

chamberlain, kathryn, NMENV

From: Enz, Robert D. [REnz@doeal.gov]
Sent: Tuesday, August 01, 2006 8:46 AM
To: chamberlain, kathryn, NMENV
Subject: FW: Ash material results via Portage

Attachments: 167447.pdf; 166840.pdf; 166838.pdf; Dionne.Francis33.vcf; 166841.pdf



167447.pdf (26 KB) 166840.pdf (44 KB) 166838.pdf (99 KB) Dionne.Francis33.vcf (449 B) 166841.pdf (46 KB)

Katie,

These are the preliminary results for the ash material that I received yesterday and this morning. I will find out when we get the final results. Again, this is the bagged ash material that ITSI retrieved last November-December.

-----Original Message-----

From: Keith R. Greene [mailto:kgreene@lanl.gov]
Sent: Monday, July 31, 2006 7:57 AM
To: Enz, Robert D.; Gregory, David R.; Darryl Blain
Subject: Ash material results via Portage

Prelim results for ash pile

>X-Sieve: CMU Sieve 2.2
>Date: Fri, 28 Jul 2006 17:24:00 -0400
>From: Dionne Francis <Dionne.Francis@gel.com>
>User-Agent: Mozilla Thunderbird 1.0.6 (Windows/20050716)
>X-Accept-Language: en-us, en
>To: "Keith R. Greene" <kgreene@lanl.gov>
>Subject: Results
>X-Proofpoint-Spam: 0
>X-PMX-Version: 4.7.1.128075
>
>Content-Type: text/plain;
> charset="utf-8";
> format=flowed
>X-NAIMIME-Disclaimer: 1
>X-NAIMIME-Modified: 1
>
>Keith,
>
>Preliminary data attached for Request#s 5550S, 5551S and 5559S.
>
>Have a great weekend!
>
>--
>Proverbs 3v3,4
>Let love and faithfulness never leave you; bind them around your neck,
>write them on the tablet of your heart. Then you will win favor and a
>good name in the sight of God and man.
>
>
>
>
>



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GENERAL ENGINEERING LABORATORIES, LLC

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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: July 28, 2006

Page 1 of 2

Client Sample ID: RE73-06-71579
 Sample ID: 167447001
 Matrix: Soil
 Collect Date: 07-JUL-06 14:00
 Receive Date: 11-JUL-06
 Collector: Client

Project: LANL00600
 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
<i>TCLP Hg in Solid</i>											
Mercury	U	ND	0.0006	0.002	mg/L	1	ETL	07/26/06	1212	550904	1
Metals Analysis-ICP-MS											
<i>TCLP ICP-MS Metals for Soil</i>											
Arsenic	U	ND	0.015	0.050	mg/L	1	BAJ	07/26/06	0302	550682	2
Barium		1.26	0.005	0.020	mg/L	1					
Cadmium		0.108	0.001	0.010	mg/L	1					
Chromium	J	0.0118	0.010	0.030	mg/L	1					
Silver	U	ND	0.002	0.010	mg/L	1					
Lead		4.33	0.100	0.400	mg/L	20	RMJ	07/27/06	2255	550682	3
Selenium	U	ND	0.025	0.050	mg/L	1	BAJ	07/26/06	2026	550682	4

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching -FEDERAL	MTM1	07/20/06	1800	549991
SW846 1311	SW846 1311 TCLP Leaching -FEDERAL	MTM1	07/20/06	1800	549989
SW846 3010A	TCLP SW 846 3010 Acid Digestion	FGA	07/24/06	1200	550681
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	RDD1	07/25/06	1000	550903

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010/6020	
3	SW846 3010/6020	
4	SW846 3010/6020	

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
- C Analyte has been confirmed by GC/MS analysis

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Client Sample ID: RE73-06-71579
Sample ID: 167447001

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- 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 an "as received" basis.

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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 Project: LANL ER Project

Report Date: July 28, 2006

Page 1 of 3

Client Sample ID:	RE73-06-71579	Project:	LANL00600
Sample ID:	166840001	Client ID:	LANL006
Matrix:	Soil		
Collect Date:	07-JUL-06 14:00		
Receive Date:	11-JUL-06		
Collector:	Client		
Moisture:	14.7%		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Electrode Analysis Federal										
<i>SW9045C pH Federal</i>										
pH at Temp 24.7C	H	7.01	0.010	0.100	SU	1	LXW107/13/06	2042	547398	1
Flow Injection Analysis Federal										
<i>SW 7.3.3 Reactivity, Releasable</i>										
Reactive Releasable Cyanide	<	250000		250000	ug/kg	1	KLP1 07/13/06	1140	547159	2
Hazardous Waste Federal										
<i>SW1020A Setaflash Flash Point 200</i>										
Setaflash-200		>200	75.0	75.0	Fahrenheit	1	GXA2 07/13/06	1335	547126	3
Mercury Analysis-CVAA										
<i>7471 Cold Vapor Hg in Solid</i>										
Mercury		257	2.72	10.9	ug/kg	1	ETL 07/24/06	1145	548963	4
Metals Analysis-ICP										
<i>3050/6010 Aluminum Federal</i>										
Arsenic		31300	670	1670	ug/kg	1	HSC 07/26/06	1337	547047	5
Barium		1190000	112	558	ug/kg	1				
Calcium		28100000	4020	11200	ug/kg	1				
Chromium		89100	112	558	ug/kg	1				
Magnesium		2750000	9490	33500	ug/kg	1				
Potassium		2480000	5580	16700	ug/kg	1				
Sodium		1950000	5020	16700	ug/kg	1				
Vanadium		19800	112	558	ug/kg	1				
Aluminum		14700000	152000	447000	ug/kg	20	HSC 07/27/06	1400	547047	6
Cadmium		12700	2230	11200	ug/kg	20				
Cobalt		15100	4470	11200	ug/kg	20				
Copper		2080000	6700	22300	ug/kg	20				
Iron		156000000	40200	223000	ug/kg	20				
Lead		2150000	5580	22300	ug/kg	20				
Manganese		1470000	4470	22300	ug/kg	20				
Selenium	U	ND	13400	33500	ug/kg	20				
Zinc		2360000	4470	22300	ug/kg	20				
Metals Analysis-ICP-MS										
<i>3050/6020 Silver Federal</i>										
Beryllium		424	22.4	112	ug/kg	2	RMJ 07/27/06	1944	547089	7
Nickel		60100	112	448	ug/kg	2				
Silver		26900	44.8	224	ug/kg	2				
Thallium	J	94.4	89.7	224	ug/kg	2				

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Report Date: July 28, 2006

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Client Sample ID: RE73-06-71579
 Sample ID: 166840001

Project: LANL00600
 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
<i>3050/6020 Silver Federal</i>											
Antimony		8700	280	1120	ug/kg	5	RMJ	07/27/06	1929	547089	8
Titration Analysis Federal											
<i>Reactive Sulfide SW846 Chapter 7.3.4</i>											
Reactive Releasable Sulfide	<	500		500	mg/kg		RG2	07/19/06	0949	547101	9
Wet Chemistry General Federal											
<i>SW9095 Paint Filter Test Federal</i>											
Paint Filter	Z	FAIL					RG2	07/12/06	0821	547004	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	846 3050BS PREP	CQH1	07/25/06	2013	547045
SW846 3050B	ICP-MS 3050BS PREP	CQH1	07/25/06	2006	547088
SW846 7.3.3 Prep	SW 7.3.3 Reactivity, Releasable Cyanide-	EXF1	07/12/06	1643	547158
SW846 7471A Prep	EPA 7471A Mercury Prep Soil	RDD1	07/21/06	0930	548962

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9045C	
2	SW846 7.3.3	
3	SW846 1020A	
4	SW846 7471A	
5	SW846 3050B/6010B	
6	SW846 3050B/6010B	
7	SW846 3050B/6020	
8	SW846 3050B/6020	
9	SW846 Chpt. 7.3.4-TIT	
10	SW846 9095	

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

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Report Date: July 28, 2006

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Client Sample ID: RE73-06-71579
Sample ID: 166840001

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

- 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 Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- 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
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- 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

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Report Date: July 28, 2006

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Client Sample ID: RE73-06-71579
 Sample ID: 166838001
 Matrix: Soil
 Collect Date: 07-JUL-06 14:00
 Receive Date: 11-JUL-06
 Collector: Client
 Moisture: 18.9%

Project: LANL00600
 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal										
<i>3550C/8270C BNA Soil Federal</i>										
1,2,4-Trichlorobenzene	U	ND	82.2	411	ug/kg	1	NAG1 07/14/06	1846	547747	1
1,2-Dichlorobenzene	U	ND	82.2	411	ug/kg	1				
Azobenzene	U	ND	82.2	411	ug/kg	1				
1,3-Dichlorobenzene	U	ND	82.2	411	ug/kg	1				
1,4-Dichlorobenzene	U	ND	82.2	411	ug/kg	1				
2,4,5-Trichlorophenol	U	ND	82.2	411	ug/kg	1				
2,4,6-Trichlorophenol	U	ND	82.2	411	ug/kg	1				
2,4-Dichlorophenol	U	ND	82.2	411	ug/kg	1				
2,4-Dimethylphenol	U	ND	82.2	411	ug/kg	1				
2,4-Dinitrophenol	U	ND	156	822	ug/kg	1				
2,4-Dinitrotoluene	U	ND	41.1	411	ug/kg	1				
2,6-Dinitrotoluene	U	ND	41.1	411	ug/kg	1				
2-Chloronaphthalene	U	ND	14.4	41.1	ug/kg	1				
2-Chlorophenol	U	ND	82.2	411	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	ND	82.2	411	ug/kg	1				
2-Methylnaphthalene	U	ND	8.22	41.1	ug/kg	1				
2-Nitrophenol	U	ND	41.1	411	ug/kg	1				
3,3'-Dichlorobenzidine	U	ND	123	411	ug/kg	1				
4-Bromophenylphenylether	U	ND	41.1	411	ug/kg	1				
4-Chloro-3-methylphenol	U	ND	41.1	411	ug/kg	1				
4-Chloroaniline	U	ND	82.2	411	ug/kg	1				
4-Chlorophenylphenylether	U	ND	41.1	411	ug/kg	1				
4-Nitrophenol	U	ND	82.2	411	ug/kg	1				
Acenaphthene	U	ND	13.7	41.1	ug/kg	1				
Acenaphthylene	U	ND	12.3	41.1	ug/kg	1				
Aniline	U	ND	144	411	ug/kg	1				
Anthracene	U	ND	8.22	41.1	ug/kg	1				
Benzo(a)anthracene	J	23.1	12.3	41.1	ug/kg	1				
Benzo(a)pyrene	J	32.5	12.3	41.1	ug/kg	1				
Benzo(b)fluoranthene	J	40.8	12.3	41.1	ug/kg	1				
Benzo(ghi)perylene	J	29.4	12.3	41.1	ug/kg	1				
Benzo(k)fluoranthene	J	19.1	12.3	41.1	ug/kg	1				
Benzoic acid	U	ND	206	822	ug/kg	1				
Benzyl alcohol	U	ND	123	411	ug/kg	1				
Butylbenzylphthalate	U	ND	82.2	411	ug/kg	1				
Chrysene	J	32.7	12.3	41.1	ug/kg	1				
Di-n-butylphthalate	U	ND	41.1	411	ug/kg	1				

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 Project: LANL ER Project

Report Date: July 28, 2006

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Client Sample ID: RE73-06-71579
 Sample ID: 166838001

Project: LANL00600
 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-volatile Mass spec Organics Federal											
<i>3550C/8270C BNA Soil Federal</i>											
Di-n-octylphthalate	U	ND	82.2	411	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	12.3	41.1	ug/kg	1					
Dibenzofuran	U	ND	82.2	411	ug/kg	1					
Diethylphthalate	U	ND	82.2	411	ug/kg	1					
Dimethylphthalate	U	ND	82.2	411	ug/kg	1					
Diphenylamine	U	ND	82.2	411	ug/kg	1					
Fluoranthene	J	28.5	12.3	41.1	ug/kg	1					
Fluorene	U	ND	12.3	41.1	ug/kg	1					
Hexachlorobenzene	U	ND	82.2	411	ug/kg	1					
Hexachlorobutadiene	U	ND	82.2	411	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	82.2	411	ug/kg	1					
Hexachloroethane	U	ND	82.2	411	ug/kg	1					
Indeno(1,2,3-cd)pyrene	J	23.5	12.3	41.1	ug/kg	1					
Isophorone	U	ND	82.2	411	ug/kg	1					
N-Methyl-N-nitrosomethylamine	U	ND	82.2	411	ug/kg	1					
N-Nitrosodipropylamine	U	ND	82.2	411	ug/kg	1					
Naphthalene	U	ND	12.3	41.1	ug/kg	1					
Nitrobenzene	U	ND	82.2	411	ug/kg	1					
Pentachlorophenol	U	ND	82.2	411	ug/kg	1					
Phenanthrene	J	21.4	12.3	41.1	ug/kg	1					
Phenol	U	ND	82.2	411	ug/kg	1					
Pyrene		50.0	12.9	41.1	ug/kg	1					
Pyridine	U	ND	82.2	411	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	82.2	411	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	82.2	411	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	82.2	411	ug/kg	1					
bis(2-Ethylhexyl)phthalate		482	82.2	206	ug/kg	1					
m,p-Cresols	U	ND	164	411	ug/kg	1					
3-Nitroaniline	U	ND	82.2	411	ug/kg	1					
o-Cresol	U	ND	82.2	411	ug/kg	1					
2-Nitroaniline	U	ND	82.2	411	ug/kg	1					
4-Nitroaniline	U	ND	82.2	411	ug/kg	1					
Volatile Organics Federal											
<i>GEL 8260B Method List Soil Fed</i>											
1,1,1,2-Tetrachloroethane	U	ND	0.247	1.23	ug/kg	1	GRB2	07/18/06	0348	548907	2
1,1,1-Trichloroethane	U	ND	0.370	1.23	ug/kg	1					
1,1,2,2-Tetrachloroethane	U	ND	0.308	1.23	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.370	1.23	ug/kg	1					
1,1-Dichloroethane	U	ND	0.370	1.23	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.370	1.23	ug/kg	1					
1,1-Dichloropropene	U	ND	0.308	1.23	ug/kg	1					

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Page 3 of 5

Client Sample ID: RE73-06-71579
Sample ID: 166838001

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
<i>GEL 8260B Method List Soil Fed</i>										
1,2,3-Trichloropropane	U	ND	0.617	1.23	ug/kg	1				
1,2,4-Trimethylbenzene	U	ND	0.247	1.23	ug/kg	1				
1,2-Dibromo-3-chloropropane	U	ND	0.617	1.23	ug/kg	1				
1,2-Dibromoethane	U	ND	0.247	1.23	ug/kg	1				
1,2-Dichlorobenzene	U	ND	0.247	1.23	ug/kg	1				
1,2-Dichloroethane	U	ND	0.308	1.23	ug/kg	1				
1,2-Dichloropropane	U	ND	0.370	1.23	ug/kg	1				
1,3,5-Trimethylbenzene	U	ND	0.247	1.23	ug/kg	1				
1,3-Dichlorobenzene	U	ND	0.247	1.23	ug/kg	1				
1,3-Dichloropropane	U	ND	0.370	1.23	ug/kg	1				
1,4-Dichlorobenzene	U	ND	0.247	1.23	ug/kg	1				
2,2-Dichloropropane	U	ND	0.370	1.23	ug/kg	1				
2-Butanone	U	ND	2.10	6.17	ug/kg	1				
2-Chlorotoluene	U	ND	0.247	1.23	ug/kg	1				
2-Hexanone	U	ND	1.87	6.17	ug/kg	1				
4-Chlorotoluene	U	ND	0.296	1.23	ug/kg	1				
4-Isopropyltoluene	U	ND	0.308	1.23	ug/kg	1				
4-Methyl-2-pentanone	U	ND	1.34	6.17	ug/kg	1				
Acetone	U	ND	3.18	6.17	ug/kg	1				
Benzene	U	ND	0.407	1.23	ug/kg	1				
Bromobenzene	U	ND	0.247	1.23	ug/kg	1				
Bromochloromethane	U	ND	0.617	1.23	ug/kg	1				
Bromodichloromethane	U	ND	0.247	1.23	ug/kg	1				
Bromoform	U	ND	0.370	1.23	ug/kg	1				
Bromomethane	U	ND	0.617	1.23	ug/kg	1				
Carbon disulfide	U	ND	1.54	6.17	ug/kg	1				
Carbon tetrachloride	U	ND	0.247	1.23	ug/kg	1				
Chlorobenzene	U	ND	0.247	1.23	ug/kg	1				
Chloroethane	U	ND	0.617	1.23	ug/kg	1				
Chloroform	U	ND	0.247	1.23	ug/kg	1				
Chloromethane	U	ND	0.617	1.23	ug/kg	1				
Dibromochloromethane	U	ND	0.370	1.23	ug/kg	1				
Dibromomethane	U	ND	0.370	1.23	ug/kg	1				
Dichlorodifluoromethane	U	ND	0.617	1.23	ug/kg	1				
Ethylbenzene	U	ND	0.247	1.23	ug/kg	1				
Iodomethane	U	ND	2.06	6.17	ug/kg	1				
Isopropylbenzene	U	ND	0.247	1.23	ug/kg	1				
Methylene chloride	U	ND	2.47	6.17	ug/kg	1				
Styrene	U	ND	0.247	1.23	ug/kg	1				
Tetrachloroethylene	U	ND	0.247	1.23	ug/kg	1				
Toluene	U	ND	0.358	1.23	ug/kg	1				
Trichloroethylene		1.30	0.308	1.23	ug/kg	1				

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

Report Date: July 28, 2006

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Client Sample ID: RE73-06-71579
 Sample ID: 166838001

Project: LANL00600
 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics Federal											
<i>GEL 8260B Method List Soil Fed</i>											
Trichlorofluoromethane	U	ND	0.617	1.23	ug/kg	1					
1,1,2-Trichloro-1,2,2-Trifluoroethane	U	ND	1.23	6.17	ug/kg	1					
Vinyl chloride	U	ND	0.617	1.23	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.370	1.23	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.247	1.23	ug/kg	1					
m,p-Xylenes	U	ND	0.308	2.47	ug/kg	1					
n-Butylbenzene	U	ND	0.247	1.23	ug/kg	1					
n-Propylbenzene	U	ND	0.247	1.23	ug/kg	1					
o-Xylene	U	ND	0.247	1.23	ug/kg	1					
sec-Butylbenzene	U	ND	0.247	1.23	ug/kg	1					
tert-Butylbenzene	U	ND	0.247	1.23	ug/kg	1					
trans-1,2-Dichloroethylene	U	ND	0.370	1.23	ug/kg	1					
trans-1,3-Dichloropropylene	U	ND	0.370	1.23	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	JPB	07/12/06	0746	547059
SW846 3550B	3550B BNA Soil Prep-8270C Analysis Fed	JPB	07/14/06	1000	547746
SW846 5030	Volatile 5030 Solid Prep	GRB2	07/18/06	0020	548906

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8270C	
2	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery %	Acceptable Limits
2,4,6-Tribromophenol	3550C/8270C BNA Soil Federal	2620	4110	64	(21%-116%)
2-Fluorobiphenyl	3550C/8270C BNA Soil Federal	1350	2060	65	(35%-110%)
2-Fluorophenol	3550C/8270C BNA Soil Federal	2300	4110	56	(23%-107%)
Nitrobenzene-d5	3550C/8270C BNA Soil Federal	1400	2060	68	(34%-118%)
Phenol-d5	3550C/8270C BNA Soil Federal	2680	4110	65	(35%-108%)
p-Terphenyl-d14	3550C/8270C BNA Soil Federal	2200	2060	107	(43%-122%)
1,2-Dichloroethane-d4	GEL 8260B Method List Soil Fed	71.2	50.0	116	(70%-121%)
Bromofluorobenzene	GEL 8260B Method List Soil Fed	69.2	50.0	112	(70%-126%)
Dibromofluoromethane	GEL 8260B Method List Soil Fed	69.1	50.0	112	(69%-129%)
Toluene-d8	GEL 8260B Method List Soil Fed	65.1	50.0	106	(72%-127%)

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Client Sample ID: RE73-06-71579
Sample ID: 166838001

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Notes:

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- < 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.

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 Project: **LANL ER Project**

Report Date: July 31, 2006

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Client Sample ID:	RE73-06-71579	Project:	LANL00600
Sample ID:	166841001	Client ID:	LANL006
Matrix:	Soil		
Collect Date:	07-JUL-06 14:00		
Receive Date:	11-JUL-06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Alpha Spec Analysis											
<i>AM241</i>											
Americium-241	U	ND	+/-0.0112	0.0302	0.050	pCi/g		MXA 07/24/06	1641	549644	1
<i>ISOPU</i>											
Plutonium-238	U	ND	+/-0.00967	0.0234	0.050	pCi/g		MXA 07/28/06	1439	551872	2
Plutonium-239/240		0.340	+/-0.0321	0.0253	0.050	pCi/g					
<i>ISOU</i>											
Uranium-233/234		3.66	+/-0.0882	0.0541	0.100	pCi/g		MXA 07/25/06	1646	549646	3
Uranium-235/236		0.248	+/-0.026	0.0417	0.100	pCi/g					
Uranium-238		3.27	+/-0.0833	0.0538	0.100	pCi/g					
Rad Gamma Spec Analysis											
<i>GAMMA SPEC</i>											
Americium-241	U	ND	+/-0.137	0.185	0.200	pCi/g		MJH1 07/28/06	1634	549747	4
Bismuth-211	UI	ND	+/-0.397	0.276		pCi/g					
Bismuth-214		0.881	+/-0.157	0.088	0.200	pCi/g					
Cadmium-109	UI	ND	+/-0.809	0.990		pCi/g					
Cerium-139	U	ND	+/-0.0247	0.041	0.050	pCi/g					
Cesium-134	UI	ND	+/-0.0398	0.0546	0.100	pCi/g					
Cesium-137		0.204	+/-0.0521	0.0473	0.100	pCi/g					
Cobalt-60	U	ND	+/-0.0275	0.0494	0.100	pCi/g					
Europium-152	U	ND	+/-0.069	0.118	0.200	pCi/g					
Lanthanum-140	U	ND	+/-0.0868	0.154		pCi/g					
Lead-212		1.03	+/-0.119	0.0705	0.100	pCi/g					
Lead-214		0.998	+/-0.147	0.0889	0.100	pCi/g					
Mercury-203	U	ND	+/-0.0555	0.0561	0.100	pCi/g					
Potassium-40		15.3	+/-1.44	0.372	1.00	pCi/g					
Radium-223	U	ND	+/-0.457	0.803		pCi/g					
Radium-224	UI	ND	+/-0.853	0.801		pCi/g					
Radium-226		0.881	+/-0.157	0.088		pCi/g					
Radium-228		1.07	+/-0.271	0.164	0.500	pCi/g					
Ruthenium-106	U	ND	+/-0.245	0.427	0.800	pCi/g					
Sodium-22	U	ND	+/-0.0292	0.0527	0.080	pCi/g					
Strontium-85	UI	ND	+/-0.033	0.0652		pCi/g					
Thallium-208		0.341	+/-0.0753	0.0469	0.080	pCi/g					
Thorium-227	U	ND	+/-0.272	0.499		pCi/g					
Thorium-231	U	ND	+/-0.192	0.272		pCi/g					

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Client Sample ID: RE73-06-71579 Project: LANL00600
 Sample ID: 166841001 Client ID: LANL006

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
<i>GAMMA SPEC</i>												
Thorium-234		4.26	+/-1.85	1.55	2.00	pCi/g						
Tin-113	U	ND	+/-0.0333	0.0579	0.100	pCi/g						
Uranium-235		0.399	+/-0.281	0.330	0.500	pCi/g						
Yttrium-88	U	ND	+/-0.0228	0.0472	0.100	pCi/g						
Rad Gas Flow Proportional Counting												
<i>SR90</i>												
Strontium-90	U	ND	+/-0.061	0.271	0.500	pCi/g		BXF1	07/24/06	1738	550330	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	JMB1	07/12/06	0805	546990
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	07/11/06	1542	546989

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL-300, Am-05-RC Modified	
2	DOE EML HASL-300, Pu-11-RC Modified	
3	DOE EML HASL-300, U-02-RC Modified	
4	EML HASL 300, 4.5.2.3	
5	EPA 905.0 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery %	Acceptable Limits
Americium-243	AM241			64	(15%-125%)
Plutonium-242	ISOPU			53	(15%-125%)
Plutonium-242	ISOPU			53	(15%-125%)
Uranium-232	ISOU			62	(25%-125%)
Uranium-232	ISOU			62	(25%-125%)
Uranium-232	ISOU			62	(25%-125%)
Strontium-90	SR90			79	(25%-125%)

Notes:

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Project: LANL ER Project

Report Date: July 31, 2006

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Client Sample ID: RE73-06-71579
Sample ID: 166841001

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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- 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
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- 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.

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 Project: **LANL ER Project**

Report Date: July 28, 2006

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Client Sample ID: RE73-06-71580
 Sample ID: 167447002
 Matrix: Soil
 Collect Date: 07-JUL-06 14:30
 Receive Date: 11-JUL-06
 Collector: Client

Project: LANL00600
 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
<i>TCLP Hg in Solid</i>											
Mercury	U	ND	0.0006	0.002	mg/L	1	ETL	07/26/06	1220	550904	1
Metals Analysis-ICP-MS											
<i>TCLP ICP-MS Metals for Soil</i>											
Arsenic	U	ND	0.015	0.050	mg/L	1	BAJ	07/26/06	0323	550682	2
Barium		1.11	0.005	0.020	mg/L	1					
Cadmium		0.209	0.001	0.010	mg/L	1					
Chromium	U	ND	0.010	0.030	mg/L	1					
Silver	U	ND	0.002	0.010	mg/L	1					
Lead		2.31	0.050	0.200	mg/L	10	RMJ	07/27/06	2245	550682	3
Selenium	U	ND	0.025	0.050	mg/L	1	BAJ	07/26/06	2038	550682	4

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching -FEDERAL	MTM1	07/20/06	1800	549991
SW846 1311	SW846 1311 TCLP Leaching -FEDERAL	MTM1	07/20/06	1800	549989
SW846 3010A	TCLP SW 846 3010 Acid Digestion	FGA	07/24/06	1200	550681
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	RDD1	07/25/06	1000	550903

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010/6020	
3	SW846 3010/6020	
4	SW846 3010/6020	

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- B Target analyte was detected in the associated blank
- C Analyte has been confirmed by GC/MS analysis

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Client Sample ID: RE73-06-71580
Sample ID: 167447002

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- 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 an "as received" basis.

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Client Sample ID:	RE73-06-71580	Project:	LANL00600
Sample ID:	166840002	Client ID:	LANL006
Matrix:	Soil		
Collect Date:	07-JUL-06 14:30		
Receive Date:	11-JUL-06		
Collector:	Client		
Moisture:	18.4%		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Electrode Analysis Federal										
<i>SW9045C pH Federal</i>										
pH at Temp 24.6C	H	7.81	0.010	0.100	SU	1	LXW107/13/06	2046	547398	1
Flow Injection Analysis Federal										
<i>SW 7.3.3 Reactivity, Releasable</i>										
Reactive Releasable Cyanide	<	250000		250000	ug/kg	1	KLP1 07/13/06	1142	547159	2
Hazardous Waste Federal										
<i>SW1020A Setaflash Flash Point 200</i>										
Setaflash-200		>200	75.0	75.0	Fahrenheit	1	GXA2 07/13/06	1405	547126	3
Mercury Analysis-CVAA										
<i>7471 Cold Vapor Hg in Solid</i>										
Mercury		618	13.4	53.8	ug/kg	5	ETL 07/24/06	1435	548963	4
Metals Analysis-ICP										
<i>3050/6010 Aluminum Federal</i>										
Arsenic		37200	701	1750	ug/kg	1	HSC 07/26/06	1406	547047	5
Barium		1950000	117	584	ug/kg	1				
Calcium		31000000	4200	11700	ug/kg	1				
Chromium		88500	117	584	ug/kg	1				
Magnesium		3630000	9930	35000	ug/kg	1				
Potassium		3310000	5840	17500	ug/kg	1				
Sodium		3190000	5250	17500	ug/kg	1				
Vanadium		25500	117	584	ug/kg	1				
Aluminum		18600000	159000	467000	ug/kg	20	HSC 07/27/06	1430	547047	6
Cadmium		21500	2340	11700	ug/kg	20				
Cobalt		17300	4670	11700	ug/kg	20				
Copper		2210000	7010	23400	ug/kg	20				
Iron		146000000	42000	234000	ug/kg	20				
Lead		3170000	5840	23400	ug/kg	20				
Manganese		1630000	4670	23400	ug/kg	20				
Selenium	U	ND	14000	35000	ug/kg	20				
Zinc		3930000	4670	23400	ug/kg	20				
Metals Analysis-ICP-MS										
<i>3050/6020 Silver Federal</i>										
Antimony		11000	117	467	ug/kg	2	RMJ 07/27/06	1916	547089	7
Beryllium		291	23.4	117	ug/kg	2				
Nickel		66100	117	467	ug/kg	2				
Silver		24100	46.7	234	ug/kg	2				

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Client Sample ID: RE73-06-71580 Project: LANL00600
 Sample ID: 166840002 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
<i>3050/6020 Silver Federal</i>											
Thallium	U	ND	93.4	234	ug/kg	2					
Titration Analysis Federal											
<i>Reactive Sulfide SW846 Chapter 7.3.4</i>											
Reactive Releasable Sulfide	<	500		500	mg/kg		RG2	07/19/06	0956	547101	8
Wet Chemistry General Federal											
<i>SW9095 Paint Filter Test Federal</i>											
Paint Filter	Z	FAIL					RG2	07/12/06	0833	547004	9

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	846 3050BS PREP	CQH1	07/25/06	2013	547045
SW846 3050B	ICP-MS 3050BS PREP	CQH1	07/25/06	2006	547088
SW846 7.3.3 Prep	SW 7.3.3 Reactivity, Releasable Cyanide-	EXF1	07/12/06	1643	547158
SW846 7471A Prep	EPA 7471A Mercury Prep Soil	RDD1	07/21/06	0930	548962

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9045C	
2	SW846 7.3.3	
3	SW846 1020A	
4	SW846 7471A	
5	SW846 3050B/6010B	
6	SW846 3050B/6010B	
7	SW846 3050B/6020	
8	SW846 Chpt. 7.3.4-TIT	
9	SW846 9095	

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- C Analyte has been confirmed by GC/MS analysis

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Client Sample ID: RE73-06-71580
Sample ID: 166840002

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- 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
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- 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 _____

GENERAL ENGINEERING LABORATORIES, LLC

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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: July 28, 2006

Page 1 of 5

Client Sample ID:	RE73-06-71580	Project:	LANL00600
Sample ID:	166838002	Client ID:	LANL006
Matrix:	Soil		
Collect Date:	07-JUL-06 14:30		
Receive Date:	11-JUL-06		
Collector:	Client		
Moisture:	14.4%		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal										
<i>3550C/8270C BNA Soil Federal</i>										
1,2,4-Trichlorobenzene	U	ND	77.8	389	ug/kg	1	NAG1 07/15/06	0001	547747	1
1,2-Dichlorobenzene	U	ND	77.8	389	ug/kg	1				
Azobenzene	U	ND	77.8	389	ug/kg	1				
1,3-Dichlorobenzene	U	ND	77.8	389	ug/kg	1				
1,4-Dichlorobenzene	U	ND	77.8	389	ug/kg	1				
2,4,5-Trichlorophenol	U	ND	77.8	389	ug/kg	1				
2,4,6-Trichlorophenol	U	ND	77.8	389	ug/kg	1				
2,4-Dichlorophenol	U	ND	77.8	389	ug/kg	1				
2,4-Dimethylphenol	U	ND	77.8	389	ug/kg	1				
2,4-Dinitrophenol	U	ND	148	778	ug/kg	1				
2,4-Dinitrotoluene	U	ND	38.9	389	ug/kg	1				
2,6-Dinitrotoluene	U	ND	38.9	389	ug/kg	1				
2-Chloronaphthalene	U	ND	13.6	38.9	ug/kg	1				
2-Chlorophenol	U	ND	77.8	389	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	ND	77.8	389	ug/kg	1				
2-Methylnaphthalene	U	ND	7.78	38.9	ug/kg	1				
2-Nitrophenol	U	ND	38.9	389	ug/kg	1				
3,3'-Dichlorobenzidine	U	ND	117	389	ug/kg	1				
4-Bromophenylphenylether	U	ND	38.9	389	ug/kg	1				
4-Chloro-3-methylphenol	U	ND	38.9	389	ug/kg	1				
4-Chloroaniline	U	ND	77.8	389	ug/kg	1				
4-Chlorophenylphenylether	U	ND	38.9	389	ug/kg	1				
4-Nitrophenol	U	ND	77.8	389	ug/kg	1				
Acenaphthene		68.5	13.0	38.9	ug/kg	1				
Acenaphthylene	U	ND	11.7	38.9	ug/kg	1				
Aniline	U	ND	136	389	ug/kg	1				
Anthracene		207	7.78	38.9	ug/kg	1				
Benzo(a)anthracene		497	11.7	38.9	ug/kg	1				
Benzo(a)pyrene		439	11.7	38.9	ug/kg	1				
Benzo(b)fluoranthene		793	11.7	38.9	ug/kg	1				
Benzo(ghi)perylene		168	11.7	38.9	ug/kg	1				
Benzo(k)fluoranthene	U	ND	11.7	38.9	ug/kg	1				
Benzoic acid	U	ND	195	778	ug/kg	1				
Benzyl alcohol	U	ND	117	389	ug/kg	1				
Butylbenzylphthalate	U	ND	77.8	389	ug/kg	1				
Chrysene		533	11.7	38.9	ug/kg	1				
Di-n-butylphthalate	U	ND	38.9	389	ug/kg	1				

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Client Sample ID: RE73-06-71580
 Sample ID: 166838002

Project: LANL00600
 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-volatile Mass spec Organics Federal										
<i>3550C/8270C BNA Soil Federal</i>										
Di-n-octylphthalate	U	ND	77.8	389	ug/kg	1				
Dibenzo(a,h)anthracene	U	ND	11.7	38.9	ug/kg	1				
Dibenzofuran	U	ND	77.8	389	ug/kg	1				
Diethylphthalate	U	ND	77.8	389	ug/kg	1				
Dimethylphthalate	U	ND	77.8	389	ug/kg	1				
Diphenylamine	U	ND	77.8	389	ug/kg	1				
Fluoranthene		715	11.7	38.9	ug/kg	1				
Fluorene		51.0	11.7	38.9	ug/kg	1				
Hexachlorobenzene	U	ND	77.8	389	ug/kg	1				
Hexachlorobutadiene	U	ND	77.8	389	ug/kg	1				
Hexachlorocyclopentadiene	U	ND	77.8	389	ug/kg	1				
Hexachloroethane	U	ND	77.8	389	ug/kg	1				
Indeno(1,2,3-cd)pyrene		169	11.7	38.9	ug/kg	1				
Isophorone	U	ND	77.8	389	ug/kg	1				
N-Methyl-N-nitrosomethylamine	U	ND	77.8	389	ug/kg	1				
N-Nitrosodipropylamine	U	ND	77.8	389	ug/kg	1				
Naphthalene	U	ND	11.7	38.9	ug/kg	1				
Nitrobenzene	U	ND	77.8	389	ug/kg	1				
Pentachlorophenol	U	ND	77.8	389	ug/kg	1				
Phenanthrene		805	11.7	38.9	ug/kg	1				
Phenol	U	ND	77.8	389	ug/kg	1				
Pyrene		1670	12.2	38.9	ug/kg	1				
Pyridine	U	ND	77.8	389	ug/kg	1				
bis(2-Chloroethoxy)methane	U	ND	77.8	389	ug/kg	1				
bis(2-Chloroethyl) ether	U	ND	77.8	389	ug/kg	1				
bis(2-Chloroisopropyl)ether	U	ND	77.8	389	ug/kg	1				
bis(2-Ethylhexyl)phthalate		922	77.8	195	ug/kg	1				
m,p-Cresols	U	ND	156	389	ug/kg	1				
3-Nitroaniline	U	ND	77.8	389	ug/kg	1				
o-Cresol	U	ND	77.8	389	ug/kg	1				
2-Nitroaniline	U	ND	77.8	389	ug/kg	1				
4-Nitroaniline	U	ND	77.8	389	ug/kg	1				
Volatile Organics Federal										
<i>GEL 8260B Method List Soil Fed</i>										
1,1,1,2-Tetrachloroethane	U	ND	0.234	1.17	ug/kg	1	GRB2 07/18/06	0416	548907	2
1,1,1-Trichloroethane	U	ND	0.350	1.17	ug/kg	1				
1,1,2,2-Tetrachloroethane	U	ND	0.292	1.17	ug/kg	1				
1,1,2-Trichloroethane	U	ND	0.350	1.17	ug/kg	1				
1,1-Dichloroethane	U	ND	0.350	1.17	ug/kg	1				
1,1-Dichloroethylene	U	ND	0.350	1.17	ug/kg	1				
1,1-Dichloropropene	U	ND	0.292	1.17	ug/kg	1				

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 Project: LANL ER Project

Report Date: July 28, 2006

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Client Sample ID: RE73-06-71580
 Sample ID: 166838002

Project: LANL00600
 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
<i>GEL 8260B Method List Soil Fed</i>										
1,2,3-Trichloropropane	U	ND	0.584	1.17	ug/kg	1				
1,2,4-Trimethylbenzene	U	ND	0.234	1.17	ug/kg	1				
1,2-Dibromo-3-chloropropane	U	ND	0.584	1.17	ug/kg	1				
1,2-Dibromoethane	U	ND	0.234	1.17	ug/kg	1				
1,2-Dichlorobenzene	U	ND	0.234	1.17	ug/kg	1				
1,2-Dichloroethane	U	ND	0.292	1.17	ug/kg	1				
1,2-Dichloropropane	U	ND	0.350	1.17	ug/kg	1				
1,3,5-Trimethylbenzene	U	ND	0.234	1.17	ug/kg	1				
1,3-Dichlorobenzene	U	ND	0.234	1.17	ug/kg	1				
1,3-Dichloropropane	U	ND	0.350	1.17	ug/kg	1				
1,4-Dichlorobenzene	U	ND	0.234	1.17	ug/kg	1				
2,2-Dichloropropane	U	ND	0.350	1.17	ug/kg	1				
2-Butanone	U	ND	1.98	5.84	ug/kg	1				
2-Chlorotoluene	U	ND	0.234	1.17	ug/kg	1				
2-Hexanone	U	ND	1.77	5.84	ug/kg	1				
4-Chlorotoluene	U	ND	0.280	1.17	ug/kg	1				
4-Isopropyltoluene	U	ND	0.292	1.17	ug/kg	1				
4-Methyl-2-pentanone	U	ND	1.27	5.84	ug/kg	1				
Acetone	U	ND	3.01	5.84	ug/kg	1				
Benzene	U	ND	0.385	1.17	ug/kg	1				
Bromobenzene	U	ND	0.234	1.17	ug/kg	1				
Bromochloromethane	U	ND	0.584	1.17	ug/kg	1				
Bromodichloromethane	U	ND	0.234	1.17	ug/kg	1				
Bromoform	U	ND	0.350	1.17	ug/kg	1				
Bromomethane	U	ND	0.584	1.17	ug/kg	1				
Carbon disulfide	U	ND	1.46	5.84	ug/kg	1				
Carbon tetrachloride	U	ND	0.234	1.17	ug/kg	1				
Chlorobenzene	U	ND	0.234	1.17	ug/kg	1				
Chloroethane	U	ND	0.584	1.17	ug/kg	1				
Chloroform	U	ND	0.234	1.17	ug/kg	1				
Chloromethane	U	ND	0.584	1.17	ug/kg	1				
Dibromochloromethane	U	ND	0.350	1.17	ug/kg	1				
Dibromomethane	U	ND	0.350	1.17	ug/kg	1				
Dichlorodifluoromethane	U	ND	0.584	1.17	ug/kg	1				
Ethylbenzene	U	ND	0.234	1.17	ug/kg	1				
Iodomethane	U	ND	1.95	5.84	ug/kg	1				
Isopropylbenzene	U	ND	0.234	1.17	ug/kg	1				
Methylene chloride	U	ND	2.34	5.84	ug/kg	1				
Styrene	U	ND	0.234	1.17	ug/kg	1				
Tetrachloroethylene	U	ND	0.234	1.17	ug/kg	1				
Toluene	U	ND	0.339	1.17	ug/kg	1				
Trichloroethylene		1.22	0.292	1.17	ug/kg	1				

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Project: LANL ER Project

Report Date: July 28, 2006

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Client Sample ID: RE73-06-71580 Project: LANL00600
Sample ID: 166838002 Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatiles Organics Federal											
<i>GEL 8260B Method List Soil Fed</i>											
Trichlorofluoromethane	U	ND	0.584	1.17	ug/kg	1					
1,1,2-Trichloro-1,2,2-Trifluoroethane	U	ND	1.17	5.84	ug/kg	1					
Vinyl chloride	U	ND	0.584	1.17	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.350	1.17	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.234	1.17	ug/kg	1					
m,p-Xylenes	U	ND	0.292	2.34	ug/kg	1					
n-Butylbenzene	U	ND	0.234	1.17	ug/kg	1					
n-Propylbenzene	U	ND	0.234	1.17	ug/kg	1					
o-Xylene	U	ND	0.234	1.17	ug/kg	1					
sec-Butylbenzene	U	ND	0.234	1.17	ug/kg	1					
tert-Butylbenzene	U	ND	0.234	1.17	ug/kg	1					
trans-1,2-Dichloroethylene	U	ND	0.350	1.17	ug/kg	1					
trans-1,3-Dichloropropylene	U	ND	0.350	1.17	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	JPB	07/12/06	0746	547059
SW846 3550B	3550B BNA Soil Prep-8270C Analysis Fed	JPB	07/14/06	1000	547746
SW846 5030	Volatile 5030 Solid Prep	GRB2	07/18/06	0026	548906

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8270C	
2	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery %	Acceptable Limits
2,4,6-Tribromophenol	3550C/8270C BNA Soil Federal	2530	3890	65	(21%-116%)
2-Fluorobiphenyl	3550C/8270C BNA Soil Federal	1500	1950	77	(35%-110%)
2-Fluorophenol	3550C/8270C BNA Soil Federal	2840	3890	73	(23%-107%)
Nitrobenzene-d5	3550C/8270C BNA Soil Federal	1630	1950	84	(34%-118%)
Phenol-d5	3550C/8270C BNA Soil Federal	2970	3890	76	(35%-108%)
p-Terphenyl-d14	3550C/8270C BNA Soil Federal	2710	1950	139*	(43%-122%)
1,2-Dichloroethane-d4	GEL 8260B Method List Soil Fed	70.4	50.0	121	(70%-121%)
Bromofluorobenzene	GEL 8260B Method List Soil Fed	68.9	50.0	118	(70%-126%)
Dibromofluoromethane	GEL 8260B Method List Soil Fed	67.5	50.0	116	(69%-129%)
Toluene-d8	GEL 8260B Method List Soil Fed	64.8	50.0	111	(72%-127%)

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Report Date: July 28, 2006

Page 5 of 5

Client Sample ID: RE73-06-71580
Sample ID: 166838002

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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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.

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 Project: **LANL ER Project**

Report Date: July 31, 2006

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Client Sample ID:	RE73-06-71580	Project:	LANL00600
Sample ID:	166841002	Client ID:	LANL006
Matrix:	Soil		
Collect Date:	07-JUL-06 14:30		
Receive Date:	11-JUL-06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Alpha Spec Analysis											
<i>AM241</i>											
Americium-241	U	ND	+/-0.0102	0.0345	0.050	pCi/g		MXA 07/24/06	1641	549644	1
<i>ISOPU</i>											
Plutonium-238	U	ND	+/-0.0037	0.0228	0.050	pCi/g		MXA 07/28/06	1439	551872	2
Plutonium-239/240		0.298	+/-0.0279	0.0247	0.050	pCi/g					
<i>ISOU</i>											
Uranium-233/234		28.2	+/-0.287	0.0749	0.100	pCi/g		MXA 07/25/06	1646	549646	3
Uranium-235/236		1.64	+/-0.0771	0.0577	0.100	pCi/g					
Uranium-238		12.1	+/-0.188	0.0745	0.100	pCi/g					
Rad Gamma Spec Analysis											
<i>GAMMA SPEC</i>											
Americium-241	U	ND	+/-0.109	0.187	0.200	pCi/g		MJH1 07/28/06	1635	549747	4
Bismuth-211	UI	ND	+/-0.487	0.329		pCi/g					
Bismuth-214		0.864	+/-0.183	0.122	0.200	pCi/g					
Cadmium-109	UI	ND	+/-0.809	1.45		pCi/g					
Cerium-139	UI	ND	+/-0.0539	0.0501	0.050	pCi/g					
Cesium-134	U	ND	+/-0.0516	0.0796	0.100	pCi/g					
Cesium-137		0.0975	+/-0.0523	0.0611	0.100	pCi/g					
Cobalt-60	U	ND	+/-0.0341	0.0701	0.100	pCi/g					
Europium-152	U	ND	+/-0.0938	0.162	0.200	pCi/g					
Lanthanum-140	U	ND	+/-0.0886	0.186		pCi/g					
Lead-212		0.822	+/-0.142	0.111	0.100	pCi/g					
Lead-214		1.15	+/-0.180	0.115	0.100	pCi/g					
Mercury-203	U	ND	+/-0.0443	0.0774	0.100	pCi/g					
Potassium-40		14.7	+/-1.71	0.567	1.00	pCi/g					
Radium-223	U	ND	+/-0.658	1.11		pCi/g					
Radium-224	UI	ND	+/-1.33	1.25		pCi/g					
Radium-226		0.864	+/-0.183	0.122		pCi/g					
Radium-228		1.21	+/-0.305	0.214	0.500	pCi/g					
Ruthenium-106	U	ND	+/-0.332	0.611	0.800	pCi/g					
Sodium-22	U	ND	+/-0.0421	0.0761	0.080	pCi/g					
Strontium-85	U	ND	+/-0.0458	0.0797		pCi/g					
Thallium-208		0.255	+/-0.0735	0.0617	0.080	pCi/g					
Thorium-227	U	ND	+/-0.355	0.631		pCi/g					
Thorium-231	UI	ND	+/-0.277	0.327		pCi/g					

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Client Sample ID: RE73-06-71580 Project: LANL00600
 Sample ID: 166841002 Client ID: LANL006

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
<i>GAMMA SPEC</i>												
Thorium-234		16.9	+/-3.45	1.61	2.00	pCi/g						
Tin-113	U	ND	+/-0.0455	0.0795	0.100	pCi/g						
Uranium-235		1.68	+/-0.527	0.555	0.500	pCi/g						
Yttrium-88	U	ND	+/-0.0395	0.0721	0.100	pCi/g						
Rad Gas Flow Proportional Counting												
<i>SR90</i>												
Strontium-90	U	ND	+/-0.0466	0.260	0.500	pCi/g		BXF1	07/24/06	1814	550330	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	JMB1	07/12/06	0805	546990
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	07/11/06	1542	546989

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL-300, Am-05-RC Modified	
2	DOE EML HASL-300, Pu-11-RC Modified	
3	DOE EML HASL-300, U-02-RC Modified	
4	EML HASL 300, 4.5.2.3	
5	EPA 905.0 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery %	Acceptable Limits
Americium-243	AM241			56	(15%-125%)
Plutonium-242	ISOPU			52	(15%-125%)
Plutonium-242	ISOPU			52	(15%-125%)
Uranium-232	ISOU			46	(25%-125%)
Uranium-232	ISOU			46	(25%-125%)
Uranium-232	ISOU			46	(25%-125%)
Strontium-90	SR90			80	(25%-125%)

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

GENERAL ENGINEERING LABORATORIES, LLC

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: July 31, 2006

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Client Sample ID: RE73-06-71580
Sample ID: 166841002

Project: LANL00600
Client ID: LANL006

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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- 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
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- 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 _____