TA-21 21-011(K) OUTFALL

Subject: Re: FW: 21-011(k) waste results
Date: Mon, 27 Jan 2003 14:39:22 -0700
From: Vickie Maranville <vickie_maranville@nmenv.state.nm.us>
To: pmb@lanl.gov

MM 1/27/03

I have reviewed the results you forwarded for 21-011(k) waste characterization data. The results provided appear to be consistent with the contained-in determination. Please provide additional results as required for the remainder of the excavated material prior to disposal. The three piles for which data has been provided to NMED may be properly disposed of. Please call me with questions.

Vickie

Paula Bertino wrote:

> *Hi Vickie. Pursuant to my message(s) today, I thought I would just forward*
> *the waste characterization results for the first 300 cubic yards of*
> *contaminated material excavated from SWMU 21-011(k). Pursuant to NMED's*
> *No-Longer Contained-In" determination, LANL collected one sample for each*
> *100 cubic yards of excavated material and submitted the samples for offsite*
> *fixed laboratory analysis for VOCs. Only toluene was detected in one of the*
> *samples at a concentration of 0.000427 mg/kg, which is significantly less*
> *than the maximum concentration of 1.0 mg/kg measured in the pre-VCM site*
> *characterization samples. Please let me know if you have any questions or*
> *require any additional information. We will forward the full data packages*
> *to you upon receipt. If possible, we would like to initiate plans to*
> *transport the excavated material to Area G at TA-54 for disposal during the*
> *next few weeks. Thanks for your help.*
>
> *Paula*
>
> *-----Original Message-----*
> *From: John Crocker [mailto:john.crocker@wgint.com]*
> *Sent: Wednesday, January 22, 2003 11:04 AM*
> *To: pmb@lanl.gov; mthacker@lanl.gov*
> *Subject: 21-011(k) waste results*
>
> *Mark/Paula,*
>
> *Attached are the Form 1 files from the three waste samples collected*
> *from stockpiles at 21-011(k) and the associated QC samples. Two waste*
> *samples had no detected VOCs. The third sample detected Toluene at*
> *0.427 ug/kg. The field QC samples did not detect Toluene. So, until the*
> *full data packages are delivered (30 day turn for these)the toluene has*
> *to be considered as real.*
>
> *Feel free to call me with any questions or if you need any additional*
> *information.*
>
> *John C. Crocker*
> *Project Manager*
>
> *Program Management Company*
> *2237 Trinity Drive*
> *Building 2, First Floor*
> *Los Alamos, NM 87544*
>
> *Office: (505) 662-1319*
> *Cell: (505) 780-2899*
>
> ----------
> *Name: 73190.pdf*

10681

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>                       Encoding: base64
```

Geologist
New Mexico Environment Department
Hazardous Waste Bureau

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID:	MD21-03-50314 01	Project:	LANL00101
Sample ID:	73190001	Client ID:	LANL004
Matrix:	Soil		
Collect Date:	09-JAN-03 00:00		
Receive Date:	10-JAN-03		
Collector:	Client		
Moisture:	11.9%		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Soil Federal										
1,1,1,2-Tetrachloroethane	U	ND	0.522	1.13	ug/kg	1	MAP 01/15/03	0854	227139	1
1,1,1-Trichloroethane	U	ND	0.601	1.13	ug/kg	1				
1,1,2,2-Tetrachloroethane	U	ND	1.03	1.13	ug/kg	1				
1,1,2-Trichloroethane	U	ND	0.613	1.13	ug/kg	1				
1,1-Dichloroethane	U	ND	0.533	1.13	ug/kg	1				
1,1-Dichloroethylene	U	ND	0.567	1.13	ug/kg	1				
1,1-Dichloropropene	U	ND	0.374	1.13	ug/kg	1				
1,2,3-Trichloropropane	U	ND	1.03	1.13	ug/kg	1				
1,2,4-Trimethylbenzene	U	ND	0.431	1.13	ug/kg	1				
1,2-Dibromo-3-chloropropane	U	ND	0.851	1.13	ug/kg	1				
1,2-Dibromoethane	U	ND	0.476	1.13	ug/kg	1				
1,2-Dichlorobenzene	U	ND	0.510	1.13	ug/kg	1				
1,2-Dichloroethane	U	ND	0.488	1.13	ug/kg	1				
1,2-Dichloropropane	U	ND	0.545	1.13	ug/kg	1				
1,3,5-Trimethylbenzene	U	ND	0.420	1.13	ug/kg	1				
1,3-Dichlorobenzene	U	ND	0.352	1.13	ug/kg	1				
1,3-Dichloropropane	U	ND	0.590	1.13	ug/kg	1				
1,4-Dichlorobenzene	U	ND	0.420	1.13	ug/kg	1				
2,2-Dichloropropane	U	ND	0.374	1.13	ug/kg	1				
2-Butanone	U	ND	4.24	5.67	ug/kg	1				
2-Chlorotoluene	U	ND	0.420	1.13	ug/kg	1				
2-Hexanone	U	ND	4.28	5.67	ug/kg	1				
4-Chlorotoluene	U	ND	0.363	1.13	ug/kg	1				
4-Isopropyltoluene	U	ND	0.352	1.13	ug/kg	1				
4-Methyl-2-pentanone	U	ND	4.57	5.67	ug/kg	1				
Acetone	U	ND	3.99	5.67	ug/kg	1				
Benzene	U	ND	0.510	1.13	ug/kg	1				
Bromobenzene	U	ND	0.635	1.13	ug/kg	1				
Bromochloromethane	U	ND	0.567	1.13	ug/kg	1				
Bromodichloromethane	U	ND	0.556	1.13	ug/kg	1				
Bromoform	U	ND	0.556	1.13	ug/kg	1				
Bromomethane	U	ND	0.567	1.13	ug/kg	1				
Carbon disulfide	U	ND	2.68	5.67	ug/kg	1				
Carbon tetrachloride	U	ND	0.556	1.13	ug/kg	1				
Chlorobenzene	U	ND	0.465	1.13	ug/kg	1				
Chloroethane	U	ND	0.919	1.13	ug/kg	1				

Certificate of Analysis

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Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50314 01
Sample ID: 73190001

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Soil Federal										
Chloroform	U	ND	0.590	1.13	ug/kg	1				
Chloromethane	U	ND	0.420	1.13	ug/kg	1				
Dibromochloromethane	U	ND	0.567	1.13	ug/kg	1				
Dibromomethane	U	ND	0.545	1.13	ug/kg	1				
Dichlorodifluoromethane	U	ND	0.942	1.13	ug/kg	1				
Ethylbenzene	U	ND	0.431	1.13	ug/kg	1				
Iodomethane	U	ND	2.88	5.67	ug/kg	1				
Isopropylbenzene	U	ND	0.510	1.13	ug/kg	1				
Methylene chloride	U	ND	1.53	5.67	ug/kg	1				
Styrene	U	ND	0.442	1.13	ug/kg	1				
Tetrachloroethylene	U	ND	0.431	1.13	ug/kg	1				
Toluene	U	ND	0.386	1.13	ug/kg	1				
Trichloroethylene	U	ND	0.510	1.13	ug/kg	1				
Trichlorofluoromethane	U	ND	0.567	1.13	ug/kg	1				
Trichlorotrifluoroethane	U	ND	2.84	5.67	ug/kg	1				
Vinyl chloride	U	ND	0.635	1.13	ug/kg	1				
cis-1,2-Dichloroethylene	U	ND	0.533	1.13	ug/kg	1				
cis-1,3-Dichloropropylene	U	ND	0.488	1.13	ug/kg	1				
m,p-Xylenes	U	ND	0.783	2.27	ug/kg	1				
n-Butylbenzene	U	ND	0.306	1.13	ug/kg	1				
n-Propylbenzene	U	ND	0.408	1.13	ug/kg	1				
o-Xylene	U	ND	0.442	1.13	ug/kg	1				
sec-Butylbenzene	U	ND	0.476	1.13	ug/kg	1				
tert-Butylbenzene	U	ND	0.488	1.13	ug/kg	1				
trans-1,2-Dichloroethylene	U	ND	0.601	1.13	ug/kg	1				
trans-1,3-Dichloropropylene	U	ND	0.284	1.13	ug/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Soil Federal	MAP	01/15/03	0854	227139
SW846 5030	Volatile 5030 Solid Prep	MAP	01/15/03	0600	227138

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	8260B Volatiles In Soil Federal	110%	(69%-138%)

Certificate of Analysis

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Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50314 01
Sample ID: 73190001

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Dibromofluoromethane		8260B Volatiles In Soil Federal		105%		(67%-137%)				
Toluene-d8		8260B Volatiles In Soil Federal		104%		(67%-139%)				

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

< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

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, Stacy Griffin.

Reviewed by

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50315 01
Sample ID: 73190002
Matrix: Soil
Collect Date: 09-JAN-03 00:00
Receive Date: 10-JAN-03
Collector: Client
Moisture: 11.1%

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Soil Federal										
1,1,1,2-Tetrachloroethane	U	ND	0.518	1.13	ug/kg	1	MAP 01/15/03	0921	227139	1
1,1,1-Trichloroethane	U	ND	0.596	1.13	ug/kg	1				
1,1,2,2-Tetrachloroethane	U	ND	1.02	1.13	ug/kg	1				
1,1,2-Trichloroethane	U	ND	0.608	1.13	ug/kg	1				
1,1-Dichloroethane	U	ND	0.529	1.13	ug/kg	1				
1,1-Dichloroethylene	U	ND	0.563	1.13	ug/kg	1				
1,1-Dichloropropene	U	ND	0.371	1.13	ug/kg	1				
1,2,3-Trichloropropane	U	ND	1.02	1.13	ug/kg	1				
1,2,4-Trimethylbenzene	U	ND	0.428	1.13	ug/kg	1				
1,2-Dibromo-3-chloropropane	U	ND	0.844	1.13	ug/kg	1				
1,2-Dibromoethane	U	ND	0.473	1.13	ug/kg	1				
1,2-Dichlorobenzene	U	ND	0.506	1.13	ug/kg	1				
1,2-Dichloroethane	U	ND	0.484	1.13	ug/kg	1				
1,2-Dichloropropane	U	ND	0.540	1.13	ug/kg	1				
1,3,5-Trimethylbenzene	U	ND	0.416	1.13	ug/kg	1				
1,3-Dichlorobenzene	U	ND	0.349	1.13	ug/kg	1				
1,3-Dichloropropane	U	ND	0.585	1.13	ug/kg	1				
1,4-Dichlorobenzene	U	ND	0.416	1.13	ug/kg	1				
2,2-Dichloropropane	U	ND	0.371	1.13	ug/kg	1				
2-Butanone	U	ND	4.21	5.63	ug/kg	1				
2-Chlorotoluene	U	ND	0.416	1.13	ug/kg	1				
2-Hexanone	U	ND	4.24	5.63	ug/kg	1				
4-Chlorotoluene	U	ND	0.360	1.13	ug/kg	1				
4-Isopropyltoluene	U	ND	0.349	1.13	ug/kg	1				
4-Methyl-2-pentanone	U	ND	4.53	5.63	ug/kg	1				
Acetone	U	ND	3.96	5.63	ug/kg	1				
Benzene	U	ND	0.506	1.13	ug/kg	1				
Bromobenzene	U	ND	0.630	1.13	ug/kg	1				
Bromochloromethane	U	ND	0.563	1.13	ug/kg	1				
Bromodichloromethane	U	ND	0.551	1.13	ug/kg	1				
Bromoform	U	ND	0.551	1.13	ug/kg	1				
Bromomethane	U	ND	0.563	1.13	ug/kg	1				
Carbon disulfide	U	ND	2.66	5.63	ug/kg	1				
Carbon tetrachloride	U	ND	0.551	1.13	ug/kg	1				
Chlorobenzene	U	ND	0.461	1.13	ug/kg	1				
Chloroethane	U	ND	0.911	1.13	ug/kg	1				
Chloroform	U	ND	0.585	1.13	ug/kg	1				

Certificate of Analysis

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Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50315 01
Sample ID: 73190002

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Soil Federal										
Chloromethane	U	ND	0.416	1.13	ug/kg	1				
Dibromochloromethane	U	ND	0.563	1.13	ug/kg	1				
Dibromomethane	U	ND	0.540	1.13	ug/kg	1				
Dichlorodifluoromethane	U	ND	0.934	1.13	ug/kg	1				
Ethylbenzene	U	ND	0.428	1.13	ug/kg	1				
Iodomethane	U	ND	2.86	5.63	ug/kg	1				
Isopropylbenzene	U	ND	0.506	1.13	ug/kg	1				
Methylene chloride	U	ND	1.52	5.63	ug/kg	1				
Styrene	U	ND	0.439	1.13	ug/kg	1				
Tetrachloroethylene	U	ND	0.428	1.13	ug/kg	1				
Toluene	J	0.427	0.383	1.13	ug/kg	1				
Trichloroethylene	U	ND	0.506	1.13	ug/kg	1				
Trichlorofluoromethane	U	ND	0.563	1.13	ug/kg	1				
Trichlorotrifluoroethane	U	ND	2.81	5.63	ug/kg	1				
Vinyl chloride	U	ND	0.630	1.13	ug/kg	1				
cis-1,2-Dichloroethylene	U	ND	0.529	1.13	ug/kg	1				
cis-1,3-Dichloropropylene	U	ND	0.484	1.13	ug/kg	1				
m,p-Xylenes	U	ND	0.776	2.25	ug/kg	1				
n-Butylbenzene	U	ND	0.304	1.13	ug/kg	1				
n-Propylbenzene	U	ND	0.405	1.13	ug/kg	1				
o-Xylene	U	ND	0.439	1.13	ug/kg	1				
sec-Butylbenzene	U	ND	0.473	1.13	ug/kg	1				
tert-Butylbenzene	U	ND	0.484	1.13	ug/kg	1				
trans-1,2-Dichloroethylene	U	ND	0.596	1.13	ug/kg	1				
trans-1,3-Dichloropropylene	U	ND	0.281	1.13	ug/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Soil Federal	MAP	01/15/03	0921	227139
SW846 5030	Volatile 5030 Solid Prep	MAP	01/15/03	0600	227138

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	8260B Volatiles In Soil Federal	122%	(69%-138%)
Dibromofluoromethane	8260B Volatiles In Soil Federal	108%	(67%-137%)

Certificate of Analysis

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Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50315 01
Sample ID: 73190002

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Toluene-d8		8260B Volatiles In Soil Federal		112%		(67%-139%)				

Notes:
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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

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, Stacy Griffin.

Reviewed by

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50316 01
Sample ID: 73190003
Matrix: Soil
Collect Date: 09-JAN-03 00:00
Receive Date: 10-JAN-03
Collector: Client
Moisture: 4.81%

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Soil Federal										
1,1,1,2-Tetrachloroethane	U	ND	0.483	1.05	ug/kg	1	MAP 01/15/03	0947	227139	1
1,1,1-Trichloroethane	U	ND	0.557	1.05	ug/kg	1				
1,1,2,2-Tetrachloroethane	U	ND	0.956	1.05	ug/kg	1				
1,1,2-Trichloroethane	U	ND	0.567	1.05	ug/kg	1				
1,1-Dichloroethane	U	ND	0.494	1.05	ug/kg	1				
1,1-Dichloroethylene	U	ND	0.525	1.05	ug/kg	1				
1,1-Dichloropropene	U	ND	0.347	1.05	ug/kg	1				
1,2,3-Trichloropropane	U	ND	0.956	1.05	ug/kg	1				
1,2,4-Trimethylbenzene	U	ND	0.399	1.05	ug/kg	1				
1,2-Dibromo-3-chloropropane	U	ND	0.788	1.05	ug/kg	1				
1,2-Dibromoethane	U	ND	0.441	1.05	ug/kg	1				
1,2-Dichlorobenzene	U	ND	0.473	1.05	ug/kg	1				
1,2-Dichloroethane	U	ND	0.452	1.05	ug/kg	1				
1,2-Dichloropropane	U	ND	0.504	1.05	ug/kg	1				
1,3,5-Trimethylbenzene	U	ND	0.389	1.05	ug/kg	1				
1,3-Dichlorobenzene	U	ND	0.326	1.05	ug/kg	1				
1,3-Dichloropropane	U	ND	0.546	1.05	ug/kg	1				
1,4-Dichlorobenzene	U	ND	0.389	1.05	ug/kg	1				
2,2-Dichloropropane	U	ND	0.347	1.05	ug/kg	1				
2-Butanone	U	ND	3.93	5.25	ug/kg	1				
2-Chlorotoluene	U	ND	0.389	1.05	ug/kg	1				
2-Hexanone	U	ND	3.96	5.25	ug/kg	1				
4-Chlorotoluene	U	ND	0.336	1.05	ug/kg	1				
4-Isopropyltoluene	U	ND	0.326	1.05	ug/kg	1				
4-Methyl-2-pentanone	U	ND	4.23	5.25	ug/kg	1				
Acetone	U	ND	3.70	5.25	ug/kg	1				
Benzene	U	ND	0.473	1.05	ug/kg	1				
Bromobenzene	U	ND	0.588	1.05	ug/kg	1				
Bromochloromethane	U	ND	0.525	1.05	ug/kg	1				
Bromodichloromethane	U	ND	0.515	1.05	ug/kg	1				
Bromoform	U	ND	0.515	1.05	ug/kg	1				
Bromomethane	U	ND	0.525	1.05	ug/kg	1				
Carbon disulfide	U	ND	2.48	5.25	ug/kg	1				
Carbon tetrachloride	U	ND	0.515	1.05	ug/kg	1				
Chlorobenzene	U	ND	0.431	1.05	ug/kg	1				
Chloroethane	U	ND	0.851	1.05	ug/kg	1				
Chloroform	U	ND	0.546	1.05	ug/kg	1				

Certificate of Analysis

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Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50316 01
Sample ID: 73190003

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Soil Federal										
Chloromethane	U	ND	0.389	1.05	ug/kg	1				
Dibromochloromethane	U	ND	0.525	1.05	ug/kg	1				
Dibromomethane	U	ND	0.504	1.05	ug/kg	1				
Dichlorodifluoromethane	U	ND	0.872	1.05	ug/kg	1				
Ethylbenzene	U	ND	0.399	1.05	ug/kg	1				
Iodomethane	U	ND	2.67	5.25	ug/kg	1				
Isopropylbenzene	U	ND	0.473	1.05	ug/kg	1				
Methylene chloride	U	ND	1.42	5.25	ug/kg	1				
Styrene	U	ND	0.410	1.05	ug/kg	1				
Tetrachloroethylene	U	ND	0.399	1.05	ug/kg	1				
Toluene	U	ND	0.357	1.05	ug/kg	1				
Trichloroethylene	U	ND	0.473	1.05	ug/kg	1				
Trichlorofluoromethane	U	ND	0.525	1.05	ug/kg	1				
Trichlorotrifluoroethane	U	ND	2.63	5.25	ug/kg	1				
Vinyl chloride	U	ND	0.588	1.05	ug/kg	1				
cis-1,2-Dichloroethylene	U	ND	0.494	1.05	ug/kg	1				
cis-1,3-Dichloropropylene	U	ND	0.452	1.05	ug/kg	1				
m,p-Xylenes	U	ND	0.725	2.10	ug/kg	1				
n-Butylbenzene	U	ND	0.284	1.05	ug/kg	1				
n-Propylbenzene	U	ND	0.378	1.05	ug/kg	1				
o-Xylene	U	ND	0.410	1.05	ug/kg	1				
sec-Butylbenzene	U	ND	0.441	1.05	ug/kg	1				
tert-Butylbenzene	U	ND	0.452	1.05	ug/kg	1				
trans-1,2-Dichloroethylene	U	ND	0.557	1.05	ug/kg	1				
trans-1,3-Dichloropropylene	U	ND	0.263	1.05	ug/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Soil Federal	MAP	01/15/03	0947	227139
SW846 5030	Volatile 5030 Solid Prep	MAP	01/15/03	0600	227138

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	8260B Volatiles In Soil Federal	109%	(69%-138%)
Dibromofluoromethane	8260B Volatiles In Soil Federal	105%	(67%-137%)

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50316 01
Sample ID: 73190003

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Toluene-d8		8260B Volatiles In Soil Federal	105%		(67%-139%)					

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

< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

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, Stacy Griffin.

Reviewed by

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50334 01
Sample ID: 73190004
Matrix: Soil
Collect Date: 09-JAN-03 00:00
Receive Date: 10-JAN-03
Collector: Client
Moisture: <0.1%

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Soil Federal										
1,1,1,2-Tetrachloroethane	U	ND	0.460	1.00	ug/kg	1	MAP 01/15/03	1013	227139	1
1,1,1-Trichloroethane	U	ND	0.530	1.00	ug/kg	1				
1,1,2,2-Tetrachloroethane	U	ND	0.910	1.00	ug/kg	1				
1,1,2-Trichloroethane	U	ND	0.540	1.00	ug/kg	1				
1,1-Dichloroethane	U	ND	0.470	1.00	ug/kg	1				
1,1-Dichloroethylene	U	ND	0.500	1.00	ug/kg	1				
1,1-Dichloropropene	U	ND	0.330	1.00	ug/kg	1				
1,2,3-Trichloropropane	U	ND	0.910	1.00	ug/kg	1				
1,2,4-Trimethylbenzene	U	ND	0.380	1.00	ug/kg	1				
1,2-Dibromo-3-chloropropane	U	ND	0.750	1.00	ug/kg	1				
1,2-Dibromoethane	U	ND	0.420	1.00	ug/kg	1				
1,2-Dichlorobenzene	U	ND	0.450	1.00	ug/kg	1				
1,2-Dichloroethane	U	ND	0.430	1.00	ug/kg	1				
1,2-Dichloropropane	U	ND	0.480	1.00	ug/kg	1				
1,3,5-Trimethylbenzene	U	ND	0.370	1.00	ug/kg	1				
1,3-Dichlorobenzene	U	ND	0.310	1.00	ug/kg	1				
1,3-Dichloropropane	U	ND	0.520	1.00	ug/kg	1				
1,4-Dichlorobenzene	U	ND	0.370	1.00	ug/kg	1				
2,2-Dichloropropane	U	ND	0.330	1.00	ug/kg	1				
2-Butanone	U	ND	3.74	5.00	ug/kg	1				
2-Chlorotoluene	U	ND	0.370	1.00	ug/kg	1				
2-Hexanone	U	ND	3.77	5.00	ug/kg	1				
4-Chlorotoluene	U	ND	0.320	1.00	ug/kg	1				
4-Isopropyltoluene	U	ND	0.310	1.00	ug/kg	1				
4-Methyl-2-pentanone	U	ND	4.03	5.00	ug/kg	1				
Acetone	J	3.88	3.52	5.00	ug/kg	1				
Benzene	U	ND	0.450	1.00	ug/kg	1				
Bromobenzene	U	ND	0.560	1.00	ug/kg	1				
Bromochloromethane	U	ND	0.500	1.00	ug/kg	1				
Bromodichloromethane	U	ND	0.490	1.00	ug/kg	1				
Bromoform	U	ND	0.490	1.00	ug/kg	1				
Bromomethane	U	ND	0.500	1.00	ug/kg	1				
Carbon disulfide	U	ND	2.36	5.00	ug/kg	1				
Carbon tetrachloride	U	ND	0.490	1.00	ug/kg	1				
Chlorobenzene	U	ND	0.410	1.00	ug/kg	1				
Chloroethane	U	ND	0.810	1.00	ug/kg	1				
Chloroform	U	ND	0.520	1.00	ug/kg	1				

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50334 01
Sample ID: 73190004

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Soil Federal										
Chloromethane	U	ND	0.370	1.00	ug/kg	1				
Dibromochloromethane	U	ND	0.500	1.00	ug/kg	1				
Dibromomethane	U	ND	0.480	1.00	ug/kg	1				
Dichlorodifluoromethane	U	ND	0.830	1.00	ug/kg	1				
Ethylbenzene	U	ND	0.380	1.00	ug/kg	1				
Iodomethane	U	ND	2.54	5.00	ug/kg	1				
Isopropylbenzene	U	ND	0.450	1.00	ug/kg	1				
Methylene chloride	U	ND	1.35	5.00	ug/kg	1				
Styrene	U	ND	0.390	1.00	ug/kg	1				
Tetrachloroethylene	U	ND	0.380	1.00	ug/kg	1				
Toluene	U	ND	0.340	1.00	ug/kg	1				
Trichloroethylene	U	ND	0.450	1.00	ug/kg	1				
Trichlorofluoromethane	U	ND	0.500	1.00	ug/kg	1				
Trichlorotrifluoroethane	U	ND	2.50	5.00	ug/kg	1				
Vinyl chloride	U	ND	0.560	1.00	ug/kg	1				
cis-1,2-Dichloroethylene	U	ND	0.470	1.00	ug/kg	1				
cis-1,3-Dichloropropylene	U	ND	0.430	1.00	ug/kg	1				
m,p-Xylenes	U	ND	0.690	2.00	ug/kg	1				
n-Butylbenzene	U	ND	0.270	1.00	ug/kg	1				
n-Propylbenzene	U	ND	0.360	1.00	ug/kg	1				
o-Xylene	U	ND	0.390	1.00	ug/kg	1				
sec-Butylbenzene	U	ND	0.420	1.00	ug/kg	1				
tert-Butylbenzene	U	ND	0.430	1.00	ug/kg	1				
trans-1,2-Dichloroethylene	U	ND	0.530	1.00	ug/kg	1				
trans-1,3-Dichloropropylene	U	ND	0.250	1.00	ug/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Soil Federal	MAP	01/15/03	1013	227139
SW846 5030	Volatile 5030 Solid Prep	MAP	01/15/03	0600	227138

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	8260B Volatiles In Soil Federal	99%	(69%-138%)
Dibromofluoromethane	8260B Volatiles In Soil Federal	104%	(67%-137%)

Certificate of Analysis

Company : Los Alamos National Lab
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Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50334 01
Sample ID: 73190004

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Toluene-d8		8260B Volatiles In Soil Federal		99%		(67%-139%)				

Notes:
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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

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, Stacy Griffin.

Reviewed by

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50335 01
Sample ID: 73190005
Matrix: Soil
Collect Date: 09-JAN-03 00:00
Receive Date: 10-JAN-03
Collector: Client
Moisture: <0.1%

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Soil Federal										
1,1,1,2-Tetrachloroethane	U	ND	0.460	1.00	ug/kg	1	MAP 01/15/03	1040	227139	1
1,1,1-Trichloroethane	U	ND	0.530	1.00	ug/kg	1				
1,1,2,2-Tetrachloroethane	U	ND	0.910	1.00	ug/kg	1				
1,1,2-Trichloroethane	U	ND	0.540	1.00	ug/kg	1				
1,1-Dichloroethane	U	ND	0.470	1.00	ug/kg	1				
1,1-Dichloroethylene	U	ND	0.500	1.00	ug/kg	1				
1,1-Dichloropropene	U	ND	0.330	1.00	ug/kg	1				
1,2,3-Trichloropropane	U	ND	0.910	1.00	ug/kg	1				
1,2,4-Trimethylbenzene	U	ND	0.380	1.00	ug/kg	1				
1,2-Dibromo-3-chloropropane	U	ND	0.750	1.00	ug/kg	1				
1,2-Dibromoethane	U	ND	0.420	1.00	ug/kg	1				
1,2-Dichlorobenzene	U	ND	0.450	1.00	ug/kg	1				
1,2-Dichloroethane	U	ND	0.430	1.00	ug/kg	1				
1,2-Dichloropropane	U	ND	0.480	1.00	ug/kg	1				
1,3,5-Trimethylbenzene	U	ND	0.370	1.00	ug/kg	1				
1,3-Dichlorobenzene	U	ND	0.310	1.00	ug/kg	1				
1,3-Dichloropropane	U	ND	0.520	1.00	ug/kg	1				
1,4-Dichlorobenzene	U	ND	0.370	1.00	ug/kg	1				
2,2-Dichloropropane	U	ND	0.330	1.00	ug/kg	1				
2-Butanone	U	ND	3.74	5.00	ug/kg	1				
2-Chlorotoluene	U	ND	0.370	1.00	ug/kg	1				
2-Hexanone	U	ND	3.77	5.00	ug/kg	1				
4-Chlorotoluene	U	ND	0.320	1.00	ug/kg	1				
4-Isopropyltoluene	U	ND	0.310	1.00	ug/kg	1				
4-Methyl-2-pentanone	U	ND	4.03	5.00	ug/kg	1				
Acetone	U	ND	3.52	5.00	ug/kg	1				
Benzene	U	ND	0.450	1.00	ug/kg	1				
Bromobenzene	U	ND	0.560	1.00	ug/kg	1				
Bromochloromethane	U	ND	0.500	1.00	ug/kg	1				
Bromodichloromethane	U	ND	0.490	1.00	ug/kg	1				
Bromoform	U	ND	0.490	1.00	ug/kg	1				
Bromomethane	U	ND	0.500	1.00	ug/kg	1				
Carbon disulfide	U	ND	2.36	5.00	ug/kg	1				
Carbon tetrachloride	U	ND	0.490	1.00	ug/kg	1				
Chlorobenzene	U	ND	0.410	1.00	ug/kg	1				
Chloroethane	U	ND	0.810	1.00	ug/kg	1				
Chloroform	U	ND	0.520	1.00	ug/kg	1				

Certificate of Analysis

Company : Los Alamos National Lab
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TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50335 01
Sample ID: 73190005

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Soil Federal										
Chloromethane	U	ND	0.370	1.00	ug/kg	1				
Dibromochloromethane	U	ND	0.500	1.00	ug/kg	1				
Dibromomethane	U	ND	0.480	1.00	ug/kg	1				
Dichlorodifluoromethane	U	ND	0.830	1.00	ug/kg	1				
Ethylbenzene	U	ND	0.380	1.00	ug/kg	1				
Iodomethane	U	ND	2.54	5.00	ug/kg	1				
Isopropylbenzene	U	ND	0.450	1.00	ug/kg	1				
Methylene chloride	U	ND	1.35	5.00	ug/kg	1				
Styrene	U	ND	0.390	1.00	ug/kg	1				
Tetrachloroethylene	U	ND	0.380	1.00	ug/kg	1				
Toluene	U	ND	0.340	1.00	ug/kg	1				
Trichloroethylene	U	ND	0.450	1.00	ug/kg	1				
Trichlorofluoromethane	U	ND	0.500	1.00	ug/kg	1				
Trichlorotrifluoroethane	U	ND	2.50	5.00	ug/kg	1				
Vinyl chloride	U	ND	0.560	1.00	ug/kg	1				
cis-1,2-Dichloroethylene	U	ND	0.470	1.00	ug/kg	1				
cis-1,3-Dichloropropylene	U	ND	0.430	1.00	ug/kg	1				
m,p-Xylenes	U	ND	0.690	2.00	ug/kg	1				
n-Butylbenzene	U	ND	0.270	1.00	ug/kg	1				
n-Propylbenzene	U	ND	0.360	1.00	ug/kg	1				
o-Xylene	U	ND	0.390	1.00	ug/kg	1				
sec-Butylbenzene	U	ND	0.420	1.00	ug/kg	1				
tert-Butylbenzene	U	ND	0.430	1.00	ug/kg	1				
trans-1,2-Dichloroethylene	U	ND	0.530	1.00	ug/kg	1				
trans-1,3-Dichloropropylene	U	ND	0.250	1.00	ug/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Soil Federal	MAP	01/15/03	1040	227139
SW846 5030	Volatile 5030 Solid Prep	MAP	01/15/03	0600	227138

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	8260B Volatiles In Soil Federal	102%	(69%-138%)
Dibromofluoromethane	8260B Volatiles In Soil Federal	106%	(67%-137%)

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50335 01
Sample ID: 73190005

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Toluene-d8		8260B Volatiles In Soil Federal		103%		(67%-139%)				

Notes:
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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

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, Stacy Griffin.

Reviewed by

QC Summary

Report Date: January 17, 2003

Client : Los Alamos National Lab
PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico
Contact: Keith Greene

Workorder: 73190

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS Federal										
Batch 227139										
QC1200364442 LCS										
1,1-Dichloroethylene	50.0			53.0	ug/kg		106	(75%-134%)	MAP	01/15/03 06:18
Benzene	50.0			48.4	ug/kg		97	(80%-120%)		
Chlorobenzene	50.0			50.4	ug/kg		101	(82%-118%)		
Toluene	50.0			51.3	ug/kg		103	(74%-115%)		
Trichloroethylene	50.0			54.2	ug/kg		108	(80%-119%)		
**Bromofluorobenzene	50.0			54.0	ug/kg		108	(69%-138%)		
**Dibromofluoromethane	50.0			55.6	ug/kg		111	(67%-137%)		
**Toluene-d8	50.0			53.7	ug/kg		107	(67%-139%)		
QC1200365245 LCS										
1,1-Dichloroethylene	50.0			51.5	ug/kg		103	(75%-134%)		01/16/03 09:12
Benzene	50.0			47.9	ug/kg		96	(80%-120%)		
Chlorobenzene	50.0			51.0	ug/kg		102	(82%-118%)		
Toluene	50.0			52.2	ug/kg		104	(74%-115%)		
Trichloroethylene	50.0			54.3	ug/kg		109	(80%-119%)		
**Bromofluorobenzene	50.0			50.4	ug/kg		101	(69%-138%)		
**Dibromofluoromethane	50.0			53.0	ug/kg		106	(67%-137%)		
**Toluene-d8	50.0			53.3	ug/kg		107	(67%-139%)		
QC1200364441 MB										
1,1,1,2-Tetrachloroethane			U	1.00	ug/kg					01/15/03 07:49
1,1,1-Trichloroethane			U	1.00	ug/kg					
1,1,2,2-Tetrachloroethane			U	1.00	ug/kg					
1,1,2-Trichloroethane			U	1.00	ug/kg					
1,1-Dichloroethane			U	1.00	ug/kg					
1,1-Dichloroethylene			U	1.00	ug/kg					
1,1-Dichloropropene			U	1.00	ug/kg					
1,2,3-Trichloropropane			U	1.00	ug/kg					
1,2,4-Trimethylbenzene			U	1.00	ug/kg					
1,2-Dibromo-3-chloropropane			U	1.00	ug/kg					
1,2-Dibromoethane			U	1.00	ug/kg					
1,2-Dichlorobenzene			U	1.00	ug/kg					
1,2-Dichloroethane			U	1.00	ug/kg					
1,2-Dichloropropane			U	1.00	ug/kg					
1,3,5-Trimethylbenzene			U	1.00	ug/kg					
1,3-Dichlorobenzene			U	1.00	ug/kg					
1,3-Dichloropropane			U	1.00	ug/kg					
1,4-Dichlorobenzene			U	1.00	ug/kg					
2,2-Dichloropropane			U	1.00	ug/kg					
2-Butanone			U	5.00	ug/kg					
2-Chlorotoluene			U	1.00	ug/kg					
2-Hexanone			U	5.00	ug/kg					
4-Chlorotoluene			U	1.00	ug/kg					
4-Isopropyltoluene			U	1.00	ug/kg					

QC Summary

Workorder: 73190

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS Federal											
Batch 227139											
4-Methyl-2-pentanone			U	5.00	ug/kg						
Acetone			U	5.00	ug/kg						
Benzene			U	1.00	ug/kg						
Bromobenzene			U	1.00	ug/kg						
Bromochloromethane			U	1.00	ug/kg						
Bromodichloromethane			U	1.00	ug/kg						
Bromoform			U	1.00	ug/kg						
Bromomethane			U	1.00	ug/kg						
Carbon disulfide			U	5.00	ug/kg						
Carbon tetrachloride			U	1.00	ug/kg						
Chlorobenzene			U	1.00	ug/kg						
Chloroethane			U	1.00	ug/kg						
Chloroform			U	1.00	ug/kg						
Chloromethane			U	1.00	ug/kg						
Dibromochloromethane			U	1.00	ug/kg						
Dibromomethane			U	1.00	ug/kg						
Dichlorodifluoromethane			U	1.00	ug/kg						
Ethylbenzene			U	1.00	ug/kg						
Iodomethane			U	5.00	ug/kg						
Isopropylbenzene			U	1.00	ug/kg						
Methylene chloride			U	5.00	ug/kg						
Styrene			U	1.00	ug/kg						
Tetrachloroethylene			U	1.00	ug/kg						
Toluene			U	1.00	ug/kg						
Trichloroethylene			U	1.00	ug/kg						
Trichlorofluoromethane			U	1.00	ug/kg						
Trichlorotrifluoroethane			U	5.00	ug/kg						
Vinyl chloride			U	1.00	ug/kg						
cis-1,2-Dichloroethylene			U	1.00	ug/kg						
cis-1,3-Dichloropropylene			U	1.00	ug/kg						
m,p-Xylenes			U	2.00	ug/kg						
n-Butylbenzene			U	1.00	ug/kg						
n-Propylbenzene			U	1.00	ug/kg						
o-Xylene			U	1.00	ug/kg						
sec-Butylbenzene			U	1.00	ug/kg						
tert-Butylbenzene			U	1.00	ug/kg						
trans-1,2-Dichloroethylene			U	1.00	ug/kg						
trans-1,3-Dichloropropylene			U	1.00	ug/kg						
**Bromofluorobenzene	50.0			52.2	ug/kg		104	(69%-138%)			
**Dibromofluoromethane	50.0			55.5	ug/kg		111	(67%-137%)			
**Toluene-d8	50.0			54.1	ug/kg		108	(67%-139%)			
QC1200365244 MB											
1,1,1,2-Tetrachloroethane			U	1.00	ug/kg					01/16/03	10:31
1,1,1-Trichloroethane			U	1.00	ug/kg						
1,1,2,2-Tetrachloroethane			U	1.00	ug/kg						
1,1,2-Trichloroethane			U	1.00	ug/kg						
1,1-Dichloroethane			U	1.00	ug/kg						
1,1-Dichloroethylene			U	1.00	ug/kg						

QC Summary

Workorder: 73190

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS Federal											
Batch 227139											
1,1-Dichloropropene			U	1.00	ug/kg						
1,2,3-Trichloropropane			U	1.00	ug/kg						
1,2,4-Trimethylbenzene			U	1.00	ug/kg						
1,2-Dibromo-3-chloropropane			U	1.00	ug/kg						
1,2-Dibromoethane			U	1.00	ug/kg						
1,2-Dichlorobenzene			U	1.00	ug/kg						
1,2-Dichloroethane			U	1.00	ug/kg						
1,2-Dichloropropane			U	1.00	ug/kg						
1,3,5-Trimethylbenzene			U	1.00	ug/kg						
1,3-Dichlorobenzene			U	1.00	ug/kg						
1,3-Dichloropropane			U	1.00	ug/kg						
1,4-Dichlorobenzene			U	1.00	ug/kg						
2,2-Dichloropropane			U	1.00	ug/kg						
2-Butanone			U	5.00	ug/kg						
2-Chlorotoluene			U	1.00	ug/kg						
2-Hexanone			U	5.00	ug/kg						
4-Chlorotoluene			U	1.00	ug/kg						
4-Isopropyltoluene			U	1.00	ug/kg						
4-Methyl-2-pentanone			U	5.00	ug/kg						
Acetone			U	5.00	ug/kg						
Benzene			U	1.00	ug/kg						
Bromobenzene			U	1.00	ug/kg						
Bromochloromethane			U	1.00	ug/kg						
Bromodichloromethane			U	1.00	ug/kg						
Bromoform			U	1.00	ug/kg						
Bromomethane			U	1.00	ug/kg						
Carbon disulfide			U	5.00	ug/kg						
Carbon tetrachloride			U	1.00	ug/kg						
Chlorobenzene			U	1.00	ug/kg						
Chloroethane			U	1.00	ug/kg						
Chloroform			U	1.00	ug/kg						
Chloromethane			U	1.00	ug/kg						
Dibromochloromethane			U	1.00	ug/kg						
Dibromomethane			U	1.00	ug/kg						
Dichlorodifluoromethane			U	1.00	ug/kg						
Ethylbenzene			U	1.00	ug/kg						
Iodomethane			U	5.00	ug/kg						
Isopropylbenzene			U	1.00	ug/kg						
Methylene chloride			U	5.00	ug/kg						
Styrene			U	1.00	ug/kg						
Tetrachloroethylene			U	1.00	ug/kg						
Toluene			U	1.00	ug/kg						
Trichloroethylene			U	1.00	ug/kg						
Trichlorofluoromethane			U	1.00	ug/kg						
Trichlorotrifluoroethane			U	5.00	ug/kg						
Vinyl chloride			U	1.00	ug/kg						
cis-1,2-Dichloroethylene			U	1.00	ug/kg						
cis-1,3-Dichloropropylene			U	1.00	ug/kg						

QC Summary

Workorder: 73190

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS Federal											
Batch 227139											
m,p-Xylenes				U	2.00	ug/kg					
n-Butylbenzene				U	1.00	ug/kg					
n-Propylbenzene				U	1.00	ug/kg					
o-Xylene				U	1.00	ug/kg					
sec-Butylbenzene				U	1.00	ug/kg					
tert-Butylbenzene				U	1.00	ug/kg					
trans-1,2-Dichloroethylene				U	1.00	ug/kg					
trans-1,3-Dichloropropylene				U	1.00	ug/kg					
**Bromofluorobenzene	50.0				50.2	ug/kg		100	(69%-138%)		
**Dibromofluoromethane	50.0				53.7	ug/kg		107	(67%-137%)		
**Toluene-d8	50.0				52.2	ug/kg		104	(67%-139%)		
QC1200364443 73190004 PS											
1,1-Dichloroethylene	50.0	U	ND		49.8	ug/L		100	(55%-128%)		01/15/03 12:53
Benzene	50.0	U	ND		45.5	ug/L		91	(53%-118%)		
Chlorobenzene	50.0	U	ND		48.2	ug/L		96	(53%-116%)		
Toluene	50.0	U	ND		48.0	ug/L		96	(56%-113%)		
Trichloroethylene	50.0	U	ND		52.0	ug/L		104	(54%-119%)		
**Bromofluorobenzene	50.0		49.3		50.5	ug/L		101	(69%-138%)		
**Dibromofluoromethane	50.0		51.8		53.4	ug/L		107	(67%-137%)		
**Toluene-d8	50.0		49.3		51.5	ug/L		103	(67%-139%)		
QC1200364444 73190004 PSD											
1,1-Dichloroethylene	50.0	U	ND		46.2	ug/L	7	93	(0%-21%)		01/15/03 13:19
Benzene	50.0	U	ND		43.2	ug/L	5	87	(0%-17%)		
Chlorobenzene	50.0	U	ND		45.9	ug/L	5	92	(0%-21%)		
Toluene	50.0	U	ND		45.4	ug/L	6	91	(0%-25%)		
Trichloroethylene	50.0	U	ND		47.8	ug/L	8	96	(0%-25%)		
**Bromofluorobenzene	50.0		49.3		50.1	ug/L		100	(69%-138%)		
**Dibromofluoromethane	50.0		51.8		51.2	ug/L		102	(67%-137%)		
**Toluene-d8	50.0		49.3		49.8	ug/L		100	(67%-139%)		

Notes:
RER is calculated at the 95% confidence level (2-sigma).
The Qualifiers in this report are defined as follows:

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

QC Summary

Workorder: 73190

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptence criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

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 QC Summary.

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50324 01
Sample ID: 73192001
Matrix: Water
Collect Date: 09-JAN-03 00:00
Receive Date: 10-JAN-03
Collector: Client

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Liquid Federal										
1,1,1,2-Tetrachloroethane	U	ND	0.300	1.00	ug/L	1	MAP 01/15/03	1514	227204	1
1,1,1-Trichloroethane	U	ND	0.340	1.00	ug/L	1				
1,1,2,2-Tetrachloroethane	U	ND	0.490	1.00	ug/L	1				
1,1,2-Trichloroethane	U	ND	0.440	1.00	ug/L	1				
1,1-Dichloroethane	U	ND	0.410	1.00	ug/L	1				
1,1-Dichloroethylene	U	ND	0.410	1.00	ug/L	1				
1,1-Dichloropropene	U	ND	0.440	1.00	ug/L	1				
1,2,3-Trichloropropane	U	ND	0.600	1.00	ug/L	1				
1,2,4-Trimethylbenzene	U	ND	0.250	1.00	ug/L	1				
1,2-Dibromo-3-chloropropane	U	ND	0.750	1.00	ug/L	1				
1,2-Dibromoethane	U	ND	0.250	1.00	ug/L	1				
1,2-Dichlorobenzene	U	ND	0.360	1.00	ug/L	1				
1,2-Dichloroethane	U	ND	0.290	1.00	ug/L	1				
1,2-Dichloropropane	U	ND	0.250	1.00	ug/L	1				
1,3,5-Trimethylbenzene	U	ND	0.250	1.00	ug/L	1				
1,3-Dichlorobenzene	U	ND	0.330	1.00	ug/L	1				
1,3-Dichloropropane	U	ND	0.300	1.00	ug/L	1				
1,4-Dichlorobenzene	U	ND	0.250	1.00	ug/L	1				
2,2-Dichloropropane	U	ND	0.500	1.00	ug/L	1				
2-Butanone	U	ND	2.31	5.00	ug/L	1				
2-Chlorotoluene	U	ND	0.280	1.00	ug/L	1				
2-Hexanone	U	ND	1.45	5.00	ug/L	1				
4-Chlorotoluene	U	ND	0.250	1.00	ug/L	1				
4-Isopropyltoluene	U	ND	0.270	1.00	ug/L	1				
4-Methyl-2-pentanone	U	ND	1.78	5.00	ug/L	1				
Acetone		5.12	2.29	5.00	ug/L	1				
Benzene	U	ND	0.330	1.00	ug/L	1				
Bromobenzene	U	ND	0.270	1.00	ug/L	1				
Bromochloromethane	U	ND	0.500	1.00	ug/L	1				
Bromodichloromethane	U	ND	0.380	1.00	ug/L	1				
Bromoform	U	ND	0.500	1.00	ug/L	1				
Bromomethane	U	ND	0.500	1.00	ug/L	1				
Carbon disulfide	U	ND	1.91	5.00	ug/L	1				
Carbon tetrachloride	U	ND	0.290	1.00	ug/L	1				
Chlorobenzene	U	ND	0.320	1.00	ug/L	1				
Chloroethane	U	ND	0.500	1.00	ug/L	1				
Chloroform	J	0.376	0.360	1.00	ug/L	1				

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50324 01
Sample ID: 73192001

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Liquid Federal										
Chloromethane	U	ND	0.500	1.00	ug/L	1				
Dibromochloromethane	U	ND	0.290	1.00	ug/L	1				
Dibromomethane	U	ND	0.500	1.00	ug/L	1				
Dichlorodifluoromethane	U	ND	0.430	1.00	ug/L	1				
Ethylbenzene	U	ND	0.210	1.00	ug/L	1				
Iodomethane	U	ND	1.88	5.00	ug/L	1				
Isopropylbenzene	U	ND	0.290	1.00	ug/L	1				
Methylene chloride	U	ND	1.90	5.00	ug/L	1				
Styrene	U	ND	0.250	1.00	ug/L	1				
Tetrachloroethylene	U	ND	0.330	1.00	ug/L	1				
Toluene	U	ND	0.390	1.00	ug/L	1				
Trichloroethylene	U	ND	0.360	1.00	ug/L	1				
Trichlorofluoromethane	U	ND	0.500	1.00	ug/L	1				
Trichlorotrifluoroethane	U	ND	2.50	5.00	ug/L	1				
Vinyl chloride	U	ND	0.550	1.00	ug/L	1				
cis-1,2-Dichloroethylene	U	ND	0.300	1.00	ug/L	1				
cis-1,3-Dichloropropylene	U	ND	0.300	1.00	ug/L	1				
m,p-Xylenes	U	ND	0.600	2.00	ug/L	1				
n-Butylbenzene	U	ND	0.250	1.00	ug/L	1				
n-Propylbenzene	U	ND	0.250	1.00	ug/L	1				
o-Xylene	U	ND	0.250	1.00	ug/L	1				
sec-Butylbenzene	U	ND	0.300	1.00	ug/L	1				
tert-Butylbenzene	U	ND	0.250	1.00	ug/L	1				
trans-1,2-Dichloroethylene	U	ND	0.370	1.00	ug/L	1				
trans-1,3-Dichloropropylene	U	ND	0.290	1.00	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Liquid Federal	MAP	01/15/03	1514	227204

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	8260B Volatiles In Liquid Federal	105%	(67%-136%)
Dibromofluoromethane	8260B Volatiles In Liquid Federal	109%	(62%-148%)
Toluene-d8	8260B Volatiles In Liquid Federal	101%	(58%-139%)

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50324 01
Sample ID: 73192001

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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

< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

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, Stacy Griffin.

Reviewed by

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50325 01/02
Sample ID: 73192002
Matrix: Water
Collect Date: 09-JAN-03 00:00
Receive Date: 10-JAN-03
Collector: Client

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Liquid Federal										
1,1,1,2-Tetrachloroethane	U	ND	0.300	1.00	ug/L	1	MAP 01/15/03	1541	227204	1
1,1,1-Trichloroethane	U	ND	0.340	1.00	ug/L	1				
1,1,2,2-Tetrachloroethane	U	ND	0.490	1.00	ug/L	1				
1,1,2-Trichloroethane	U	ND	0.440	1.00	ug/L	1				
1,1-Dichloroethane	U	ND	0.410	1.00	ug/L	1				
1,1-Dichloroethylene	U	ND	0.410	1.00	ug/L	1				
1,1-Dichloropropene	U	ND	0.440	1.00	ug/L	1				
1,2,3-Trichloropropane	U	ND	0.600	1.00	ug/L	1				
1,2,4-Trimethylbenzene	U	ND	0.250	1.00	ug/L	1				
1,2-Dibromo-3-chloropropane	U	ND	0.750	1.00	ug/L	1				
1,2-Dibromoethane	U	ND	0.250	1.00	ug/L	1				
1,2-Dichlorobenzene	U	ND	0.360	1.00	ug/L	1				
1,2-Dichloroethane	U	ND	0.290	1.00	ug/L	1				
1,2-Dichloropropane	U	ND	0.250	1.00	ug/L	1				
1,3,5-Trimethylbenzene	U	ND	0.250	1.00	ug/L	1				
1,3-Dichlorobenzene	U	ND	0.330	1.00	ug/L	1				
1,3-Dichloropropane	U	ND	0.300	1.00	ug/L	1				
1,4-Dichlorobenzene	U	ND	0.250	1.00	ug/L	1				
2,2-Dichloropropane	U	ND	0.500	1.00	ug/L	1				
2-Butanone	U	ND	2.31	5.00	ug/L	1				
2-Chlorotoluene	U	ND	0.280	1.00	ug/L	1				
2-Hexanone	U	ND	1.45	5.00	ug/L	1				
4-Chlorotoluene	U	ND	0.250	1.00	ug/L	1				
4-Isopropyltoluene	U	ND	0.270	1.00	ug/L	1				
4-Methyl-2-pentanone	U	ND	1.78	5.00	ug/L	1				
Acetone		5.95	2.29	5.00	ug/L	1				
Benzene	U	ND	0.330	1.00	ug/L	1				
Bromobenzene	U	ND	0.270	1.00	ug/L	1				
Bromochloromethane	U	ND	0.500	1.00	ug/L	1				
Bromodichloromethane	U	ND	0.380	1.00	ug/L	1				
Bromoform	U	ND	0.500	1.00	ug/L	1				
Bromomethane	U	ND	0.500	1.00	ug/L	1				
Carbon disulfide	U	ND	1.91	5.00	ug/L	1				
Carbon tetrachloride	U	ND	0.290	1.00	ug/L	1				
Chlorobenzene	U	ND	0.320	1.00	ug/L	1				
Chloroethane	U	ND	0.500	1.00	ug/L	1				
Chloroform	J	0.465	0.360	1.00	ug/L	1				
Chloromethane	U	ND	0.500	1.00	ug/L	1				

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50325 01/02
Sample ID: 73192002

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Liquid Federal										
Dibromochloromethane	J	0.312	0.290	1.00	ug/L	1				
Dibromomethane	U	ND	0.500	1.00	ug/L	1				
Dichlorodifluoromethane	U	ND	0.430	1.00	ug/L	1				
Ethylbenzene	U	ND	0.210	1.00	ug/L	1				
Iodomethane	U	ND	1.88	5.00	ug/L	1				
Isopropylbenzene	U	ND	0.290	1.00	ug/L	1				
Methylene chloride	U	ND	1.90	5.00	ug/L	1				
Styrene	U	ND	0.250	1.00	ug/L	1				
Tetrachloroethylene	U	ND	0.330	1.00	ug/L	1				
Toluene	U	ND	0.390	1.00	ug/L	1				
Trichloroethylene	U	ND	0.360	1.00	ug/L	1				
Trichlorofluoromethane	U	ND	0.500	1.00	ug/L	1				
Trichlorotrifluoroethane	U	ND	2.50	5.00	ug/L	1				
Vinyl chloride	U	ND	0.550	1.00	ug/L	1				
cis-1,2-Dichloroethylene	U	ND	0.300	1.00	ug/L	1				
cis-1,3-Dichloropropylene	U	ND	0.300	1.00	ug/L	1				
m,p-Xylenes	U	ND	0.600	2.00	ug/L	1				
n-Butylbenzene	U	ND	0.250	1.00	ug/L	1				
n-Propylbenzene	U	ND	0.250	1.00	ug/L	1				
o-Xylene	U	ND	0.250	1.00	ug/L	1				
sec-Butylbenzene	U	ND	0.300	1.00	ug/L	1				
tert-Butylbenzene	U	ND	0.250	1.00	ug/L	1				
trans-1,2-Dichloroethylene	U	ND	0.370	1.00	ug/L	1				
trans-1,3-Dichloropropylene	U	ND	0.290	1.00	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Liquid Federal	MAP	01/15/03	1541	227204

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	8260B Volatiles In Liquid Federal	102%	(67%-136%)
Dibromofluoromethane	8260B Volatiles In Liquid Federal	107%	(62%-148%)
Toluene-d8	8260B Volatiles In Liquid Federal	103%	(58%-139%)

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
TA-3, Bldg. 271, Drop Pt. 01U
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50325 01/02
Sample ID: 73192002

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

Notes:
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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

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Reviewed by

Certificate of Analysis

Company : Los Alamos National Lab
Address : PO Box 1663
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Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL ER Contract

Report Date: January 17, 2003

Client Sample ID: MD21-03-50326 01/02
Sample ID: 73192003
Matrix: Water
Collect Date: 09-JAN-03 00:00
Receive Date: 10-JAN-03
Collector: Client

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Liquid Federal										
1,1,1,2-Tetrachloroethane	U	ND	0.300	1.00	ug/L	1	MAP 01/15/03	1607	227204	1
1,1,1-Trichloroethane	U	ND	0.340	1.00	ug/L	1				
1,1,2,2-Tetrachloroethane	U	ND	0.490	1.00	ug/L	1				
1,1,2-Trichloroethane	U	ND	0.440	1.00	ug/L	1				
1,1-Dichloroethane	U	ND	0.410	1.00	ug/L	1				
1,1-Dichloroethylene	U	ND	0.410	1.00	ug/L	1				
1,1-Dichloropropene	U	ND	0.440	1.00	ug/L	1				
1,2,3-Trichloropropane	U	ND	0.600	1.00	ug/L	1				
1,2,4-Trimethylbenzene	U	ND	0.250	1.00	ug/L	1				
1,2-Dibromo-3-chloropropane	U	ND	0.750	1.00	ug/L	1				
1,2-Dibromoethane	U	ND	0.250	1.00	ug/L	1				
1,2-Dichlorobenzene	U	ND	0.360	1.00	ug/L	1				
1,2-Dichloroethane	U	ND	0.290	1.00	ug/L	1				
1,2-Dichloropropane	U	ND	0.250	1.00	ug/L	1				
1,3,5-Trimethylbenzene	U	ND	0.250	1.00	ug/L	1				
1,3-Dichlorobenzene	U	ND	0.330	1.00	ug/L	1				
1,3-Dichloropropane	U	ND	0.300	1.00	ug/L	1				
1,4-Dichlorobenzene	U	ND	0.250	1.00	ug/L	1				
2,2-Dichloropropane	U	ND	0.500	1.00	ug/L	1				
2-Butanone	U	ND	2.31	5.00	ug/L	1				
2-Chlorotoluene	U	ND	0.280	1.00	ug/L	1				
2-Hexanone	U	ND	1.45	5.00	ug/L	1				
4-Chlorotoluene	U	ND	0.250	1.00	ug/L	1				
4-Isopropyltoluene	U	ND	0.270	1.00	ug/L	1				
4-Methyl-2-pentanone	U	ND	1.78	5.00	ug/L	1				
Acetone		5.44	2.29	5.00	ug/L	1				
Benzene	U	ND	0.330	1.00	ug/L	1				
Bromobenzene	U	ND	0.270	1.00	ug/L	1				
Bromochloromethane	U	ND	0.500	1.00	ug/L	1				
Bromodichloromethane	U	ND	0.380	1.00	ug/L	1				
Bromoform	U	ND	0.500	1.00	ug/L	1				
Bromomethane	U	ND	0.500	1.00	ug/L	1				
Carbon disulfide	U	ND	1.91	5.00	ug/L	1				
Carbon tetrachloride	U	ND	0.290	1.00	ug/L	1				
Chlorobenzene	U	ND	0.320	1.00	ug/L	1				
Chloroethane	U	ND	0.500	1.00	ug/L	1				
Chloroform	J	0.426	0.360	1.00	ug/L	1				
Chloromethane	U	ND	0.500	1.00	ug/L	1				

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Client Sample ID: MD21-03-50326 01/02
Sample ID: 73192003

Project: LANL00101
Client ID: LANL004

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
8260B Volatiles In Liquid Federal										
Dibromochloromethane	U	ND	0.290	1.00	ug/L	1				
Dibromomethane	U	ND	0.500	1.00	ug/L	1				
Dichlorodifluoromethane	U	ND	0.430	1.00	ug/L	1				
Ethylbenzene	U	ND	0.210	1.00	ug/L	1				
Iodomethane	U	ND	1.88	5.00	ug/L	1				
Isopropylbenzene	U	ND	0.290	1.00	ug/L	1				
Methylene chloride	U	ND	1.90	5.00	ug/L	1				
Styrene	U	ND	0.250	1.00	ug/L	1				
Tetrachloroethylene	U	ND	0.330	1.00	ug/L	1				
Toluene	U	ND	0.390	1.00	ug/L	1				
Trichloroethylene	U	ND	0.360	1.00	ug/L	1				
Trichlorofluoromethane	U	ND	0.500	1.00	ug/L	1				
Trichlorotrifluoroethane	U	ND	2.50	5.00	ug/L	1				
Vinyl chloride	U	ND	0.550	1.00	ug/L	1				
cis-1,2-Dichloroethylene	U	ND	0.300	1.00	ug/L	1				
cis-1,3-Dichloropropylene	U	ND	0.300	1.00	ug/L	1				
m,p-Xylenes	U	ND	0.600	2.00	ug/L	1				
n-Butylbenzene	U	ND	0.250	1.00	ug/L	1				
n-Propylbenzene	U	ND	0.250	1.00	ug/L	1				
o-Xylene	U	ND	0.250	1.00	ug/L	1				
sec-Butylbenzene	U	ND	0.300	1.00	ug/L	1				
tert-Butylbenzene	U	ND	0.250	1.00	ug/L	1				
trans-1,2-Dichloroethylene	U	ND	0.370	1.00	ug/L	1				
trans-1,3-Dichloropropylene	U	ND	0.290	1.00	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Liquid Federal	MAP	01/15/03	1607	227204

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
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Project: LANL00101
Client ID: LANL004

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