack all samples with ice prior to shipment. Please inform your project manager if you can not achieve this.****

Certificate of Analytical Results 413211

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee - Columbus

Sample Id: KM-12462-B-CS-01 **Matrix:** Soil **Date Received:** Apr-14-11 10:18
Lab Sample Id: 413211-001 **Date Collected:** Apr-13-11 14:45 **Sample Depth:** 1 ft

Analytical Method: PAHs by SW8270C_SIM **Prep Method:** SW3545
Tech: 4118 **% Moisture:** 15.8
Analyst: BJM **Date Prep:** Apr-13-11 14:00 **Basis:** Dry Weight
Seq Number: 851950

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	BRL	7.9	1.0	ug/kg	04/14/11 16:27	U	1
2-Methylnaphthalene	91-57-6	BRL	7.9	1.0	ug/kg	04/14/11 16:27	U	1
Acenaphthene	83-32-9	BRL	7.9	0.95	ug/kg	04/14/11 16:27	U	1
Acenaphthylene	208-96-8	**3.2**	7.9	0.95	ug/kg	04/14/11 16:27	J	1
Anthracene	120-12-7	**6.3**	7.9	1.5	ug/kg	04/14/11 16:27	J	1
Benzo(a)anthracene	56-55-3	**21**	7.9	1.3	ug/kg	04/14/11 16:27		1
Benzo(a)pyrene	50-32-8	**22**	7.9	2.3	ug/kg	04/14/11 16:27		1
Benzo(b)fluoranthene	205-99-2	**27**	7.9	2.2	ug/kg	04/14/11 16:27		1
Benzo(g,h,i)perylene	191-24-2	**22**	7.9	1.2	ug/kg	04/14/11 16:27		1
Benzo(k)fluoranthene	207-08-9	**17**	7.9	2.1	ug/kg	04/14/11 16:27		1
Chrysene	218-01-9	**21**	7.9	2.1	ug/kg	04/14/11 16:27		1
Dibenz(a,h)anthracene	53-70-3	**4.7**	7.9	1.1	ug/kg	04/14/11 16:27	J	1
Fluoranthene	206-44-0	**36**	7.9	1.8	ug/kg	04/14/11 16:27		1
Fluorene	86-73-7	**2.8**	7.9	1.6	ug/kg	04/14/11 16:27	J	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**14**	7.9	1.1	ug/kg	04/14/11 16:27		1
Naphthalene	91-20-3	**3.9**	7.9	1.1	ug/kg	04/14/11 16:27	J	1
Phenanthrene	85-01-8	**21**	7.9	0.95	ug/kg	04/14/11 16:27		1
Pyrene	129-00-0	**34**	7.9	1.7	ug/kg	04/14/11 16:27		1

Analytical Method: Percent Moisture
Tech: 4153 **% Moisture:**
Analyst: 4099 **Basis:** Wet Weight
Seq Number: 852138

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Percent Moisture	TMOIST	**15.8**	1.00	1.00	%	04/14/11 10:00		1

Project: Tronox - Columbus, MS Sampling

Final 1.000

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: Kerr McGee - Columbus

Work Orders : 413211,

Project ID: 103DX90170001.0154

Lab Batch #: 851950 **Sample:** 600368-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: ug/kg **Date Analyzed:** 04/13/11 19:10

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	510	1000	51	9-125	
Nitrobenzene-d5	420	1000	42	20-151	
Terphenyl-D14	630	1000	63	11-134	

Lab Batch #: 851950 **Sample:** 600368-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: ug/kg **Date Analyzed:** 04/13/11 19:34

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	510	1000	51	9-125	
Nitrobenzene-d5	470	1000	47	20-151	
Terphenyl-D14	580	1000	58	11-134	

Lab Batch #: 851950 **Sample:** 413032-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/13/11 20:46

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	440	1000	44	9-125	
Nitrobenzene-d5	390	1000	39	20-151	
Terphenyl-D14	770	1000	77	11-134	

Lab Batch #: 851950 **Sample:** 413032-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/13/11 21:10

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	520	1000	52	9-125	
Nitrobenzene-d5	520	1000	52	20-151	
Terphenyl-D14	870	1000	87	11-134	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: Kerr McGee - Columbus

Work Orders : 413211,

Project ID: 103DX90170001.0154

Lab Batch #: 851950 **Sample:** 413211-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/14/11 16:27

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	500	1000	50	9-125	
Nitrobenzene-d5	590	1000	59	20-151	
Terphenyl-D14	1200	1000	120	11-134	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Blank Spike Recovery

Project Name: Kerr McGee - Columbus

Work Order #: 413211 **Project ID:** 103DX90170001.0154

Lab Batch #: 851950 **Sample:** 600368-1-BKS **Matrix:** Solid

Date Analyzed: 04/13/2011 **Date Prepared:** 04/13/2011 **Analyst:** BJM

Reporting Units: ug/kg **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

PAHs by SW8270C_SIM Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
1-Methylnaphthalene	<0.88	33	16	48	31-115	
2-Methylnaphthalene	<0.88	33	15	45	29-114	
Acenaphthene	<0.80	33	16	48	32-117	
Acenaphthylene	<0.80	33	15	45	30-119	
Anthracene	<1.2	33	16	48	48-114	
Benzo(a)anthracene	<1.1	33	20	61	32-141	
Benzo(a)pyrene	<1.9	33	17	52	51-119	
Benzo(b)fluoranthene	<1.9	33	20	61	38-131	
Benzo(g,h,i)perylene	<1.0	33	16	48	48-124	
Benzo(k)fluoranthene	<1.8	33	19	58	43-125	
Chrysene	<1.8	33	18	55	49-129	
Dibenz(a,h)anthracene	<0.92	33	17	52	39-134	
Fluoranthene	<1.5	33	17	52	35-126	
Fluorene	<1.3	33	16	48	42-111	
Indeno(1,2,3-c,d)Pyrene	<0.92	33	17	52	49-122	
Naphthalene	<0.92	33	15	45	29-118	
Phenanthrene	<0.80	33	17	52	45-111	
Pyrene	<1.5	33	19	58	56-117	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Final 1.000

XENCO Laboratories
Florida Testing Services, LLC

Form 3 - MS / MSD Recoveries

Project Name: Kerr McGee - Columbus

ACCREDITED IN ACCORDANCE WITH nelac

Work Order # : 413211 **Project ID:** 103DX90170001.0154

Lab Batch ID: 851950 **QC- Sample ID:** 413032-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/13/2011 **Date Prepared:** 04/13/2011 **Analyst:** BJM

Reporting Units: ug/kg

PAHs by SW8270C_SIM Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
1-Methylnaphthalene	<0.98	37	16	43	37	19	51	17	31-115	30	
2-Methylnaphthalene	<0.98	37	16	43	37	19	51	17	29-114	30	
Acenaphthene	<0.89	37	16	43	37	19	51	17	32-117	30	
Acenaphthylene	<0.89	37	17	46	37	20	54	16	30-119	30	
Anthracene	<1.4	37	18	49	37	20	54	11	48-114	30	
Benzo(a)anthracene	<1.2	37	22	59	37	23	62	4	32-141	30	
Benzo(a)pyrene	<2.2	37	20	54	37	20	54	0	51-119	30	
Benzo(b)fluoranthene	<2.1	37	24	65	37	24	65	0	38-131	30	
Benzo(g,h,i)perylene	<1.2	37	18	49	37	18	49	0	48-124	30	
Benzo(k)fluoranthene	<2.0	37	20	54	37	21	57	5	43-125	30	
Chrysene	<2.0	37	20	54	37	20	54	0	49-129	30	
Dibenz(a,h)anthracene	<1.0	37	20	54	37	19	51	5	39-134	30	
Fluoranthene	<1.6	37	19	51	37	21	57	10	35-126	30	
Fluorene	<1.5	37	17	46	37	20	54	16	42-111	30	
Indeno(1,2,3-c,d)Pyrene	<1.0	37	19	51	37	19	51	0	49-122	30	
Naphthalene	7.4	37	21	37	37	25	48	17	29-118	30	
Phenanthrene	<0.89	37	18	49	37	20	54	11	45-111	30	
Pyrene	<1.6	37	21	57	37	22	59	5	56-117	30	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee - Columbus

Sample Id: **600368-1-BLK** Matrix: **SOLID**

Lab Sample Id: **600368-1-BLK**

Analytical Method: PAHs by SW8270C_SIM Prep Method: SW3545

Date Analyzed: Apr-13-11 19:10 Analyst: BJM Date Prep: Apr-13-11 14:00 Tech: 4118

Seq Number: 851950

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
1-Methylnaphthalene	90-12-0	U	6.7	0.88	ug/kg	U	1
2-Methylnaphthalene	91-57-6	U	6.7	0.88	ug/kg	U	1
Acenaphthene	83-32-9	U	6.7	0.80	ug/kg	U	1
Acenaphthylene	208-96-8	U	6.7	0.80	ug/kg	U	1
Anthracene	120-12-7	U	6.7	1.2	ug/kg	U	1
Benzo(a)anthracene	56-55-3	U	6.7	1.1	ug/kg	U	1
Benzo(a)pyrene	50-32-8	U	6.7	1.9	ug/kg	U	1
Benzo(b)fluoranthene	205-99-2	U	6.7	1.9	ug/kg	U	1
Benzo(g,h,i)perylene	191-24-2	U	6.7	1.0	ug/kg	U	1
Benzo(k)fluoranthene	207-08-9	U	6.7	1.8	ug/kg	U	1
Chrysene	218-01-9	U	6.7	1.8	ug/kg	U	1
Dibenz(a,h)anthracene	53-70-3	U	6.7	0.92	ug/kg	U	1
Fluoranthene	206-44-0	U	6.7	1.5	ug/kg	U	1
Fluorene	86-73-7	U	6.7	1.3	ug/kg	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	U	6.7	0.92	ug/kg	U	1
Naphthalene	91-20-3	U	6.7	0.92	ug/kg	U	1
Phenanthrene	85-01-8	U	6.7	0.80	ug/kg	U	1
Pyrene	129-00-0	U	6.7	1.5	ug/kg	U	1

Project: Tronox - Columbus, MS Sampling

Version: 1.002

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**
☐ 842 Cantwell, Corpus Christi, TX 78408 **361-8840371**

Serial #: 301869 Page 1 of 1

Company-City: Tetra Tech- Atlanta **Phone:** 678-775-3080
Project Name-Location: Kerr McGee - Columbus ☐ Previously done at XENCO **Project ID:** 103DX9017.0001.0154
Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other **Proj. Manager (PM):** Jessica Vickers
E-mail Results to: Jessica.Vickers@tetratech.com ☐ PM and **Fax No:**
Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to: See Contract
Quote/Pricing: **P.O. No:** ☐ Call for P.O.
Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:
Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)
Sampler Name: Eric Turner **Signature:**

Lab Only: 41321

TAT: ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VCOs: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VCO's PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCL PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	% Moisture
1	KM-12462-B-CS-01	4/13/11	1445	1'	S	✓		1	8	C	NA			✓							✓
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

TAT ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d
Addn: PAH above mg/L W, mg/Kg S Highest Hit
Hold Samples (Surcharges will apply and are pre-approved)

Remarks
Sample Clean-ups are pre-approved as needed
Addn: Date Rcv. by: From:

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1) EST	4/13/11 1730	2) FedEx Columbus, MS	4/13/11 1730
3) fedex		4) Dano Logman	4/14/11 10:18
5)		6)	

Total Containers per COC: 1 Cooler Temp: 2 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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FedEx USA Airbill FedEx Tracking Number 823970273082

1 From [redacted]
Date 4/13/11
Sender's Name Eric Turner Phone 770 842-4705
Company Tetra Tech EM, Inc
Address 1955 Evergreen Blvd Bldg 200 Ste 300 Dept./Floor/Suite/Room
City Duluth State GA ZIP 30096

2 Your Internal Billing Reference 1030X 1017.0001.0154.3003

3 To
Recipient's Name Ebru Buch... Phone 770 449-5477
Company Xerox
Address 1017 F... Dr
To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.
Dept./Floor/Suite/Room
City Norcross State GA ZIP 30071

8239 7027 3082

Form I.D. No. 0200

4a Express Package Service
[X] FedEx Priority Overnight Next business morning
[ ] FedEx Sta... Next business...
[ ] FedEx 2Day* Second business day
[ ] FedEx Exp... Third business...

4b Express Freight Service
[ ] FedEx 1Day Freight* Next business day
[ ] FedEx 2D... Second busi...
* Call for Confirmation:

5 Packaging
[ ] FedEx Envelope/Letter*
[ ] FedEx P...

6 Special Handling
[ ] SATURDAY Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
[ ] SUNDAY Delivery Available for FedEx Priority Overnight to select ZIP co...
Does this shipment contain dangerous goods? One box must be checked.
[X] No
[ ] Yes As per attached Shipper's Declaration
[ ] Yes Shipper's Declaration not required
[ ] Dry Ice, 9, UN 1845 ___ x ___ kg
Dangerous Goods cannot be shipped in FedEx packaging.
[ ] Cargo Aircraft Only

QEC Quality Environmental Container 800-255-3950 • 304-255-3900
CUSTODY SEAL
DATE 4/13/11
SIGNATURE

7 Payment Bill to:
Enter FedEx Acct. No. or Credit Card No. below.
[X] Sender Acct. No. in Section 1 will be billed.
[ ] Recipient
[ ] Third Party
[ ] Credit Card
[ ] Cash/Check
[ ] Obtain Recip. Acct. No.
[redacted]

Total Packages	Total Weight	Total Declared Value†	Total Charges
1	12	$ .00	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature *Sign to authorize delivery without obtaining signature.*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1·800·Go·FedEx (800-463-3339)
Visit our Web site at www.fedex.com
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360

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech EM, Atlanta

Date/ Time Received: 4/14/11 10:18

WO ID #: 413211

Initials of Sample Receipt Person: DL

Checklist completed by, date/time: DL 4/14/11 11:00

Acceptable Temperature Range: 0-6° C

Acceptable pH Range(s):

<2 for samples preserved with HNO3, HCL, H2SO4

>10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH

Temperature Measuring device used: AAL#102

Sample Receipt Checklist

					Comments
#1	*Temperature of cooler(s)? # of Coolers 1	2 / / / °C			
#2	*Shipping container in good condition?	(YES)	No	None	
#3	*Samples received on ice?	(YES)	No	N/A	Blue / Water
#4	*Custody Seals intact on shipping container/ cooler?	(Yes)	No	N/A	
#5	Custody Seals intact on sample bottles/ container?	Yes	No	(N/A)	
#6	*Custody Seals Signed and dated for Containers/coolers	(Yes)	No	N/A	
#7	*Chain of Custody present?	(YES)	No		
#8	Sample instructions complete on Chain of Custody?	(YES)	No		
#9	Any missing/extra samples?	Yes	(NO) EMB 4/14/2011		VOA TRIP Blanks
#10	Chain of Custody signed when relinquished/ received?	(YES)	No		
#11	Chain of Custody agrees with sample label(s)?	(YES)	No.		
#12	Container label(s) legible and intact?	(YES)	No		
#13	Sample matrix/ properties agree with Chain of Custody?	(YES)	No		
#14	Samples in proper container/ bottle?	(YES)	No		
#15	Samples properly preserved?	(YES)	No	N/A	See Attached Preservation Sheet If NO
#16	Sample container(s) intact?	(YES)	No		
#17	Sufficient sample amount for indicated test(s)?	(YES)	No		
#18	All samples received within hold time?	(YES)	No		
#19	Subcontract of sample(s)?	Yes	(NO)		
#20	VOC samples have zero headspace (less than 1/4 inch bubble)?	(YES)	No	N/A	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

pH Check: Date/Time:_____ Analyst:_____ pH Device/Lot Number: 101164498-4

Nonconformance Documentation

Contact: J. Vickers Contacted by: E. Buchanan Date/ Time: 4/14/2011

Regarding: Rush not indicated on CoC. VOA Trip Blanks in Cooler but NO VOA SAMPLES Only PAH-SIM & Moisture Requested on COC EMB 4/14/2011

Corrective Action Taken: Assume 48-Hr TAT until further Notice, Jessica Vickers will Check with Field Person regarding VOA TB. EMB 4/14/2011

VOA Trip Blank not Needed - EMB 4/15/2011 per J. Vickers

Revision 1.0
Revision Date 11/3/10

Final 1.000

Analytical Report 413709

for

Tetra Tech EM, Atlanta

Project Manager: Jessica Vickers

Kerr McGee-Columbus

103DX9017.0001.0154

20-APR-11

XENCO Laboratories
Florida Testing Services, LLC

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

ACCREDITED IN ACCORDANCE WITH nelac

6017 Financial Dr., Norcross, GA 30071
Ph:(770) 449-8800 Fax:(770) 449-5477

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

Table of Contents

20-APR-11

Project Manager: **Jessica Vickers**
Tetra Tech EM, Atlanta
1955 Evergreen Boulevard, Building 200, Suite 300
Duluth, GA 30096

Reference: XENCO Report No: **413709**
Kerr McGee-Columbus
Project Address: Columbus, Mississippi

Jessica Vickers:

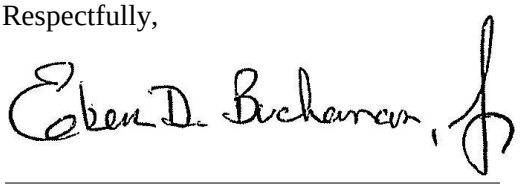
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 413709. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 413709 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,



Eben Buchanan
Project Manager

Sample Cross Reference 413709

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee-Columbus

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
KM-12624-DRIVEWAY	S	Apr-18-11 11:05	11 In	413709-001
KM-12624-CS-01	S	Apr-18-11 15:45	1 ft	413709-002

Project ID:	*103DX9017.0001.0154*	*Report Date:*	*20-APR-11*
Work Order Number:	*413709*	*Date Received:*	*04/19/2011*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-852713 PAHs by SW8270C_SIM

All batch QC samples met quality control objectives for the parameters associated with this work order.

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

***** Outside XENCO's scope of NELAC Accreditation.

Certificate of Analytical Results 413709

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee-Columbus

Sample Id: KM-12624-DRIVEWAY **Matrix:** Soil **Date Received:** Apr-19-11 09:26
Lab Sample Id: 413709-001 **Date Collected:** Apr-18-11 11:05 **Sample Depth:** 11 In

Analytical Method: PAHs by SW8270C_SIM **Prep Method:** SW3545
Tech: TUE **% Moisture:** 4.35
Analyst: BJM **Date Prep:** Apr-19-11 12:00 **Basis:** Dry Weight
Seq Number: 852713

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	**2.1**	6.9	0.91	ug/kg	04/19/11 17:39	J	1
2-Methylnaphthalene	91-57-6	**3.8**	6.9	0.91	ug/kg	04/19/11 17:39	J	1
Acenaphthene	83-32-9	BRL	6.9	0.83	ug/kg	04/19/11 17:39	U	1
Acenaphthylene	208-96-8	**28**	6.9	0.83	ug/kg	04/19/11 17:39		1
Anthracene	120-12-7	**27**	6.9	1.3	ug/kg	04/19/11 17:39		1
Benzo(a)anthracene	56-55-3	**28**	6.9	1.1	ug/kg	04/19/11 17:39		1
Benzo(a)pyrene	50-32-8	**38**	6.9	2.0	ug/kg	04/19/11 17:39		1
Benzo(b)fluoranthene	205-99-2	**75**	14	3.9	ug/kg	04/19/11 19:15	D	2
Benzo(g,h,i)perylene	191-24-2	**41**	6.9	1.1	ug/kg	04/19/11 17:39		1
Benzo(k)fluoranthene	207-08-9	**43**	6.9	1.8	ug/kg	04/19/11 17:39		1
Chrysene	218-01-9	**47**	6.9	1.8	ug/kg	04/19/11 17:39		1
Dibenz(a,h)anthracene	53-70-3	**9.7**	6.9	0.95	ug/kg	04/19/11 17:39		1
Fluoranthene	206-44-0	**54**	14	3.1	ug/kg	04/19/11 19:15	D	2
Fluorene	86-73-7	**2.8**	6.9	1.4	ug/kg	04/19/11 17:39	J	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**34**	6.9	0.95	ug/kg	04/19/11 17:39		1
Naphthalene	91-20-3	**4.8**	6.9	0.95	ug/kg	04/19/11 17:39	J	1
Phenanthrene	85-01-8	**18**	6.9	0.83	ug/kg	04/19/11 17:39		1
Pyrene	129-00-0	**53**	6.9	1.5	ug/kg	04/19/11 17:39		1

Analytical Method: Percent Moisture
Tech: 4099 **% Moisture:**
Analyst: ANI **Basis:** Wet Weight
Seq Number: 852710

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Percent Moisture	TMOIST	**4.35**	1.00	1.00	%	04/19/11 11:40		1

Project: Tronox - Columbus, MS Sampling

Final 1.000

Certificate of Analytical Results 413709

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee-Columbus

Sample Id: KM-12624-CS-01 **Matrix:** Soil **Date Received:** Apr-19-11 09:26
Lab Sample Id: 413709-002 **Date Collected:** Apr-18-11 15:45 **Sample Depth:** 1 ft

Analytical Method: PAHs by SW8270C_SIM **Prep Method:** SW3545
Tech: TUE **% Moisture:** 13.8
Analyst: BJM **Date Prep:** Apr-19-11 12:00 **Basis:** Dry Weight
Seq Number: 852713

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1-Methylnaphthalene	90-12-0	**3.4**	7.6	1.0	ug/kg	04/19/11 18:51	J	1
2-Methylnaphthalene	91-57-6	**7.6**	7.6	1.0	ug/kg	04/19/11 18:51	J	1
Acenaphthene	83-32-9	**8.0**	7.6	0.92	ug/kg	04/19/11 18:51		1
Acenaphthylene	208-96-8	**370**	76	9.2	ug/kg	04/19/11 21:15	D	10
Anthracene	120-12-7	**360**	76	14	ug/kg	04/19/11 21:15	D	10
Benzo(a)anthracene	56-55-3	**320**	76	13	ug/kg	04/19/11 21:15	D	10
Benzo(a)pyrene	50-32-8	**500**	76	22	ug/kg	04/19/11 21:15	D	10
Benzo(b)fluoranthene	205-99-2	**610**	76	22	ug/kg	04/19/11 21:15	D	10
Benzo(g,h,i)perylene	191-24-2	**380**	76	12	ug/kg	04/19/11 21:15	D	10
Benzo(k)fluoranthene	207-08-9	**460**	76	20	ug/kg	04/19/11 21:15	D	10
Chrysene	218-01-9	**390**	76	20	ug/kg	04/19/11 21:15	D	10
Dibenz(a,h)anthracene	53-70-3	**110**	15	2.1	ug/kg	04/19/11 20:51	D	2
Fluoranthene	206-44-0	**390**	76	17	ug/kg	04/19/11 21:15	D	10
Fluorene	86-73-7	**18**	7.6	1.5	ug/kg	04/19/11 18:51		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	**400**	76	11	ug/kg	04/19/11 21:15	D	10
Naphthalene	91-20-3	**16**	7.6	1.1	ug/kg	04/19/11 18:51		1
Phenanthrene	85-01-8	**46**	7.6	0.92	ug/kg	04/19/11 18:51		1
Pyrene	129-00-0	**460**	76	17	ug/kg	04/19/11 21:15	D	10

Analytical Method: Percent Moisture
Tech: 4099 **% Moisture:**
Analyst: ANI **Basis:** Wet Weight
Seq Number: 852710

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Percent Moisture	TMOIST	**13.8**	1.00	1.00	%	04/19/11 11:40		1

Project: Tronox - Columbus, MS Sampling

Final 1.000

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: Kerr McGee-Columbus

Work Orders : 413709,

Project ID: 103DX9017.0001.0154

Lab Batch #: 852713 **Sample:** 600817-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: ug/kg **Date Analyzed:** 04/19/11 16:51

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	680	1000	68	9-125	
Nitrobenzene-d5	500	1000	50	20-151	
Terphenyl-D14	840	1000	84	11-134	

Lab Batch #: 852713 **Sample:** 600817-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: ug/kg **Date Analyzed:** 04/19/11 17:15

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	580	1000	58	9-125	
Nitrobenzene-d5	440	1000	44	20-151	
Terphenyl-D14	650	1000	65	11-134	

Lab Batch #: 852713 **Sample:** 413709-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/19/11 17:39

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	520	1000	52	9-125	
Nitrobenzene-d5	210	1000	21	20-151	
Terphenyl-D14	650	1000	65	11-134	

Lab Batch #: 852713 **Sample:** 413709-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/19/11 18:03

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	590	1000	59	9-125	
Nitrobenzene-d5	230	1000	23	20-151	
Terphenyl-D14	740	1000	74	11-134	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: Kerr McGee-Columbus

Work Orders : 413709,

Project ID: 103DX9017.0001.0154

Lab Batch #: 852713 **Sample:** 413709-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/19/11 18:27

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	610	1000	61	9-125	
Nitrobenzene-d5	240	1000	24	20-151	
Terphenyl-D14	730	1000	73	11-134	

Lab Batch #: 852713 **Sample:** 413709-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/19/11 18:51

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	580	1000	58	9-125	
Nitrobenzene-d5	680	1000	68	20-151	
Terphenyl-D14	670	1000	67	11-134	

Lab Batch #: 852713 **Sample:** 413709-001 / DL **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/19/11 19:15

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	260	500	52	9-125	
Nitrobenzene-d5	110	500	22	20-151	
Terphenyl-D14	310	500	62	11-134	

Lab Batch #: 852713 **Sample:** 413709-002 / DL **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/19/11 20:51

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	290	500	58	9-125	
Nitrobenzene-d5	350	500	70	20-151	
Terphenyl-D14	360	500	72	11-134	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories
Florida Testing Services, LLC

Form 2 - Surrogate Recoveries

Project Name: Kerr McGee-Columbus

Work Orders : 413709,

Project ID: 103DX9017.0001.0154

Lab Batch #: 852713 **Sample:** 413709-002 / DL **Batch:** 1 **Matrix:** Soil

Units: ug/kg **Date Analyzed:** 04/19/11 21:15

SURROGATE RECOVERY STUDY

PAHs by SW8270C_SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	70.0	100	70	9-125	
Nitrobenzene-d5	70.0	100	70	20-151	
Terphenyl-D14	90.0	100	90	11-134	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Blank Spike Recovery

Project Name: Kerr McGee-Columbus

Work Order #: 413709 **Project ID:** 103DX9017.0001.0154

Lab Batch #: 852713 **Sample:** 600817-1-BKS **Matrix:** Solid

Date Analyzed: 04/19/2011 **Date Prepared:** 04/19/2011 **Analyst:** BJM

Reporting Units: ug/kg **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

PAHs by SW8270C_SIM Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
1-Methylnaphthalene	<0.88	33	18	55	31-115	
2-Methylnaphthalene	<0.88	33	17	52	29-114	
Acenaphthene	<0.80	33	17	52	32-117	
Acenaphthylene	<0.80	33	16	48	30-119	
Anthracene	<1.2	33	17	52	48-114	
Benzo(a)anthracene	<1.1	33	16	48	32-141	
Benzo(a)pyrene	<1.9	33	18	55	51-119	
Benzo(b)fluoranthene	<1.9	33	20	61	38-131	
Benzo(g,h,i)perylene	<1.0	33	17	52	48-124	
Benzo(k)fluoranthene	<1.8	33	21	64	43-125	
Chrysene	<1.8	33	19	58	49-129	
Dibenz(a,h)anthracene	<0.92	33	17	52	39-134	
Fluoranthene	<1.5	33	19	58	35-126	
Fluorene	<1.3	33	18	55	42-111	
Indeno(1,2,3-c,d)Pyrene	<0.92	33	17	52	49-122	
Naphthalene	<0.92	33	16	48	29-118	
Phenanthrene	<0.80	33	17	52	45-111	
Pyrene	<1.5	33	19	58	56-117	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Final 1.000

XENCO Laboratories
Florida Testing Services, LLC

Form 3 - MS / MSD Recoveries

Project Name: Kerr McGee-Columbus

ACCREDITED IN ACCORDANCE WITH nelac

Work Order # : 413709 **Project ID:** 103DX9017.0001.0154

Lab Batch ID: 852713 **QC- Sample ID:** 413709-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/19/2011 **Date Prepared:** 04/19/2011 **Analyst:** BJM

Reporting Units: ug/kg

PAHs by SW8270C_SIM Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
1-Methylnaphthalene	2.1	35	24	63	35	24	63	0	31-115	30	
2-Methylnaphthalene	3.8	35	27	66	35	27	66	0	29-114	30	
Acenaphthene	<0.84	35	22	63	35	23	66	4	32-117	30	
Acenaphthylene	28	35	52	69	35	57	83	9	30-119	30	
Anthracene	27	35	51	69	35	60	94	16	48-114	30	
Benzo(a)anthracene	28	35	56	80	35	63	100	12	32-141	30	
Benzo(a)pyrene	38	35	62	69	35	63	71	2	51-119	30	
Benzo(b)fluoranthene	70	35	110	114	35	110	114	0	38-131	30	
Benzo(g,h,i)perylene	41	35	60	54	35	60	54	0	48-124	30	
Benzo(k)fluoranthene	43	35	67	69	35	72	83	7	43-125	30	
Chrysene	47	35	70	66	35	83	103	17	49-129	30	
Dibenz(a,h)anthracene	9.7	35	32	64	35	32	64	0	39-134	30	
Fluoranthene	57	35	85	80	35	90	94	6	35-126	30	
Fluorene	2.8	35	30	78	35	27	69	11	42-111	30	
Indeno(1,2,3-c,d)Pyrene	34	35	55	60	35	55	60	0	49-122	30	
Naphthalene	4.8	35	25	58	35	26	61	4	29-118	30	
Phenanthrene	18	35	42	69	35	42	69	0	45-111	30	
Pyrene	53	35	82	83	35	86	94	5	56-117	30	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Kerr McGee-Columbus

Work Order #: 413709

Lab Batch #: 852710 **Project ID:** 103DX9017.0001.0154

Date Analyzed: 04/19/2011 11:40 **Date Prepared:** 04/19/2011 **Analyst:** ANI

QC- Sample ID: 413709-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	4.35	4.36	0	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Tetra Tech EM, Atlanta, Duluth, GA

Kerr McGee-Columbus

Sample Id: **600817-1-BLK** Matrix: **SOLID**

Lab Sample Id: **600817-1-BLK**

Analytical Method: PAHs by SW8270C_SIM Prep Method: SW3545

Date Analyzed: Apr-19-11 16:51 Analyst: BJM Date Prep: Apr-19-11 12:00 Tech: TUE

Seq Number: 852713

Parameter	Cas Number	Result	PQL	MDL	Units	Flag	Dil
1-Methylnaphthalene	90-12-0	U	6.7	0.88	ug/kg	U	1
2-Methylnaphthalene	91-57-6	U	6.7	0.88	ug/kg	U	1
Acenaphthene	83-32-9	U	6.7	0.80	ug/kg	U	1
Acenaphthylene	208-96-8	U	6.7	0.80	ug/kg	U	1
Anthracene	120-12-7	U	6.7	1.2	ug/kg	U	1
Benzo(a)anthracene	56-55-3	U	6.7	1.1	ug/kg	U	1
Benzo(a)pyrene	50-32-8	U	6.7	1.9	ug/kg	U	1
Benzo(b)fluoranthene	205-99-2	U	6.7	1.9	ug/kg	U	1
Benzo(g,h,i)perylene	191-24-2	U	6.7	1.0	ug/kg	U	1
Benzo(k)fluoranthene	207-08-9	U	6.7	1.8	ug/kg	U	1
Chrysene	218-01-9	U	6.7	1.8	ug/kg	U	1
Dibenz(a,h)anthracene	53-70-3	U	6.7	0.92	ug/kg	U	1
Fluoranthene	206-44-0	U	6.7	1.5	ug/kg	U	1
Fluorene	86-73-7	U	6.7	1.3	ug/kg	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	U	6.7	0.92	ug/kg	U	1
Naphthalene	91-20-3	U	6.7	0.92	ug/kg	U	1
Phenanthrene	85-01-8	U	6.7	0.80	ug/kg	U	1
Pyrene	129-00-0	U	6.7	1.5	ug/kg	U	1

Project: Tronox - Columbus, MS Sampling

Version: 1.001

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**
☐ 842 Cantwell, Corpus Christi, TX 78408 **361-8840371**

Serial #: 301871 Page 1 of 1

Company-City: Tetra Tech-Atlanta **Phone:** 678-775-3080
Project Name-Location: Kerr McGee-Columbus ☐ Previously done at XENCO **Project ID:** 103DX9017.0001.0154
Proj. State: TX, AL, FL, GA, LA, (MS) NC, NJ, PA, SC, TN, UT Other
Proj. Manager (PM): Jessica Vickers
E-mail Results to: ☒PM and Eric Turner **Fax No:** eric.turner@tetratech.com, jessica.vickers@tetratech.com
Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to: See contact
Quote/Pricing: **P.O. No:** ☐ Call for P.O.
Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:
Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)
Sampler Name: Eric Turner **Signature:**

Lab Only: WO# 413709

TAT: ASAP 5h 12h (24h) (48h) 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

#	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VCOs: Full-List BTEX-MTBE EtOH Oxyg VOH VOAs	VCO's PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCL PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	% Moisture
1	KM-12624-DRIVEWAY	4/18/11	1105	3"	S	✓		1	8	C	NA			24-HOUR TAT							
2																					
3	KM-12624-CS-01	4/18/11	1545	1'	S	✓		1	8	C	C			✓							✓
4																					
5																					
6																					
7																					
8																					
9																					
10																					

48-HOUR TAT

TAT ASAP	5h	12h	24h	48h	3d	5d	7d	10d	21d

Addn: PAH above mg/L W, mg/Kg S Highest Hit
Hold Samples (Surcharges will apply and are pre-approved)
Sample Clean-ups are pre-approved as needed

Remarks

Addn: Date Rcv. by: From:

	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1	1) EST	4/18/11 1745	2) FedEx Columbus, MS	4/18/11 1745
2	3) Fed Ex		4) Dan Cagnas	4/19/11 9:26
3	5)		6)	

Total Containers per COC: Cooler Temp: °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Committed to Excellence in Service and Quality *www.xenco.com*

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

FedEx USA Airbill 820803233470

0200 Form I.D. No.

FedEx Retrieval Copy

1 From

Date 4/18/11 Sender's FedEx Account Number 180408061

Sender's Name Eric Turner Phone 770 842 4705

Company Tetra Tech EM, Inc.

Address 1955 Evergreen Blvd Bldg 200 Ste 300 Dept/Floor/Suite/Room

City Duluth State GA ZIP 30096

2 Your Internal Billing Reference 103DX1917.0001.0154.3003

3 To

Recipient's Name E[illegible] B[illegible] Phone 770449-5477

Company Xerox

Address 6017 F[illegible] Dr Dept/Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

To "HOLD" at FedEx location, print FedEx address here.

City Norcross State GA ZIP 30071

8208 0323 3470

4a Express Package Service *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

1 [X] FedEx Priority Overnight Next business morning
5 [ ] FedEx Standard Overnight Next business afternoon
6 [ ] FedEx First Overnight Earliest next business morning delivery to select locations
3 [ ] FedEx 2Day* Second business day
20 [ ] FedEx Express Saver* Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

7 [ ] FedEx 1Day Freight* Next business day
8 [ ] FedEx 2Day Freight Second business day
83 [ ] FedEx 3Day Freight Third business day

* Call for Confirmation:

5 Packaging * Declared value limit $500

6 [ ] FedEx Letter*
2 [ ] FedEx Pak
1 [X] Other Pkg.

6 Special Handling

3 [ ] Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
33 [ ] Sunday Delivery Available for FedEx Priority Overnight to select ZIP codes

Does this shipment contain dangerous goods? One box must be checked.

[X] No
4 [ ] Yes As per attached Shipper's Declaration
[ ] Yes Shipper's Declaration not required

Dangerous Goods cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No.

1 [X] Sender Acct. No. in Section 1 will be billed.
2 [ ] Recipient
3 [ ]

FedEx Acct. No. Credit Card No.

Total Packages 1 Total Weight

† Our liability is limited to $100 unless you declare a higher

8 Release Signature Sign to authorize delivery

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Rev. Date 11/98 • Part #154815 • ©1994-98 FedEx • PRINTED IN U.S.A. GBFE 5/99

360

CUSTODY SEAL
QEC Quality Environmental 800-255-3950 • 3
DATE 4/18/11
SIGNATURE

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TetraTech EM Atlanta

Date/ Time Received: 4/19/11 9:26

WO ID # : 413709

Initials of Sample Receipt Person: DL

Checklist completed by, date/time: DL 4/19/11 9:50

Acceptable Temperature Range: 0-6° C
Acceptable pH Range(s):
<2 for samples preserved with HNO3, HCL, H2SO4
>10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH

Temperature Measuring device used: AAL#602

Sample Receipt Checklist

#1 *Temperature of cooler(s)? # of Coolers 1 2.5 / / / °C

					Comments
#2	*Shipping container in good condition?	(YES)	No	None	
#3	*Samples received on ice?	(YES)	No	N/A	Blue / Water
#4	*Custody Seals intact on shipping container/ cooler?	(Yes)	No	N/A	
#5	Custody Seals intact on sample bottles/ container?	Yes	No	(N/A)	
#6	*Custody Seals Signed and dated for Containers/coolers	(Yes)	No	N/A	
#7	*Chain of Custody present?	(YES)	No		
#8	Sample instructions complete on Chain of Custody?	(YES)	No		
#9	Any missing/extra samples?	Yes	(NO)		
#10	Chain of Custody signed when relinquished/ received?	(YES)	No		
#11	Chain of Custody agrees with sample label(s)?	(YES)	No		
#12	Container label(s) legible and intact?	(YES)	No		
#13	Sample matrix/ properties agree with Chain of Custody?	(YES)	No		
#14	Samples in proper container/ bottle?	(YES)	No		
#15	Samples properly preserved?	YES	No	(N/A)	See Attached Preservation Sheet If NO
#16	Sample container(s) intact?	(YES)	No		
#17	Sufficient sample amount for indicated test(s)?	(YES)	No		
#18	All samples received within hold time?	(YES)	No		
#19	Subcontract of sample(s)?	Yes	(NO)		
#20	VOC samples have zero headspace (less than 1/4 inch bubble)?	YES	No	(N/A)	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

pH Check: Date/Time:_____ Analyst:_____ pH Device/Lot Number: I0116498-4

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

Revision 1.0
Revision Date 11/3/10