'06 TA-21

chamberlain, kathryn, NMENV

From: chamberlain, kathryn, NMENV
Sent: Monday, October 02, 2006 2:49 PM
To: 'Roy Bohn'
Cc: Mark; Darlene
Subject: RE: PCB data for 21-013(c)

Roy,

Based on the PCB/SVOC data provided, NMED will not require additional PCB sampling at SWMU 21-013(c). If you have any questions please let me know.
Thanks,
Katie

-----Original Message-----
From: Roy Bohn [mailto:royb@lanl.gov]
Sent: Monday, October 02, 2006 2:06 PM
To: chamberlain, kathryn, NMENV
Subject: PCB data for 21-013(c)

Hi Katie,

Attached is the PCB/SVOC analytical data (see page 1 and page 6 for PCB data) for two samples collected at 21-013(c). Based on the data (all non-detects) LANL is not planning on performing additional PCB sampling at this site. Both samples were collected from Location 4. Sample RE-21-06-68292 was collected at 0-0.5 ft. bgs. Sample RE-21-06-68293 was collected at 2.5-3 ft. bgs.

11009

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Los Alamos National Laboratories
Address : PO Box 1663
TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL ER Project**

Report Date: September 6, 2006

Client Sample ID: RE21-06-68292
Sample ID: 168251001
Matrix: Soil
Collect Date: 26-JUL-06 09:46
Receive Date: 01-AUG-06
Collector: Client
Moisture: 4.72%

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
LC-MS/MS Explosives Federal										
SW846 8321A Modified Explosives by LC-MS/MS										
2,4-Diamino-6-nitrotoluene	U	ND	500	2000	ug/kg	2	LXS1 08/30/06	1904	553950	1
2,6-Diamino-4-nitrotoluene	U	ND	500	2000	ug/kg	2				
3,5-Dinitroaniline	U	ND	250	1000	ug/kg	2				
TATB	U	ND	300	1000	ug/kg	2				
tris(o-cresyl) phosphate	U	ND	250	1000	ug/kg	2				
1,3,5-Trinitrobenzene	U	ND	100	500	ug/kg	2	MAP 08/23/06	0118	553950	2
2,4,6-Trinitrotoluene	U	ND	100	500	ug/kg	2				
2,4-Dinitrotoluene	U	ND	100	500	ug/kg	2				
2,6-Dinitrotoluene	U	ND	100	500	ug/kg	2				
2-Amino-4,6-dinitrotoluene	U	ND	150	500	ug/kg	2				
4-Amino-2,6-dinitrotoluene	U	ND	100	500	ug/kg	2				
HMX	U	ND	150	500	ug/kg	2				
Nitrobenzene	U	ND	150	500	ug/kg	2				
PETN	U	ND	730	1000	ug/kg	2				
RDX	U	ND	100	500	ug/kg	2				
Tetryl	U	ND	100	500	ug/kg	2				
1,3-Dinitrobenzene	U	ND	150	500	ug/kg	2				
3-Nitrotoluene	U	ND	100	500	ug/kg	2				
2-Nitrotoluene	U	ND	100	500	ug/kg	2				
4-Nitrotoluene	U	ND	100	500	ug/kg	2				
Semi-Volatiles-PCB Federal										
8082										
Aroclor-1016	U	ND	11.7	35.0	ug/kg	10	KXY1 08/11/06	1639	555288	3
Aroclor-1221	U	ND	11.7	35.0	ug/kg	10				
Aroclor-1232	U	ND	11.7	35.0	ug/kg	10				
Aroclor-1242	U	ND	11.7	35.0	ug/kg	10				
Aroclor-1248	U	ND	11.7	35.0	ug/kg	10				
Aroclor-1254	U	ND	11.7	35.0	ug/kg	10				
Aroclor-1260	U	ND	11.7	35.0	ug/kg	10				
Semi-volatile Mass spec Organics Federal										
3550C/8270C BNA Soil Federal										
1,2,4-Trichlorobenzene	U	ND	70.0	350	ug/kg	1	JMB3 08/11/06	2331	554472	4
1,2-Dichlorobenzene	U	ND	70.0	350	ug/kg	1				
Azobenzene	U	ND	70.0	350	ug/kg	1				
1,3-Dichlorobenzene	U	ND	70.0	350	ug/kg	1				
1,4-Dichlorobenzene	U	ND	70.0	350	ug/kg	1				

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Report Date: September 6, 2006

Client Sample ID: RE21-06-68292
Sample ID: 168251001

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal										
3550C/8270C BNA Soil Federal										
2,4,5-Trichlorophenol	U	ND	70.0	350	ug/kg	1				
2,4,6-Trichlorophenol	U	ND	70.0	350	ug/kg	1				
2,4-Dichlorophenol	U	ND	70.0	350	ug/kg	1				
2,4-Dimethylphenol	U	ND	70.0	350	ug/kg	1				
2,4-Dinitrophenol	U	ND	133	700	ug/kg	1				
2,4-Dinitrotoluene	U	ND	35.0	350	ug/kg	1				
2,6-Dinitrotoluene	U	ND	35.0	350	ug/kg	1				
2-Chloronaphthalene	U	ND	12.2	35.0	ug/kg	1				
2-Chlorophenol	U	ND	70.0	350	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	ND	70.0	350	ug/kg	1				
2-Methylnaphthalene	U	ND	7.00	35.0	ug/kg	1				
2-Nitrophenol	U	ND	35.0	350	ug/kg	1				
3,3'-Dichlorobenzidine	U	ND	105	350	ug/kg	1				
4-Bromophenylphenylether	U	ND	35.0	350	ug/kg	1				
4-Chloro-3-methylphenol	U	ND	35.0	350	ug/kg	1				
4-Chloroaniline	U	ND	70.0	350	ug/kg	1				
4-Chlorophenylphenylether	U	ND	35.0	350	ug/kg	1				
4-Nitrophenol	U	ND	70.0	350	ug/kg	1				
Acenaphthene	J	14.5	11.7	35.0	ug/kg	1				
Acenaphthylene	U	ND	10.5	35.0	ug/kg	1				
Aniline	U	ND	122	350	ug/kg	1				
Anthracene	J	23.2	7.00	35.0	ug/kg	1				
Benzo(a)anthracene		74.5	10.5	35.0	ug/kg	1				
Benzo(a)pyrene		79.2	10.5	35.0	ug/kg	1				
Benzo(b)fluoranthene		133	10.5	35.0	ug/kg	1				
Benzo(ghi)perylene		58.3	10.5	35.0	ug/kg	1				
Benzo(k)fluoranthene	U	ND	10.5	35.0	ug/kg	1				
Benzoic acid	U	ND	175	700	ug/kg	1				
Benzyl alcohol	U	ND	105	350	ug/kg	1				
Butylbenzylphthalate	U	ND	70.0	350	ug/kg	1				
Chrysene		85.3	10.5	35.0	ug/kg	1				
Di-n-butylphthalate	U	ND	35.0	350	ug/kg	1				
Di-n-octylphthalate	U	ND	70.0	350	ug/kg	1				
Dibenzo(a,h)anthracene	U	ND	10.5	35.0	ug/kg	1				
Dibenzofuran	U	ND	70.0	350	ug/kg	1				
Diethylphthalate	U	ND	70.0	350	ug/kg	1				
Dimethylphthalate	U	ND	70.0	350	ug/kg	1				
Diphenylamine	U	ND	70.0	350	ug/kg	1				
Fluoranthene		144	10.5	35.0	ug/kg	1				
Fluorene	J	10.5	10.5	35.0	ug/kg	1				
Hexachlorobenzene	U	ND	70.0	350	ug/kg	1				
Hexachlorobutadiene	U	ND	70.0	350	ug/kg	1				

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Report Date: September 6, 2006

Client Sample ID: RE21-06-68292
Sample ID: 168251001

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal										
3550C/8270C BNA Soil Federal										
Hexachlorocyclopentadiene	U	ND	70.0	350	ug/kg	1				
Hexachloroethane	U	ND	70.0	350	ug/kg	1				
Indeno(1,2,3-cd)pyrene		49.2	10.5	35.0	ug/kg	1				
Isophorone	U	ND	70.0	350	ug/kg	1				
N-Methyl-N-nitrosomethylamine	U	ND	70.0	350	ug/kg	1				
N-Nitrosodipropylamine	U	ND	70.0	350	ug/kg	1				
Naphthalene	U	ND	10.5	35.0	ug/kg	1				
Nitrobenzene	U	ND	70.0	350	ug/kg	1				
Pentachlorophenol	U	ND	70.0	350	ug/kg	1				
Phenanthrene		108	10.5	35.0	ug/kg	1				
Phenol	U	ND	70.0	350	ug/kg	1				
Pyrene		184	11.0	35.0	ug/kg	1				
Pyridine	U	ND	70.0	350	ug/kg	1				
bis(2-Chloroethoxy)methane	U	ND	70.0	350	ug/kg	1				
bis(2-Chloroethyl) ether	U	ND	70.0	350	ug/kg	1				
bis(2-Chloroisopropyl)ether	U	ND	70.0	350	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	ND	70.0	175	ug/kg	1				
m,p-Cresols	U	ND	140	350	ug/kg	1				
3-Nitroaniline	U	ND	70.0	350	ug/kg	1				
o-Cresol	U	ND	70.0	350	ug/kg	1				
2-Nitroaniline	U	ND	70.0	350	ug/kg	1				
4-Nitroaniline	U	ND	70.0	350	ug/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B BNA Soil Prep-8270C Analysis Fed	AXH1	08/03/06	1736	554471
SW846 3550B	3550B PCB Prep Soil FED	JXM2	08/05/06	1342	555283
SW846 8330 PREP	SW846 8330 Explosives Extraction in Solids	TXB2	08/07/06	1518	553948

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8321A Modified	
2	SW846 8321A Modified	
3	SW846 8082	
4	SW846 8270C	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery %	Acceptable Limits
3,4-Dinitrotoluene	SW846 8321A Modified Explosives by LC-	3640	2500	146	(46%-165%)

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Contact: Ms. Joylene Valdez
Project: **LANL ER Project**

Report Date: September 6, 2006

Client Sample ID: RE21-06-68292
Sample ID: 168251001

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
	MS/MS				
3,4-Dinitrotoluene	SW846 8321A Modified Explosives by LC-MS/MS	3390	2500	136	(46%-165%)
4cmx	8082	4.76	7.00	68	(39%-123%)
Decachlorobiphenyl	8082	4.62	7.00	66	(30%-125%)
2,4,6-Tribromophenol	3550C/8270C BNA Soil Federal	2220	3500	64	(21%-116%)
2-Fluorobiphenyl	3550C/8270C BNA Soil Federal	1380	1750	79	(35%-110%)
2-Fluorophenol	3550C/8270C BNA Soil Federal	2720	3500	78	(23%-107%)
Nitrobenzene-d5	3550C/8270C BNA Soil Federal	1410	1750	80	(34%-118%)
Phenol-d5	3550C/8270C BNA Soil Federal	2560	3500	73	(35%-108%)
p-Terphenyl-d14	3550C/8270C BNA Soil Federal	1580	1750	90	(43%-122%)

Notes:
The Qualifiers in this report are defined as follows :

* A quality control analyte recovery is outside of specified acceptance criteria
< Result is less than value reported
> Result is greater than value reported
A The TIC is a suspected aldol-condensation product
B Target analyte was detected in the associated blank
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
E Organics--Concentration of the target analyte exceeds the instrument calibration range
H Analytical holding time was exceeded
J Value is estimated
N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded

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Report Date: September 6, 2006

Client Sample ID: RE21-06-68292
Sample ID: 168251001

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by

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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL ER Project**

Report Date: September 6, 2006

Client Sample ID: RE21-06-68293
Sample ID: 168251002
Matrix: Soil
Collect Date: 26-JUL-06 09:58
Receive Date: 01-AUG-06
Collector: Client
Moisture: 7.63%

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
LC-MS/MS Explosives Federal										
SW846 8321A Modified Explosives by LC-MS/MS										
2,4-Diamino-6-nitrotoluene	U	ND	500	2000	ug/kg	2	LXS1 08/30/06	2012	553950	1
2,6-Diamino-4-nitrotoluene	U	ND	500	2000	ug/kg	2				
3,5-Dinitroaniline	U	ND	250	1000	ug/kg	2				
TATB	U	ND	300	1000	ug/kg	2				
tris(o-cresyl) phosphate	U	ND	250	1000	ug/kg	2				
1,3,5-Trinitrobenzene	U	ND	100	500	ug/kg	2	MAP 08/23/06	0255	553950	2
2,4,6-Trinitrotoluene	U	ND	100	500	ug/kg	2				
2,4-Dinitrotoluene	U	ND	100	500	ug/kg	2				
2,6-Dinitrotoluene	U	ND	100	500	ug/kg	2				
2-Amino-4,6-dinitrotoluene	U	ND	150	500	ug/kg	2				
4-Amino-2,6-dinitrotoluene	U	ND	100	500	ug/kg	2				
HMX	U	ND	150	500	ug/kg	2				
Nitrobenzene	U	ND	150	500	ug/kg	2				
PETN	U	ND	730	1000	ug/kg	2				
RDX	U	ND	100	500	ug/kg	2				
Tetryl	U	ND	100	500	ug/kg	2				
1,3-Dinitrobenzene	U	ND	150	500	ug/kg	2				
3-Nitrotoluene	U	ND	100	500	ug/kg	2				
2-Nitrotoluene	U	ND	100	500	ug/kg	2				
4-Nitrotoluene	U	ND	100	500	ug/kg	2				
Semi-Volatiles-PCB Federal										
8082										
Aroclor-1016	U	ND	1.20	3.61	ug/kg	1	KXY1 08/11/06	1650	555288	3
Aroclor-1221	U	ND	1.20	3.61	ug/kg	1				
Aroclor-1232	U	ND	1.20	3.61	ug/kg	1				
Aroclor-1242	U	ND	1.20	3.61	ug/kg	1				
Aroclor-1248	U	ND	1.20	3.61	ug/kg	1				
Aroclor-1254	U	ND	1.20	3.61	ug/kg	1				
Aroclor-1260	U	ND	1.20	3.61	ug/kg	1				
Semi-volatile Mass spec Organics Federal										
3550C/8270C BNA Soil Federal										
1,2,4-Trichlorobenzene	U	ND	72.2	361	ug/kg	1	JMB3 08/10/06	1830	554472	4
1,2-Dichlorobenzene	U	ND	72.2	361	ug/kg	1				
Azobenzene	U	ND	72.2	361	ug/kg	1				
1,3-Dichlorobenzene	U	ND	72.2	361	ug/kg	1				
1,4-Dichlorobenzene	U	ND	72.2	361	ug/kg	1				

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Sample ID: 168251002
Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal										
3550C/8270C BNA Soil Federal										
2,4,5-Trichlorophenol	U	ND	72.2	361	ug/kg	1				
2,4,6-Trichlorophenol	U	ND	72.2	361	ug/kg	1				
2,4-Dichlorophenol	U	ND	72.2	361	ug/kg	1				
2,4-Dimethylphenol	U	ND	72.2	361	ug/kg	1				
2,4-Dinitrophenol	U	ND	137	722	ug/kg	1				
2,4-Dinitrotoluene	U	ND	36.1	361	ug/kg	1				
2,6-Dinitrotoluene	U	ND	36.1	361	ug/kg	1				
2-Chloronaphthalene	U	ND	12.6	36.1	ug/kg	1				
2-Chlorophenol	U	ND	72.2	361	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	ND	72.2	361	ug/kg	1				
2-Methylnaphthalene	U	ND	7.22	36.1	ug/kg	1				
2-Nitrophenol	U	ND	36.1	361	ug/kg	1				
3,3'-Dichlorobenzidine	U	ND	108	361	ug/kg	1				
4-Bromophenylphenylether	U	ND	36.1	361	ug/kg	1				
4-Chloro-3-methylphenol	U	ND	36.1	361	ug/kg	1				
4-Chloroaniline	U	ND	72.2	361	ug/kg	1				
4-Chlorophenylphenylether	U	ND	36.1	361	ug/kg	1				
4-Nitrophenol	U	ND	72.2	361	ug/kg	1				
Acenaphthene	U	ND	12.1	36.1	ug/kg	1				
Acenaphthylene	U	ND	10.8	36.1	ug/kg	1				
Aniline	U	ND	126	361	ug/kg	1				
Anthracene	U	ND	7.22	36.1	ug/kg	1				
Benzo(a)anthracene	U	ND	10.8	36.1	ug/kg	1				
Benzo(a)pyrene	U	ND	10.8	36.1	ug/kg	1				
Benzo(b)fluoranthene	U	ND	10.8	36.1	ug/kg	1				
Benzo(ghi)perylene	U	ND	10.8	36.1	ug/kg	1				
Benzo(k)fluoranthene	U	ND	10.8	36.1	ug/kg	1				
Benzoic acid	U	ND	180	722	ug/kg	1				
Benzyl alcohol	U	ND	108	361	ug/kg	1				
Butylbenzylphthalate	U	ND	72.2	361	ug/kg	1				
Chrysene	U	ND	10.8	36.1	ug/kg	1				
Di-n-butylphthalate	U	ND	36.1	361	ug/kg	1				
Di-n-octylphthalate	U	ND	72.2	361	ug/kg	1				
Dibenzo(a,h)anthracene	U	ND	10.8	36.1	ug/kg	1				
Dibenzofuran	U	ND	72.2	361	ug/kg	1				
Diethylphthalate	U	ND	72.2	361	ug/kg	1				
Dimethylphthalate	U	ND	72.2	361	ug/kg	1				
Diphenylamine	U	ND	72.2	361	ug/kg	1				
Fluoranthene	U	ND	10.8	36.1	ug/kg	1				
Fluorene	U	ND	10.8	36.1	ug/kg	1				
Hexachlorobenzene	U	ND	72.2	361	ug/kg	1				
Hexachlorobutadiene	U	ND	72.2	361	ug/kg	1				

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Report Date: September 6, 2006

Client Sample ID: RE21-06-68293
Sample ID: 168251002
Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal										
3550C/8270C BNA Soil Federal										
Hexachlorocyclopentadiene	U	ND	72.2	361	ug/kg	1				
Hexachloroethane	U	ND	72.2	361	ug/kg	1				
Indeno(1,2,3-cd)pyrene	U	ND	10.8	36.1	ug/kg	1				
Isophorone	U	ND	72.2	361	ug/kg	1				
N-Methyl-N-nitrosomethylamine	U	ND	72.2	361	ug/kg	1				
N-Nitrosodipropylamine	U	ND	72.2	361	ug/kg	1				
Naphthalene	U	ND	10.8	36.1	ug/kg	1				
Nitrobenzene	U	ND	72.2	361	ug/kg	1				
Pentachlorophenol	U	ND	72.2	361	ug/kg	1				
Phenanthrene	U	ND	10.8	36.1	ug/kg	1				
Phenol	U	ND	72.2	361	ug/kg	1				
Pyrene	U	ND	11.3	36.1	ug/kg	1				
Pyridine	U	ND	72.2	361	ug/kg	1				
bis(2-Chloroethoxy)methane	U	ND	72.2	361	ug/kg	1				
bis(2-Chloroethyl) ether	U	ND	72.2	361	ug/kg	1				
bis(2-Chloroisopropyl)ether	U	ND	72.2	361	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	ND	72.2	180	ug/kg	1				
m,p-Cresols	U	ND	144	361	ug/kg	1				
3-Nitroaniline	U	ND	72.2	361	ug/kg	1				
o-Cresol	U	ND	72.2	361	ug/kg	1				
2-Nitroaniline	U	ND	72.2	361	ug/kg	1				
4-Nitroaniline	U	ND	72.2	361	ug/kg	1				
Volatile Organics Federal										
GEL 8260B Method List Soil Fed										
1,1,1,2-Tetrachloroethane	U	ND	0.217	1.08	ug/kg	1	YS1 08/07/06	1443	555786	5
1,1,1-Trichloroethane	U	ND	0.325	1.08	ug/kg	1				
1,1,2,2-Tetrachloroethane	U	ND	0.271	1.08	ug/kg	1				
1,1,2-Trichloroethane	U	ND	0.325	1.08	ug/kg	1				
1,1-Dichloroethane	U	ND	0.325	1.08	ug/kg	1				
1,1-Dichloroethylene	U	ND	0.325	1.08	ug/kg	1				
1,1-Dichloropropene	U	ND	0.271	1.08	ug/kg	1				
1,2,3-Trichloropropane	U	ND	0.541	1.08	ug/kg	1				
1,2,4-Trimethylbenzene	U	ND	0.217	1.08	ug/kg	1				
1,2-Dibromo-3-chloropropane	U	ND	0.541	1.08	ug/kg	1				
1,2-Dibromoethane	U	ND	0.217	1.08	ug/kg	1				
1,2-Dichlorobenzene	U	ND	0.217	1.08	ug/kg	1				
1,2-Dichloroethane	U	ND	0.271	1.08	ug/kg	1				
1,2-Dichloropropane	U	ND	0.325	1.08	ug/kg	1				
1,3,5-Trimethylbenzene	U	ND	0.217	1.08	ug/kg	1				
1,3-Dichlorobenzene	U	ND	0.217	1.08	ug/kg	1				
1,3-Dichloropropane	U	ND	0.325	1.08	ug/kg	1				

Certificate of Analysis

Company : Los Alamos National Laboratories
Address : PO Box 1663
TA-3, Bldg. 1237, Drop Pt. 03U
Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: **LANL ER Project**

Report Date: September 6, 2006

Client Sample ID: RE21-06-68293
Sample ID: 168251002
Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
GEL 8260B Method List Soil Fed										
1,4-Dichlorobenzene	U	ND	0.217	1.08	ug/kg	1				
2,2-Dichloropropane	U	ND	0.325	1.08	ug/kg	1				
2-Butanone	U	ND	1.84	5.41	ug/kg	1				
2-Chlorotoluene	U	ND	0.217	1.08	ug/kg	1				
2-Hexanone	U	ND	1.65	5.41	ug/kg	1				
4-Chlorotoluene	U	ND	0.260	1.08	ug/kg	1				
4-Isopropyltoluene	U	ND	0.271	1.08	ug/kg	1				
4-Methyl-2-pentanone	U	ND	1.18	5.41	ug/kg	1				
Acetone	U	ND	2.79	5.41	ug/kg	1				
Benzene	U	ND	0.357	1.08	ug/kg	1				
Bromobenzene	U	ND	0.217	1.08	ug/kg	1				
Bromochloromethane	U	ND	0.541	1.08	ug/kg	1				
Bromodichloromethane	U	ND	0.217	1.08	ug/kg	1				
Bromoform	U	ND	0.325	1.08	ug/kg	1				
Bromomethane	U	ND	0.541	1.08	ug/kg	1				
Carbon disulfide	U	ND	1.35	5.41	ug/kg	1				
Carbon tetrachloride	U	ND	0.217	1.08	ug/kg	1				
Chlorobenzene	U	ND	0.217	1.08	ug/kg	1				
Chloroethane	U	ND	0.541	1.08	ug/kg	1				
Chloroform	U	ND	0.217	1.08	ug/kg	1				
Chloromethane	U	ND	0.541	1.08	ug/kg	1				
Dibromochloromethane	U	ND	0.325	1.08	ug/kg	1				
Dibromomethane	U	ND	0.325	1.08	ug/kg	1				
Dichlorodifluoromethane	U	ND	0.541	1.08	ug/kg	1				
Ethylbenzene	U	ND	0.217	1.08	ug/kg	1				
Iodomethane	U	ND	1.81	5.41	ug/kg	1				
Isopropylbenzene	U	ND	0.217	1.08	ug/kg	1				
Methylene chloride	U	ND	2.17	5.41	ug/kg	1				
Styrene	U	ND	0.217	1.08	ug/kg	1				
Tetrachloroethylene	U	ND	0.217	1.08	ug/kg	1				
Toluene	U	ND	0.314	1.08	ug/kg	1				
Trichloroethylene	U	ND	0.271	1.08	ug/kg	1				
Trichlorofluoromethane	U	ND	0.541	1.08	ug/kg	1				
1,1,2-Trichloro-1,2,2-Trifluoroethane	U	ND	1.08	5.41	ug/kg	1				
Vinyl chloride	U	ND	0.541	1.08	ug/kg	1				
cis-1,2-Dichloroethylene	U	ND	0.325	1.08	ug/kg	1				
cis-1,3-Dichloropropylene	U	ND	0.217	1.08	ug/kg	1				
m,p-Xylenes	U	ND	0.271	2.17	ug/kg	1				
n-Butylbenzene	U	ND	0.217	1.08	ug/kg	1				
n-Propylbenzene	U	ND	0.217	1.08	ug/kg	1				
o-Xylene	U	ND	0.217	1.08	ug/kg	1				

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Report Date: September 6, 2006

Client Sample ID: RE21-06-68293
Sample ID: 168251002

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
GEL 8260B Method List Soil Fed										
sec-Butylbenzene	U	ND	0.217	1.08	ug/kg	1				
tert-Butylbenzene	U	ND	0.217	1.08	ug/kg	1				
trans-1,2-Dichloroethylene	U	ND	0.325	1.08	ug/kg	1				
trans-1,3-Dichloropropylene	U	ND	0.325	1.08	ug/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B BNA Soil Prep-8270C Analysis Fed	AXH1	08/03/06	1736	554471
SW846 3550B	3550B PCB Prep Soil FED	JXM2	08/05/06	1342	555283
SW846 5030	Volatile 5030 Solid Prep	YS1	08/07/06	0930	555784
SW846 8330 PREP	SW846 8330 Explosives Extraction in Solids	TXB2	08/07/06	1518	553948

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8321A Modified	
2	SW846 8321A Modified	
3	SW846 8082	
4	SW846 8270C	
5	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
3,4-Dinitrotoluene	SW846 8321A Modified Explosives by LC-MS/MS	3470	2500	139	(46%-165%)
3,4-Dinitrotoluene	SW846 8321A Modified Explosives by LC-MS/MS	3120	2500	125	(46%-165%)
4cmx	8082	4.88	7.22	68	(39%-123%)
Decachlorobiphenyl	8082	4.61	7.22	64	(30%-125%)
2,4,6-Tribromophenol	3550C/8270C BNA Soil Federal	1900	3610	53	(21%-116%)
2-Fluorobiphenyl	3550C/8270C BNA Soil Federal	1120	1800	62	(35%-110%)
2-Fluorophenol	3550C/8270C BNA Soil Federal	2080	3610	58	(23%-107%)
Nitrobenzene-d5	3550C/8270C BNA Soil Federal	1000	1800	55	(34%-118%)
Phenol-d5	3550C/8270C BNA Soil Federal	1840	3610	51	(35%-108%)
p-Terphenyl-d14	3550C/8270C BNA Soil Federal	1450	1800	80	(43%-122%)
1,2-Dichloroethane-d4	GEL 8260B Method List Soil Fed	53.8	50.0	99	(70%-121%)
Bromofluorobenzene	GEL 8260B Method List Soil Fed	50.1	50.0	93	(70%-126%)
Dibromofluoromethane	GEL 8260B Method List Soil Fed	59.8	50.0	110	(69%-129%)

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

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Report Date: September 6, 2006

Client Sample ID: RE21-06-68293 Project: LANL00600
Sample ID: 168251002 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Toluene-d8		GEL 8260B Method List Soil Fed		53.2		50.0	98	(72%-127%)		

Notes:
The Qualifiers in this report are defined as follows :

* A quality control analyte recovery is outside of specified acceptance criteria
< Result is less than value reported
> Result is greater than value reported
A The TIC is a suspected aldol-condensation product
B Target analyte was detected in the associated blank
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
E Organics--Concentration of the target analyte exceeds the instrument calibration range
H Analytical holding time was exceeded
J Value is estimated
N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by