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C.H.

THE MEMPHIS DEPOT
TENNESSEE

ADMINISTRATIVE RECORD
COVER SHEET

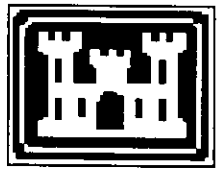
AR File Number 637

Decontamination Report and Certification for Closure of Permitted Container Storage Facility (Building T-308)

Former Defense Distribution Depot Memphis, TN

November 2001

Prepared for



Mobile District COE
Contract No. DACA01-99-D-0040
Delivery Order 0007

Prepared by:
Jacobs Engineering Group
Maryland Heights, Missouri
and
STEP Inc.
Oak Ridge, Tennessee

Certification Page

I certify that the permitted container storage facility (Building T-308) at the Former Defense Depot Memphis, Memphis, Tennessee, Facility ID No. TN4 210020570, Permit No THHW-053 has been decontaminated in accordance with the facility closure plan.

Sealed by:
Professional
Engineer

Roy Hoekstra, STEP, Inc. — 12/6/01 Date

Approved:

John DeBack, Former DDMT — 12/12/01 Date

Table of Contents

Appendices

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE) Mobile District selected Jacobs Engineering Group, Inc. (JEG) to perform decontamination services at Building T308 at the Former Defense Distribution Depot in Memphis, Tennessee (Memphis Depot) Solutions To Environmental Problems, Inc. (STEP) was the prime subcontractor to JEG for this effort

1.1 SITE BACKGROUND/DESCRIPTION

The Memphis Depot covers 642 acres of land in Shelby County, Memphis, Tennessee, in the southwester portion of the state. The Memphis Depot began operations in the early 1940s with the mission to inventory and supply materials for the U.S. Army. The site has been used for a wide range of storage, distribution, and maintenance practices over the years. For this project, work included decontamination of the former permitted container storage building (Building 308).

1.2 SCOPE OF WORK SUMMARY

JEG and its subcontractor (STEP) furnished all labor, materials, appliances, and equipment to decontaminate Building 308. This building, which was once a permitted container storage facility, was decontaminated in accordance with the Closure Plan, which was submitted along with the original permit application (Tennessee Permit No. TNHW-053).

The scope of work for this project included.

- removal and disposal of loose items (papers, pallets, empty containers, etc.) from the building;
- cleaning all visible signs of contamination;
- pressure washing the floors and concrete walls of the building;
- testing and proper disposal of all wash fluids; and
- pressure washing the load/unload area and catch basin.

All work was performed in accordance with the *Work Plan, Decontamination and Closure of Permitted Container Storage Facility (Building 308) and Removal of Lead-Impacted Soils at Building 949, Former Defense Distribution Depot, Memphis* (JEG, August 2000)

1.3 Project Team

The project field team included the following organizations and personnel

- JEG Project Manager – Virgil Jansen
- JEG Site Superintendent – Kraig Smith
- STEP, Inc., Site Superintendent – Robert Thomas
- Test America –laboratory services for the analysis of the wastewater

2.0 EXECUTION OF WORK

2.1 Mobilization

The JEG/STEP Team mobilized to the Memphis Depot on August 28, 2001. The equipment used included a pressure washer, shop vacuum, and wastewater drums.

2.2 Dates and Significant Events

Significant accomplishments during work were documented in the Daily Reports. A summary is listed below, and the complete daily logs are contained in Appendix A. Appendix B contains photo documentation of the field efforts.

28 Aug 01

- Mobilized to the site, swept out building and began pressure washing the interior of the building

29 Aug 01	• Completed interior pressure washing activities • Pressure washed the loading dock area • Collected 15 drums of wash water for sampling and disposal • Collected samples of wash water from the drums and from the source area.
18 Sept 01	• Resampled wash water drums for VOCs and pH to determine disposal options
6 Nov 01	• Wash water was disposed at the Dunn Field recovery well sewer system.

2.3 Wash Water Sampling

One of the closure document requirements was testing the wash water for specific conductance, total organic carbon, and total organic halogens. A sample was collected from the source water and a composite sample was collected from the drums. The results are recorded in Table 1.

Table 1, Wash Water Sampling

Testing Parameter	Portable Water Sample MD-P001	Wash Water Sample MD-D001
Specific Conductance	136 umho/cm	307 umho/cm
Total Organic Carbon	3.52 mg/l	43.6 mg/l
Total Organic Halogens	0.015 mg/l	0.112 mg/l

umho/cm = micro-mhois per centimeter
mg/l = milligrams per liter

The results for specific conductance and total organic carbon increased from the source water sample to the composite sample. This was probably the result of the detergent that was used to help remove some of the stains from the concrete floor in the facility The wash water was resampled for VOCs and pH to determine whether the Dunn Field recovery well sewer system could be used for disposal. No VOCs were detected in the source (Sample ID 01-A130848) or the wash water (Sample ID 01-A130847). The sample data is attached in Appendix C. Based on these results, the Dunn Field recovery well sewer system was used for disposal of wash water.

Appendix A

Daily Reports

DAILY QUALITY CONTROL REPORT

Jacobs Eng.

Mobile COE

Daily Report No.: 2
Contract No.: CSA5107

Date: 8/29/01

Project Title & Location: Memphis Depot : Bldgs 308 & 949
Weather: cl Precipitation: 0 in. Temp: 75 Min. 92 Max.

1. Contract/Subcontractors and Area of Responsibility:

NUMBER:	TRADE	HOURS	EMPLOYER	LOCATION/DESCRIPTION WORK
5	LABOR	10	STEP	Bldg 308 - Pressure Washing
				Bldg 949 - Excavation
2	SUPER	10	JACOBS	Site Safety
				Site Supervision

2. Operating Plant or Equipment. (Not hand tools)

Plant/Equipment	Date of Arrival/Departure	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Pressure Wash	8-28/8-29		4	6	
Shop VAC	8/28 - 8/29		4	6	
Backhoe	8/28 - 8/29		10	0	

1. Work performed today: (Indicate location and description of work performed by prime and/or subcontractors by letter in table above).

Bldg 398 - completed pressure washing of Bldg interior and exterior staging area.

Bldg 949 - completed excavation at Bldg 949. Loaded 8 roll-off boxes for estimated quantity of 144 YDS^3

2. Results of control activities: (Indicate whether P - Preparatory, I - Initial, or F - Follow-up Phase. When a P or I meeting is conducted, complete attachment 1-A or 1B, respectively. When network analysis system is used, identify work by use of I-J numbers.)

3. Test performed as required by plans and/or specifications:

4. Material received:

5. Submittals Reviewed:

(a) Submittal No.	(b) Spec/Plan Reference	(c) By Whom	(d) Action

6. Offsite surveillance activities, including action taken:

7. Job Safety: (Report violations; corrective instructions given; corrective actions taken).

Had a.m. Safety briefing. No incidents or violations to report. Placed upwind and downwind dust monitors and used personal dust monitor on equipment operator.

8. Remarks: (Instructions received or given. Conflict(s) in Plans and/or specifications).

There is some staining at Bldg I-E that cannot be removed from the floor w/o removing paint.

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

Authorized CQC Rep at Site — Date: 8-29-01

DAILY QUALITY CONTROL REPORT

Jacobs Engineering

Mobile CoE

Daily Report No.: 1
Contract No.: DACA

Date: 8/28/01

Project Title & Location: memphis Depot - Bldgs 308 & 949
Weather: CL Precipitation: 0 in. Temp: 72 Min. 90 Max.

1. Contract/Subcontractors and Area of Responsibility:

NUMBER:	TRADE	HOURS	EMPLOYER	LOCATION/DESCRIPTION WORK
5	LABOR	10	STEP	Building 308 - Pressure Washing
				Building 949 - Excavation
2	Super	10	JACOBS	Site Supervisor
				H & Safety

2. Operating Plant or Equipment. (Not hand tools)

Plant/Equipment	Date of Arrival/Departure	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Pressure Washer	8/28/01		10	0	
VAC - Shop Vac	8/28/01		8	2	
Backhoe	8/28/01	8/28	8	2	

1. Work performed today: (Indicate location and description of work performed by prime and/or subcontractors by letter in table above).

Bldg 308 - Swept out building. Pressure-washed building interior floors. Began pressure washing exterior concrete pad

2. Results of control activities: (Indicate whether P - Preparatory, I - Initial, or F - Follow-up Phase. When a P or I meeting is conducted, complete attachment 1-A or 1B, respectively. When network analysis system is used, identify work by use of I-J numbers.)

3. Test performed as required by plans and/or specifications:

collected sample of wash water for TOX + other analyses

4. Material received:

5. Submittals Reviewed:

(a) Submittal No.	(b) Spec/Plan Reference	(c) By Whom	(d) Action

6. Offsite surveillance activities, including action taken:

7. Job Safety: (Report violations; corrective instructions given; corrective actions taken).

Had a.m. Safety meeting. No incidents to report. Set upwind and downwind dust monitors and told personnel dust monitor or equipment operator.

8. Remarks: (Instructions received or given. Conflict(s) in Plans and/or specifications).

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

Kraig Smith 8-28-01

Authorized CQC Rep at Site Date

Appendix B

Photographs

MEMPHIS DEPOT – Building T-308

Photo 1.
Floor of Building T-308 after pressure washing

Photo 2.
Pressure washing the loading/ unloading area adjacent to Building T-308

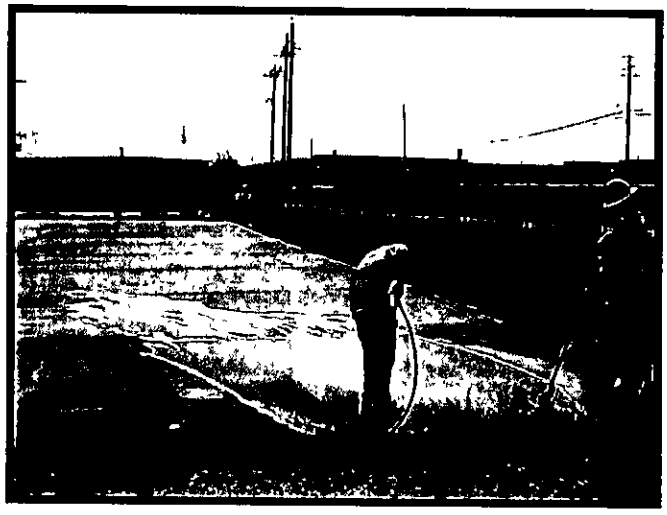


Photo 3.
Pressure washing and scrubbing the loading/ unloading area adjacent to Building T-308

Building and concrete slab pressure washing

Appendix C

Waste Disposal Analytical Results

TestAmerica
INCORPORATED

ANALYTICAL REPORT

STEP, INC. 5860
DINA GOUGE
1006 FLOYD CULLER COURT
OAK RIDGE, TN 37830

Project: 114-102/114-002
Project Name: MEMPHIS DEPOT T-308
Sampler:

Lab Number: 01-A121950
Sample ID: MD-POOl
Sample Type: Water
Site ID:

Date Collected: 8/29/01
Time Collected: 10:00
Date Received: 8/30/01
Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
MISCELLANEOUS CHEMISTRY										
Specific Conductance	136.	umho/cm		10.0	1	9/ 4/01	13 34	T. Beverly	120 1	3686
Total Organic Carbon	3.52	mg/l	1 00	1 00	1	9/ 6/01	7:17	M Richards	415.1	5126
Total Organic Halogens	0 015	mg/l	0 010	0 010	1	8/31/01	9.21	M Richards	9020B	4493

ND - Not detected at the report limit
- Recovery outside Laboratory historical or method prescribed limits

Report Approved By: _____ Report Date: 9/ 6/01

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director
Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 02008

End of Sample Report.

TestAmerica
INCORPORATED

ANALYTICAL REPORT

STEP, INC. 5860
DINA GOUGE
1006 FLOYD CULLER COURT
OAK RIDGE, TN 37830

Project: 114-102/114-002
Project Name: MEMPHIS DEPOT T-308
Sampler:

Lab Number: 01-A121951
Sample ID: MD-D001
Sample Type: Water
Site ID:

Date Collected: 8/29/01
Time Collected: 10:10
Date Received: 8/30/01
Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
MISCELLANEOUS CHEMISTRY										
Specific Conductance	307.	umho/cm		10.0	1	9/ 5/01	11.14	T Beverly	120.1	4230
Total Organic Carbon	43.6	mg/l	1 00	1.00	1	9/ 6/01	7 17	M Richards	415 1	5126
Total Organic Halogens	0 112	mg/l	0 010	0.010	1	8/31/01	9 21	M Richards	9020B	4493

TOX >10% BREAKTHROUGH

ND - Not detected at the report limit
- Recovery outside Laboratory historical or method prescribed limits

Sample report continued .

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 01-A121951
Sample ID: MD-D001
Project: 114-102/114-002

Report Approved By: J Mitchell Report Date: 9/ 6/01

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director
Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 02008

End of Sample Report.

TestAmerica
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PROJECT QUALITY CONTROL DATA
Project Number: 114-102/114-002

Matrix Spike Recovery

Analyte	units	Orig Val.	MS Val	Spike Conc	Recovery	Target Range	Q C Batch	Spike Sample
MISC PARAMETERS								
Total Organic Halogens	mg/l	0 015	0 120	0 100	105	80 - 120	4493	01-A121950

Matrix Spike Duplicate

Analyte	units	Orig Val	Duplicate	RPD	Limit	Q.C Batch
MISC PARAMETERS						
Total Organic Halogens	mg/l	0 120	0 126	4.88	20	4493

Laboratory Control Data

Analyte	units	Known Val	Analyzed Val	% Recovery	Target Range	Q.C. Batch
MISC PARAMETERS						
Total Organic Carbon	mg/l	200.	184	92	90 - 110	5126
Total Organic Halogens	mg/l	0 100	0.099	99	90 - 110	4493

Blank Data

Analyte	Blank Value	Units	Q.C Batch	Date Analyzed	Time Analyzed
MISC PARAMETERS					
Total Organic Carbon	< 1.00	mg/l	5126	9/ 6/01	7 17
Total Organic Halogens	< 0.010	mg/l	4493	8/31/01	9 21

TestAmerica
INCORPORATED

PROJECT QUALITY CONTROL DATA
Project Number: 114-102/114-002

- Value outside Laboratory historical or method prescribed QC limits

End of Report for Project 251222

2960 Foster Creighton Drive / Nashville,TN 37204 / 615-726-0177 / Fax. 615-726-0954 / 800-765-0980

251222

TestAmerica INCORPORATED

Orlando Division
4310 East Anderson Road
Orlando, FL 32812

Phone: 407-851-2560
Fax: 407-856-0886

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring _____

Client Name: STEP Client #: 58160
Address: 1006 Floyd Culler Court
City/State/Zip Code: Oak Ridge, TN 37830
Project Manager: Doug Hawn
Telephone Number: 865-481-1837 Fax: 481-0210
Sampler Name: (Print Name) _____
Sampler Signature: _____

Project Name: Memphis Depot T-308
Project #: 114-102 / 114-002
Site/Location ID: Bldg. T-308 State: TN
Report To: Doug Hawn / Roy Hoekstra
Invoice To: STEP, Inc.
Quote #: _____ PO# _____

TAT
~~Standard~~
Rush (surcharges may apply)
Date Needed: 5 DAY Turnaround
Fax Results: (Y) N

SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix: SL - Sludge, DW - Drinking Water, GW - Groundwater, S - Soil/Solid, WW - Wastewater, Specify Other	Preservation & # of Containers: HNO_3	HCl	NaOH	H_2SO_4	Methanol	None	Other (Specify) Plastic Bottle	Analyze For: TOC	TOX	Specific Conductivity	REMARKS
MD-P001	8/29/01	10:00	G		WW	1	2					1	1	1	1	121950
MD-D001	8/29/01	10:10	G		WW	1	2					1	1	1	1	121951

QC Deliverables
___ None
X Level 2 (Batch QC)
___ Level 3
___ Level 4
Other: _____

Special Instructions:

	Date:	Time:		Date:	Time:
Relinquished By: Jerry W. Mc[illegible]	8/29/01	1610	Received By:		
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time	Received By: C. Wh	8.30.01	0900

LABORATORY COMMENTS:
Init Lab Temp:
Rec Lab Temp:
Custody Seals: Y N N/A
Bottles Supplied by TestAmerica: Y N
Method of Shipment:

637 22

TestAmerica INCORPORATED

COOLER RECEIPT FORM

Client: STEP BC# 251222

Cooler Received On: 8.30.01 And Opened On: 8.30.01 By: CHRIS WILMOTH

C. Wilth
(Signature)

1. Temperature of Cooler when opened 4 DEGREES C
2. Were custody seals on outside of cooler and intact? (YES) NO
   a. If yes,what kind and where: 1 Back
   b. Were the signature and date correct? (YES) NO
3. Were custody seals on containers intact? YES NO
4. Were custody papers inside cooler? (YES) NO
5. Were custody papers properly filled out (ink,signed,etc)? (YES) NO
6. Did you sign the custody papers in the appropriate place? (YES) NO
7. What kind of packing material used? (Bubblewrap) Peanuts Other None
8. Was sufficient ice used (if appropriate)? (YES) NO
9. Did all bottles arrive in good condition(unbroken)? (YES) NO
10. Were all bottle labels complete (#,date,signed,pres,etc)? (YES) NO
11. Did all bottle labels and tags agree with custody papers? (YES) NO
12. Were correct bottles used for the analysis requested? (YES) NO
13. If present, was any observable voa headspace present? YES NO
14. If present, were VOA vials checked for absence of air bubbles and noted if found? YES NO
15. Was sufficient amount of sample sent in each bottle? (YES) NO
16. Were correct preservatives used? (YES) NO
17. Was residual chlorine present (if appropriate)? YES (NO)
18. Corrective action taken, if necessary:
    a. Name of person contacted: SEE ATTACHED FOR RESOLUTION
    b. Date:

2960 Foster Creighton Drive / Nashville,TN 37204 / 615-726-0177 / Fax: 615-726-0954 / 800-765-0980

TestAmerica
INCORPORATED

ANALYTICAL REPORT

STEP, INC. 5860
DOUG HAWN
1006 FLOYD CULLER COURT
OAK RIDGE, TN 37830

Lab Number: 01-A130847
Sample ID: 9/18/01 5:50
Sample Type: Ground water
Site ID:

Project:
Project Name: MEMPHIS DEPOT EXCAVATION
Sampler:

Date Collected: 9/18/01
Time Collected: 5:50
Date Received: 9/19/01
Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
VOLATILE ORGANICS										
Acetone	ND	mg/l	0 0500	0 0500	1	9/19/01	18 49	K.Hill	8260B	4753
Benzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Bromobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Bromochloromethane	ND	mg/l	0.0020	0 0020	1	9/19/01	18:49	K.Hill	8260B	4753
Bromoform	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Bromomethane	ND	mg/l	0 0020	0.0020	1	9/19/01	18 49	K.Hill	8260B	4753
2-Butanone	ND	mg/l	0 0500	0 0500	1	9/19/01	18 49	K.Hill	8260B	4753
n-Butylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
sec-Butylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
t-Butylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Carbon disulfide	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Carbon tetrachloride	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Chlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Chloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Chloroform	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Chloromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	18:49	K.Hill	8260B	4753
2-Chlorotoluene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
4-Chlorotoluene	ND	mg/l	0 0020	0 0020	1	9/19/01	18·49	K Hill	8260B	4753
1,2-Dibromo-3-chloropropane	ND	mg/l	0.0100	0 0100	1	9/19/01	18 49	K Hill	8260B	4753
Dibromochloromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K.Hill	8260B	4753
1,2-Dibromoethane	ND	mg/l	0.0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Dibromomethane	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
1,2-Dichlorobenzene	ND	mg/l	0.0020	0 0020	1	9/19/01	18 49	K.Hill	8260B	4753
1,3-Dichlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K.Hill	8260B	4753
1,4-Dichlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Dichlorodifluoromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	18·49	K Hill	8260B	4753
1,1-Dichloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753

Sample report continued .

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 01-A130847
Sample ID: 9/18/01 5:50
Project:

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
1,2-Dichloroethane	ND	mg/l	0.0020	0.0020	1	9/19/01	18:49	K.Hill	8260B	4753
1,1-Dichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	18:49	K Hill	8260B	4753
cis-1,2-Dichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
trans-1,2-Dichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
1,2-Dichloropropane	ND	mg/l	0 0020	0 0020	1	9/19/01	18:49	K Hill	8260B	4753
1,3-Dichloropropane	ND	mg/l	0 0020	0.0020	1	9/19/01	18 49	K.Hill	8260B	4753
2,2-Dichloropropane	ND	mg/l	0 0020	0 0020	1	9/19/01	18:49	K Hill	8260B	4753
1,1-Dichloropropene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K.Hill	8260B	4753
cis-1,3-Dichloropropene	ND	mg/l	0 0020	0.0020	1	9/19/01	18:49	K.Hill	8260B	4753
trans-1,3-Dichloropropene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Ethylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Hexachlorobutadiene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
2-Hexanone	ND	mg/l	0 0100	0 0100	1	9/19/01	18 49	K.Hill	8260B	4753
Isopropylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
4-Isopropyltoluene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K.Hill	8260B	4753
4-Methyl-2-pentanone	ND	mg/l	0 0100	0.0100	1	9/19/01	18 49	K Hill	8260B	4753
Methylene chloride	ND	mg/l	0.0050	0 0050	1	9/19/01	18 49	K Hill	8260B	4753
Naphthalene	ND	mg/l	0 0050	0.0050	1	9/19/01	18.49	K Hill	8260B	4753
n-Propylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Styrene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
1,1,1,2-Tetrachloroethane	ND	mg/l	0 0020	0.0020	1	9/19/01	18 49	K.Hill	8260B	4753
1,1,2,2-Tetrachloroethane	ND	mg/l	0 0020	0.0020	1	9/19/01	18:49	K Hill	8260B	4753
Tetrachloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	18:49	K Hill	8260B	4753
Toluene	ND	mg/l	0 0020	0 0020	1	9/19/01	18.49	K.Hill	8260B	4753
1,2,3-Trichlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
1,2,4-Trichlorobenzene	ND	mg/l	0.0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
1,1,1-Trichloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
1,1,2-Trichloroethane	ND	mg/l	0.0020	0 0020	1	9/19/01	18:49	K Hill	8260B	4753
Trichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
1,2,3-Trichloropropane	ND	mg/l	0 0020	0.0020	1	9/19/01	18 49	K Hill	8260B	4753
1,2,4-Trimethylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
1,3,5-Trimethylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	18 49	K Hill	8260B	4753
Vinyl chloride	ND	mg/l	0 0020	0 0020	1	9/19/01	18.49	K Hill	8260B	4753
Xylenes, Total	ND	mg/l	0 0020	0 0020	1	9/19/01	18:49	K Hill	8260B	4753
Bromodichloromethane	ND	mg/l	0 0020	0.0020	1	9/19/01	18 49	K Hill	8260B	4753
Trichlorofluoromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	18:49	K Hill	8260B	4753

Sample report continued

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 01-A130847
Sample ID: 9/18/01 5:50
Project:

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
MISCELLANEOUS CHEMISTRY										
pH	10.3	pH Units			1	9/19/01	15 39	K Bundy	9040/150.1	3843

ND - Not detected at the report limit

Surrogate	% Recovery	Target Range
VOA Surr 1,2-DCA-d4	120.	68. - 143
VOA Surr Toluene-d8	123	78 - 127
VOA Surr, 4-BFB	127	73 - 127
VOA Surr, DBFM	110	76 - 135

- Recovery outside Laboratory historical or method prescribed limits

Report Approved By: _____ Report Date: 9/20/01

Laboratory Certification Number: 02008

End of Sample Report.

TestAmerica
INCORPORATED

ANALYTICAL REPORT

STEP, INC. 5860
DOUG HAWN
1006 FLOYD CULLER COURT
OAK RIDGE, TN 37830

Project:
Project Name: MEMPHIS DEPOT EXCAVATION
Sampler:

Lab Number: 01-A130848
Sample ID: 9/18/01 5:52
Sample Type: Ground water
Site ID:

Date Collected: 9/18/01
Time Collected: 5:52
Date Received: 9/19/01
Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
VOLATILE ORGANICS										
Acetone	ND	mg/l	0.0500	0 0500	1	9/19/01	19 25	K Hill	8260B	4753
Benzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Bromobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19.25	K Hill	8260B	4753
Bromochloromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Bromoform	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Bromomethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
2-Butanone	ND	mg/l	0 0500	0 0500	1	9/19/01	19:25	K.Hill	8260B	4753
n-Butylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K.Hill	8260B	4753
sec-Butylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19.25	K.Hill	8260B	4753
t-Butylbenzene	ND	mg/l	0.0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Carbon disulfide	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K.Hill	8260B	4753
Carbon tetrachloride	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Chlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Chloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19·25	K Hill	8260B	4753
Chloroform	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Chloromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
2-Chlorotoluene	ND	mg/l	0 0020	0.0020	1	9/19/01	19 25	K Hill	8260B	4753
4-Chlorotoluene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
1,2-Dibromo-3-chloropropane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Dibromochloromethane	ND	mg/l	0 0100	0 0100	1	9/19/01	19 25	K Hill	8260B	4753
1,2-Dibromoethane	ND	mg/l	0.0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Dibromomethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19·25	K.Hill	8260B	4753
1,2-Dichlorobenzene	ND	mg/l	0.0020	0 0020	1	9/19/01	19.25	K Hill	8260B	4753
1,3-Dichlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
1,4-Dichlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K.Hill	8260B	4753
Dichlorodifluoromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19.25	K Hill	8260B	4753
1,1-Dichloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
								K.Hill		

Sample report continued .

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 01-A130848
Sample ID: 9/18/01 5:52
Project:

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
1,2-Dichloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19.25	K Hill	8260B	4753
1,1-Dichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	19.25	K Hill	8260B	4753
cis-1,2-Dichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
trans-1,2-Dichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	19.25	K Hill	8260B	4753
1,2-Dichloropropane	ND	mg/l	0.0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
1,3-Dichloropropane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
2,2-Dichloropropane	ND	mg/l	0 0020	0.0020	1	9/19/01	19 25	K Hill	8260B	4753
1,1-Dichloropropene	ND	mg/l	0 0020	0 0020	1	9/19/01	19·25	K Hill	8260B	4753
cis-1,3-Dichloropropene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K.Hill	8260B	4753
trans-1,3-Dichloropropene	ND	mg/l	0 0020	0 0020	1	9/19/01	19·25	K Hill	8260B	4753
Ethylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19.25	K Hill	8260B	4753
Hexachlorobutadiene	ND	mg/l	0 0020	0.0020	1	9/19/01	19 25	K Hill	8260B	4753
2-Hexanone	ND	mg/l	0 0100	0 0100	1	9/19/01	19 25	K Hill	8260B	4753
Isopropylbenzene	ND	mg/l	0 0020	0.0020	1	9/19/01	19·25	K Hill	8260B	4753
4-Isopropyltoluene	ND	mg/l	0.0020	0.0020	1	9/19/01	19:25	K Hill	8260B	4753
4-Methyl-2-pentanone	ND	mg/l	0 0100	0 0100	1	9/19/01	19 25	K Hill	8260B	4753
Methylene chloride	ND	mg/l	0 0050	0.0050	1	9/19/01	19 25	K Hill	8260B	4753
Naphthalene	ND	mg/l	0 0050	0 0050	1	9/19/01	19·25	K Hill	8260B	4753
n-Propylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K.Hill	8260B	4753
Styrene	ND	mg/l	0.0020	0 0020	1	9/19/01	19 25	K.Hill	8260B	4753
1,1,1,2-Tetrachloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
1,1,2,2-Tetrachloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K.Hill	8260B	4753
Tetrachloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	19.25	K Hill	8260B	4753
Toluene	ND	mg/l	0 0020	0 0020	1	9/19/01	19.25	K Hill	8260B	4753
1,2,3-Trichlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
1,2,4-Trichlorobenzene	ND	mg/l	0.0020	0.0020	1	9/19/01	19·25	K Hill	8260B	4753
1,1,1-Trichloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K.Hill	8260B	4753
1,1,2-Trichloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Trichloroethene	ND	mg/l	0 0020	0.0020	1	9/19/01	19 25	K Hill	8260B	4753
1,2,3-Trichloropropane	ND	mg/l	0.0020	0 0020	1	9/19/01	19.25	K.Hill	8260B	4753
1,2,4-Trimethylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
1,3,5-Trimethylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	19.25	K Hill	8260B	4753
Vinyl chloride	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Xylenes, Total	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K Hill	8260B	4753
Bromodichloromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	19 25	K.Hill	8260B	4753
Trichlorofluoromethane	ND	mg/l	0.0020	0.0020	1	9/19/01	19 25	K Hill	8260B	4753

Sample report continued

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 01-A130848
Sample ID: 9/18/01 5:52
Project:

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
MISCELLANEOUS CHEMISTRY										
pH	7 10	pH Units			1	9/19/01	15 39	K Bundy	9040/150.1	3843

ND - Not detected at the report limit.

Surrogate	% Recovery	Target Range
VOA Surr 1,2-DCA-d4	119	68 - 143
VOA Surr Toluene-d8	122	78 - 127
VOA Surr, 4-BFB	127	73 - 127
VOA Surr, DBFM	111	76 - 135

- Recovery outside Laboratory historical or method prescribed limits

Report Approved By: _____ Report Date: 9/20/01

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director
Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 02008

End of Sample Report.

TestAmerica
INCORPORATED

ANALYTICAL REPORT

STEP, INC. 5860
DOUG HAWN
1006 FLOYD CULLER COURT
OAK RIDGE, TN 37830

Lab Number: 01-A130849
Sample ID: TRIP BLANK
Sample Type: Ground water
Site ID:

Project:
Project Name: MEMPHIS DEPOT EXCAVATION
Sampler:

Date Collected:
Time Collected:
Date Received: 9/19/01
Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
VOLATILE ORGANICS										
Acetone	ND	mg/l	0 0500	0 0500	1	9/19/01	20·01	K Hill	8260B	4753
Benzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Bromobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Bromochloromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Bromoform	ND	mg/l	0 0020	0 0020	1	9/19/01	20.01	K Hill	8260B	4753
Bromomethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K.Hill	8260B	4753
2-Butanone	ND	mg/l	0 0500	0 0500	1	9/19/01	20 01	K Hill	8260B	4753
n-Butylbenzene	ND	mg/l	0 0020	0.0020	1	9/19/01	20 01	K Hill	8260B	4753
sec-Butylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
t-Butylbenzene	ND	mg/l	0.0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Carbon disulfide	ND	mg/l	0 0020	0.0020	1	9/19/01	20.01	K Hill	8260B	4753
Carbon tetrachloride	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Chlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20·01	K Hill	8260B	4753
Chloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Chloroform	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Chloromethane	ND	mg/l	0.0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
2-Chlorotoluene	ND	mg/l	0 0020	0 0020	1	9/19/01	20·01	K Hill	8260B	4753
4-Chlorotoluene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
1,2-Dibromo-3-chloropropane	ND	mg/l	0 0100	0 0100	1	9/19/01	20·01	K.Hill	8260B	4753
Dibromochloromethane	ND	mg/l	0 0020	0.0020	1	9/19/01	20 01	K Hill	8260B	4753
1,2-Dibromoethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Dibromomethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
1,2-Dichlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
1,3-Dichlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20.01	K.Hill	8260B	4753
1,4-Dichlorobenzene	ND	mg/l	0.0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Dichlorodifluoromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
1,1-Dichloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753

Sample report continued .

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 01-A130849
Sample ID: TRIP BLANK
Project:
Page 2

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
1,2-Dichloroethane	ND	mg/l	0.0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
1,1-Dichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
cis-1,2-Dichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K.Hill	8260B	4753
trans-1,2-Dichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K.Hill	8260B	4753
1,2-Dichloropropane	ND	mg/l	0 0020	0 0020	1	9/19/01	20.01	K.Hill	8260B	4753
1,3-Dichloropropane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
2,2-Dichloropropane	ND	mg/l	0 0020	0 0020	1	9/19/01	20·01	K Hill	8260B	4753
1,1-Dichloropropene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
cis-1,3-Dichloropropene	ND	mg/l	0 0020	0.0020	1	9/19/01	20 01	K Hill	8260B	4753
trans-1,3-Dichloropropene	ND	mg/l	0 0020	0 0020	1	9/19/01	20.01	K Hill	8260B	4753
Ethylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20·01	K Hill	8260B	4753
Hexachlorobutadiene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
2-Hexanone	ND	mg/l	0 0100	0 0100	1	9/19/01	20 01	K Hill	8260B	4753
Isopropylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20·01	K Hill	8260B	4753
4-Isopropyltoluene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K.Hill	8260B	4753
4-Methyl-2-pentanone	ND	mg/l	0 0100	0 0100	1	9/19/01	20 01	K Hill	8260B	4753
Methylene chloride	ND	mg/l	0 0050	0 0050	1	9/19/01	20 01	K Hill	8260B	4753
Naphthalene	ND	mg/l	0 0050	0 0050	1	9/19/01	20 01	K.Hill	8260B	4753
n-Propylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Styrene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
1,1,1,2-Tetrachloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20·01	K Hill	8260B	4753
1,1,2,2-Tetrachloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Tetrachloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Toluene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
1,2,3-Trichlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
1,2,4-Trichlorobenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
1,1,1-Trichloroethane	ND	mg/l	0.0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
1,1,2-Trichloroethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Trichloroethene	ND	mg/l	0 0020	0 0020	1	9/19/01	20·01	K Hill	8260B	4753
1,2,3-Trichloropropane	ND	mg/l	0 0020	0 0020	1	9/19/01	20·01	K Hill	8260B	4753
1,2,4-Trimethylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20.01	K Hill	8260B	4753
1,3,5-Trimethylbenzene	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Vinyl chloride	ND	mg/l	0 0020	0 0020	1	9/19/01	20·01	K Hill	8260B	4753
Xylenes, Total	ND	mg/l	0.0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Bromodichloromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20 01	K Hill	8260B	4753
Trichlorofluoromethane	ND	mg/l	0 0020	0 0020	1	9/19/01	20:01	K Hill	8260B	4753

Sample report continued

TestAmerica
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ANALYTICAL REPORT

Laboratory Number: 01-A130849
Sample ID: TRIP BLANK
Project:

TCLP Results

Analyte	Result	Units	Reg Limit	Matrix Spike Recovery (%)	Date	Method

ND = Not detected at the report limit.

Surrogate	% Recovery	Target Range
VOA Surr 1,2-DCA-d4	118.	68. - 143
VOA Surr Toluene-d8	122	78 - 127
VOA Surr, 4-BFB	127	73 - 127
VOA Surr, DBFM	109	76 - 135

= Recovery outside Laboratory historical or method prescribed limits

Report Approved By: _____ Report Date: 9/20/01

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director
Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 02008

End of Sample Report.

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PROJECT QUALITY CONTROL DATA
Project Number:

Matrix Spike Recovery

Analyte	units	Orig Val	MS Val	Spike Conc	Recovery	Target Range	Q.C Batch	Spike Sample
VOA PARAMETERS								
Benzene	mg/l	< 0 00200	0 06030	0 05000	121	70 - 136	4753	01-A130598
Chlorobenzene	mg/l	< 0 00200	0 05440	0 05000	109	70. - 132	4753	01-A130598
1,1-Dichloroethene	mg/l	< 0 00200	0 05910	0 05000	118	60. - 145.	4753	01-A130598
Toluene	mg/l	< 0 00200	0 05880	0.05000	118	69 - 137	4753	01-A130598
Trichloroethene	mg/l	< 0 00200	0 05500	0 05000	110	63 - 149	4753	01-A130598
VOA Surr 1,2-DCA-d4	% Rec				115	68 - 143	4753	
VOA Surr Toluene-d8	% Rec				123	78 - 127	4753	
VOA Surr, 4-BFB	% Rec				123	73. - 127	4753	
VOA Surr, DBFM	% Rec				115	76 - 135.	4753	

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q C Batch
VOA PARAMETERS						
Benzene	mg/l	0 06030	0 06100	1 15	21	4753
Chlorobenzene	mg/l	0.05440	0 05550	2.00	25	4753
1,1-Dichloroethene	mg/l	0 05910	0 06050	2 34	26	4753
Toluene	mg/l	0 05880	0 05900	0.34	22	4753
Trichloroethene	mg/l	0 05500	0 05630	2 34	28	4753
VOA Surr 1,2-DCA-d4	% Rec		115			4753
VOA Surr Toluene-d8	% Rec		121			4753
VOA Surr, 4-BFB	% Rec		120			4753
VOA Surr, DBFM	% Rec		115			4753

Project QC continued

TestAmerica
INCORPORATED

PROJECT QUALITY CONTROL DATA
Project Number:

Laboratory Control Data

Analyte	units	Known Val	Analyzed Val	% Recovery	Target Range	Q C Batch
VOA PARAMETERS						
Acetone	mg/l	0 2500	0 2650	106	54 - 153	4753
Benzene	mg/l	0 05000	0 05040	101	79 - 124	4753
Bromobenzene	mg/l	0 0500	0 0526	105	76 - 122	4753
Bromochloromethane	mg/l	0.0500	0 0523	105	71 - 134	4753
Bromoform	mg/l	0 0500	0 0468	94	66 - 124	4753
Bromomethane	mg/l	0.0500	0 0463	93	51 - 145	4753
2-Butanone	mg/l	0 2500	0 2580	103	62 - 134	4753
n-Butylbenzene	mg/l	0 0500	0.0521	104	61 - 136	4753
sec-Butylbenzene	mg/l	0 0500	0 0521	104	69 - 130	4753
t-Butylbenzene	mg/l	0 0500	0.0526	105	66 - 129	4753
Carbon disulfide	mg/l	0 0500	0 0509	102	71 - 129	4753
Carbon tetrachloride	mg/l	0.05000	0.05200	104	70 - 130	4753
Chlorobenzene	mg/l	0 05000	0 04940	99	80 - 118	4753
Chloroethane	mg/l	0 0500	0 0513	103	59 - 144	4753
Chloroform	mg/l	0 0500	0 0496	99	74 - 123	4753
Chloromethane	mg/l	0 0500	0.0459	92	47 - 155	4753
2-Chlorotoluene	mg/l	0 0500	0 0518	104	74 - 126	4753
4-Chlorotoluene	mg/l	0 0500	0 0523	105	75 - 125	4753
1,2-Dibromo-3-chloropropane	mg/l	0 0500	0 0485	97	58 - 133	4753
Dibromochloromethane	mg/l	0 0500	0 0491	98	73 - 125	4753
1,2-Dibromoethane	mg/l	0.0500	0 0544	109	74 - 125	4753
Dibromomethane	mg/l	0 0500	0 0518	104	71 - 130	4753
1,2-Dichlorobenzene	mg/l	0 0500	0 0522	104	76 - 122	4753
1,3-Dichlorobenzene	mg/l	0 0500	0.0510	102	75 - 122	4753
1,4-Dichlorobenzene	mg/l	0 0500	0.0501	100	76 - 119	4753
Dichlorodifluoromethane	mg/l	0 0500	0 0512	102	53 - 151	4753
1,1-Dichloroethane	mg/l	0 05000	0 05010	100	76 - 127	4753
1,2-Dichloroethane	mg/l	0 0500	0 0508	102	66 - 133	4753
1,1-Dichloroethene	mg/l	0 05000	0 05160	103	72 - 127	4753
cis-1,2-Dichloroethene	mg/l	0 0500	0 0509	102	74 - 127	4753
trans-1,2-Dichloroethene	mg/l	0 0500	0 0506	101	70 - 132	4753
1,2-Dichloropropane	mg/l	0 0500	0 0467	93	76 - 124	4753

Project QC continued

TestAmerica
INCORPORATED

PROJECT QUALITY CONTROL DATA
Project Number:

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q C Batch
1,3-Dichloropropane	mg/l	0 0500	0 0501	100	72 - 129	4753
2,2-Dichloropropane	mg/l	0 0500	0 0516	103	33 - 152	4753
1,1-Dichloropropene	mg/l	0 0500	0 0526	105	73 - 127	4753
cis-1,3-Dichloropropene	mg/l	0 0500	0 0536	107	58 - 131	4753
trans-1,3-Dichloropropene	mg/l	0 0500	0 0535	107	53 - 133	4753
Ethylbenzene	mg/l	0 05000	0 05130	103	77 - 126	4753
Hexachlorobutadiene	mg/l	0 0500	0 0448	90	52 - 139	4753
2-Hexanone	mg/l	0 2500	0 2650	106	61 - 136	4753
Isopropylbenzene	mg/l	0 0500	0 0537	107	74 - 127	4753
4-Isopropyltoluene	mg/l	0 0500	0 0502	100	69 - 1130	4753
4-Methyl-2-pentanone	mg/l	0 2500	0 2620	105	63 - 135	4753
Methylene chloride	mg/l	0 0500	0 0482	96	70 - 130	4753
Naphthalene	mg/l	0 0500	0 0446	89	57 - 143	4753
n-Propylbenzene	mg/l	0 0500	0 0518	104	71 - 130	4753
Styrene	mg/l	0 0500	0 0528	106	77 - 122	4753
1,1,1,2-Tetrachloroethane	mg/l	0 0500	0 0465	93	71 - 130	4753
1,1,2,2-Tetrachloroethane	mg/l	0 0500	0.0508	102	57 - 136	4753
Tetrachloroethene	mg/l	0 05000	0 05140	103	72 - 126	4753
Toluene	mg/l	0 05000	0.04960	99	78 - 124	4753
1,2,3-Trichlorobenzene	mg/l	0 0500	0 0484	97	58 - 139	4753
1,2,4-Trichlorobenzene	mg/l	0 0500	0 0500	100	60 - 132	4753
1,1,1-Trichloroethane	mg/l	0 05000	0 05130	103	70 - 130	4753
1,1,2-Trichloroethane	mg/l	0 0500	0.0520	104	75 - 124	4753
Trichloroethene	mg/l	0 05000	0 04990	100	70 - 136	4753
1,2,3-Trichloropropane	mg/l	0.0500	0 0545	109	63 - 132	4753
1,2,4-Trimethylbenzene	mg/l	0 0500	0 0471	94	73 - 127	4753
1,3,5-Trimethylbenzene	mg/l	0 0500	0 0520	104	72 - 128	4753
Vinyl chloride	mg/l	0 0500	0.0533	107	62 - 144	4753
Xylenes, Total	mg/l	0 1500	0 1549	103	76 - 127	4753
Bromodichloromethane	mg/l	0.0500	0 0532	106	69 - 130	4753
Trichlorofluoromethane	mg/l	0 0500	0 0488	98	64 - 136	4753
VOA Surr 1,2-DCA-d4	% Rec			109	64 - 136	4753
VOA Surr Toluene-d8	% Rec			121	64 - 136	4753
VOA Surr, 4-BFB	% Rec			120	64 - 136	4753

Project QC continued

TestAmerica
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PROJECT QUALITY CONTROL DATA
Project Number:

Laboratory Control Data

Analyte	units	Known Val	Analyzed Val	% Recovery	Target Range	Q.C Batch
VOA Surr, DBFM	% Rec			116	64 - 136	4753

Duplicates

Analyte	units	Orig Val	Duplicate	RPD	Limit	Q C Batch	Sample Dup'd
pH	pH Units	7 10	7 10	0 00	15	3843	01-A130848

Blank Data

Analyte	Blank Value	Units	Q C Batch	Date Analyzed	Time Analyzed
VOA PARAMETERS					
Acetone	< 0.0066	mg/l	4753	9/19/01	14 36
Benzene	< 0.00060	mg/l	4753	9/19/01	14 36
Bromobenzene	< 0 0005	mg/l	4753	9/19/01	14 36
Bromochloromethane	< 0 0008	mg/l	4753	9/19/01	14 36
Bromoform	< 0 0005	mg/l	4753	9/19/01	14 36
Bromomethane	< 0.0007	mg/l	4753	9/19/01	14 36
2-Butanone	< 0 0059	mg/l	4753	9/19/01	14 36
n-Butylbenzene	< 0 0006	mg/l	4753	9/19/01	14.36
sec-Butylbenzene	< 0.0005	mg/l	4753	9/19/01	14 36
t-Butylbenzene	< 0 0006	mg/l	4753	9/19/01	14 36
Carbon disulfide	< 0 0005	mg/l	4753	9/19/01	14 36
Carbon tetrachloride	< 0 00040	mg/l	4753	9/19/01	14.36
Chlorobenzene	< 0 00070	mg/l	4753	9/19/01	14 36
Chloroethane	< 0.0007	mg/l	4753	9/19/01	14 36
Chloroform	< 0 0006	mg/l	4753	9/19/01	14 36
Chloromethane	< 0 0009	mg/l	4753	9/19/01	14 36
2-Chlorotoluene	< 0 0006	mg/l	4753	9/19/01	14 36
4-Chlorotoluene	< 0 0006	mg/l	4753	9/19/01	14 36
1,2-Dibromo-3-chloropropane	< 0 0009	mg/l	4753	9/19/01	14 36
Dibromochloromethane	< 0 0005	mg/l	4753	9/19/01	14 36
1,2-Dibromoethane	< 0 0003	mg/l	4753	9/19/01	14 36

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PROJECT QUALITY CONTROL DATA
Project Number:

Blank Data

Analyte	Blank Value	Units	Q C Batch	Analysis Date	Analysis Time
Dibromomethane	< 0.0003	mg/l	4753	9/19/01	14 36
1,2-Dichlorobenzene	< 0 0003	mg/l	4753	9/19/01	14 36
1,3-Dichlorobenzene	< 0 0006	mg/l	4753	9/19/01	14·36
1,4-Dichlorobenzene	< 0 0005	mg/l	4753	9/19/01	14 36
Dichlorodifluoromethane	< 0 0006	mg/l	4753	9/19/01	14 36
1,1-Dichloroethane	< 0 00070	mg/l	4753	9/19/01	14 36
1,2-Dichloroethane	< 0 0004	mg/l	4753	9/19/01	14 36
1,1-Dichloroethene	< 0 00060	mg/l	4753	9/19/01	14.36
cis-1,2-Dichloroethene	< 0 0006	mg/l	4753	9/19/01	14 36
trans-1,2-Dichloroethene	< 0 0007	mg/l	4753	9/19/01	14.36
1,2-Dichloropropane	< 0 0006	mg/l	4753	9/19/01	14 36
1,3-Dichloropropane	< 0 0004	mg/l	4753	9/19/01	14 36
2,2-Dichloropropane	< 0 0007	mg/l	4753	9/19/01	14 36
1,1-Dichloropropene	< 0 0005	mg/l	4753	9/19/01	14.36
cis-1,3-Dichloropropene	< 0.0005	mg/l	4753	9/19/01	14 36
trans-1,3-Dichloropropene	< 0.0003	mg/l	4753	9/19/01	14 36
Ethylbenzene	< 0 00070	mg/l	4753	9/19/01	14 36
Hexachlorobutadiene	< 0 0004	mg/l	4753	9/19/01	14.36
2-Hexanone	< 0.0058	mg/l	4753	9/19/01	14.36
Isopropylbenzene	< 0.0005	mg/l	4753	9/19/01	14·36
4-Isopropyltoluene	< 0 0005	mg/l	4753	9/19/01	14 36
4-Methyl-2-pentanone	< 0.0034	mg/l	4753	9/19/01	14 36
Methylene chloride	< 0 0005	mg/l	4753	9/19/01	14 36
Naphthalene	< 0 0006	mg/l	4753	9/19/01	14 36
n-Propylbenzene	< 0 0006	mg/l	4753	9/19/01	14 36
Styrene	< 0 0005	mg/l	4753	9/19/01	14 36
1,1,1,2-Tetrachloroethane	< 0 0008	mg/l	4753	9/19/01	14 36
1,1,2,2-Tetrachloroethane	< 0 0006	mg/l	4753	9/19/01	14 36
Tetrachloroethene	< 0 00070	mg/l	4753	9/19/01	14.36
Toluene	< 0 00050	mg/l	4753	9/19/01	14 36
1,2,3-Trichlorobenzene	< 0.0007	mg/l	4753	9/19/01	14 36
1,2,4-Trichlorobenzene	< 0 0007	mg/l	4753	9/19/01	14·36
1,1,1-Trichloroethane	< 0 00040	mg/l	4753	9/19/01	14 36
1,1,2-Trichloroethane	< 0 0006	mg/l	4753	9/19/01	14 36

TestAmerica
INCORPORATED

PROJECT QUALITY CONTROL DATA
Project Number:

Blank Data

Analyte	Blank Value	Units	Q.C Batch	Analysis Date	Analysis Time
Trichloroethene	< 0 00050	mg/l	4753	9/19/01	14.36
1,2,3-Trichloropropane	< 0 0006	mg/l	4753	9/19/01	14 36
1,2,4-Trimethylbenzene	< 0 0005	mg/l	4753	9/19/01	14.36
1,3,5-Trimethylbenzene	< 0 0006	mg/l	4753	9/19/01	14·36
Vinyl chloride	< 0 0007	mg/l	4753	9/19/01	14 36
Xylenes, Total	< 0.00080	mg/l	4753	9/19/01	14.36
Bromodichloromethane	< 0 0004	mg/l	4753	9/19/01	14·36
Trichlorofluoromethane	< 0 0006	mg/l	4753	9/19/01	14 36
VOA Surr 1,2-DCA-d4	117	% Rec	4753	9/19/01	14 36
VOA Surr Toluene-d8	123	% Rec	4753	9/19/01	14 36
VOA Surr, 4-BFB	122	% Rec	4753	9/19/01	14 36
VOA Surr, DBFM	114	% Rec	4753	9/19/01	14 36

- Value outside Laboratory historical or method prescribed QC limits

End of Report for Project 253215

SPECIALIZED ASSAYS
ENVIRONMENTAL

637 39

7A- 030091

REFERRING CLIENT 7A Knoxville

Sty 5860

0913010216.5.99

2960 Foster Creighton Drive
Nashville, TN 37204
615-726-0177, 800-765-0980
FAX 615/726-3404

Level II

LING CONTROL NUMBER (FOR LAB USE ONLY)

PROJECT #

P.O. #

MPLERS (Signature-Please Print) 25325

PROJECT NAME Memphis Repot Excavation

FOR LAB USE ONLY ACC#	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	# OF CONT	ANALYSIS REQUESTED
	130847	9/18/01	5:50			4	VOA's pH
	48	9/18/01	5:52			4	VOA's pH
	1308 49	—	—			1	VOA's

nquished by (Signature)	Date / Time	Received by (Signature)
nquished by: (Signature)	Date / Time	Received by (Signature)
nquished by (Signature)	Date / Time	Received by (Signature)
nquished by: (Signature)	Date / Time	Received by (Signature)

Received for Laboratory by: PLR 9/19/01 9:00

Remarks 24 hr TAT

Filled out by PRB

SAI Project #: Via info from Jeremy Duncan over phone

For further assistance in completing the chain of custody form please refer to the instructions found on the opposite side

TESTAMERICA,INC.-NASHVILLE

COOLER RECEIPT FORM

Client: Stp BC# 253215

Cooler Received On: 9/19/01 And Opened On: 9/19/01 By: Paul Buckingham

(Signature)

1. Temperature of Cooler when opened 3 0 Degrees Celsius
2. Were custody seals on outside of cooler?.....YES...NO
   a. If yes, how many, what kind and where: 1 front
3. Were custody seals on containers and intact?.....NO...YES
4. Were the seals intact, signed, and dated correctly?.....YES...NO
5. Were custody papers inside cooler?.....YES...NO
6. Were custody papers properly filled out (ink,signed,etc)?.....YES...NO
7. Did you sign the custody papers in the appropriate place?.....YES...NO
8. What kind of packing material used? Bubblewrap Peanuts Vermiculite Other None
9. Was sufficient ice used (if appropriate)?.....YES...NO
10. Did all bottles arrive in good condition(unbroken)?.....YES...NO
11. Were all bottle labels complete (#,date,signed,pres,etc)?.....YES...NO
12. Did all bottle labels and tags agree with custody papers?.....YES...NO
13. Were correct bottles used for the analysis requested?.....YES...NO
14. a. Were VOA vials received?.....YES...NO
    b. Was there any observable head space present in any VOA vial?.....NO...YES
15. Was sufficient amount of sample sent in each bottle?.....YES...NO
16. Were correct preservatives used?.....YES...NO
17. Was residual chlorine present?.....NO...YES
18. Corrective action taken, if necessary:

See attached for resolution

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE