CQAB Project No. 6008

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CHEMISTRY QUALITY ASSURANCE BRANCH
OMAHA, NEBRASKA 68102

16 MAR 2001

Rec'd 20 Mar 2001 LSI

Subject: Quality Assurance Test Results

Project: Former Plumbrook Ordnance Works - TNT Area C, OH
Intended Use: FUDS
Source of Material:

Submitted by: Linda Ingram, CELRN-ED-R-M
Date Sampled: 18 - 27 Sep 00 **Date Received:** 20 - 28 Sep 00
Method of Test or Specification: See attached test result sheets

References: Nashville District Request No. W38XDD1399292, AMEND dated 07 Sep 00

-- REMARKS --

1. Review comments for project data are presented on the following pages.

2. Sample receipt information and analytical data are provided in the following parts of the report.

   Part A: Sample Receipt Information (1 page)
   Part B: Chain-of-Custody Information (13 pages)
   Part C: Quality Assurance Test Results (237 pages)

3. The Quality Assurance Test Results are attached; if you have any questions please contact Laura Percifield at (402)444-4313.

✓ VOA
✓ BNA
✓ PCB
✓ Explosives
✓ Metals

Submitted by:

Douglas B. Taggart

DOUGLAS B. TAGGART
Chief, Chemistry Quality
Assurance Branch

LP 3/12/01

Perci

200-1e

G05OH001815_03.02_1002_a

TEST RESULTS

1. SUMMARY

CQAB compiled the data package according to the USACE HTRW minimum chemistry reporting requirements. CQAB performed the analyses using EPA methods. Proper quality control procedures were followed and documented. The method quality control results outlined below support the usability of the data.

2. DISCUSSION

a. Six soil and eight water samples were received by CQAB between 20 Sep 00 and 28 Sep 00. The samples were analyzed for one or more of the following:
   - Volatile organics (VOA) by EPA method 8260.
   - Base/neutral/acid extractable organics (BNA) by EPA method 8270.
   - PCB by EPA method 8082.
   - Explosives by EPA method 8330.
   - Metals by EPA method: 7470 or 7471 for mercury; 7841 or 6010 for thallium; and 6010 for aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, sodium, vanadium, and zinc.

   The methods are from SW-846 (1986), "Test Methods for Evaluation of Solid Waste."

b. The following shipping and chain-of-custody errors were noted for the sample shipments received by CQAB.

   1) There were bubbles in most of the trip blank containers.

   2) The custody paper received on 28 Sep 00 was a copy instead of the original.

   Part "B" of this report contains the chain-of-custody information.

c. The samples were analyzed by CQAB.

   Part "C" of this report lists the analytical test results.

3. METHOD QUALITY CONTROL

a. VOA:
   1) Surrogate spike recoveries were within acceptable limits.
   2) The method blanks were free of contamination.
   3) The trip blanks were free of contamination except for low levels of methylene chloride (pages C37 and C58).
   4) Laboratory duplicate results matched the results from the original field samples except for toluene whose relative percent difference (RPD) was above acceptable limits (page C31).

5) Matrix spike/matrix spike duplicate (MS/MSD) recoveries were within acceptable limits except for dichlorodifluoromethane, acetone, vinyl acetate, 2-butanone, 4-methyl-2-pentanone, 2-hexanone, 1,1,2,2-tetrachloroethane, 1,2,3-trichloropropane, 1,2-dibromo-3-chloropropane, hexachlorobutadiene, 1,2-dibromoethane, and naphthalene whose recoveries were outside acceptable limits (pages C7, C8, C33, C34, C45, C46, and C67). Relative percent differences (RPD) for MS/MSD recoveries were within acceptable limits except for naphthalene and vinyl acetate whose RPD were above acceptable limits (pages C8, C33, and C34). MS/MSD samples were not analyzed with WG6573 and WG6591.
6) Laboratory control sample (LCS) recoveries were within acceptable limits except for acetone, 2-butanone, 2-hexanone, 1,2-dibromo-3-chloropropane, naphthalene, vinyl acetate, and dichlorodifluoromethane whose recoveries were out (pages C9, C10, C25, C35, C57, and C82).
7) Holding times were met.

b. BNA:
1) Surrogate spike recoveries were within acceptable limits except WG6578 had all surrogate recoveries outside acceptable limits for the LCS (pages C85 and C92).
2) The method blanks were free of contamination except for low levels of phenol, di-n-butyl phthalate, and bis(2-ethylhexyl) phthalate (pages C98, C106, C107, C108, and C116). Low levels of 29 analytes were detected in the method blank for WG6578 (pages C85 and C86).
3) Laboratory duplicate results matched the results from the original field samples except in two instances. For WG6690 the RPD for 2,4-dinitrotoluene was outside acceptable limits (page C99). WG6579 and RPD above acceptable limits for 12 analytes (pages C109 and C110).
4) MS/MSD recoveries were within acceptable limits except for 2,4-dinitrotoluene (97%/99%, 93%), acenaphthene, and pyrene whose recoveries were outside acceptable limits (pages C101 and C111). RPD for MS/MSD recoveries were within acceptable limits except for acenaphthene and pyrene whose RPD were above acceptable limits (page C111). MSD samples were not analyzed with WG6578 and WG6616 due to insufficient sample volume.
5) LCS recoveries were within acceptable limits except WG6578 had recoveries outside acceptable limits for 31 analytes (pages C85, C91, and C92).
6) Holding times were met.

c. PCB:
1) Surrogate spike recoveries were within acceptable limits.
2) The method blanks were free of contamination.
3) Laboratory duplicate results matched the results from the original field samples.
4) The MS/MSD recoveries were within acceptable limits. RPD for MS/MSD recoveries were within acceptable limits. MSD samples for WG6547 and WG6592 and MS/MSD samples for WG6592 were not analyzed due to insufficient sample volume.

5) LCS recoveries were within acceptable limits.
6) Holding times were met.

d. Explosives:
1) Surrogate spike recoveries were within acceptable limits except WG6604 had the benzaldehyde diluted to below detection limits for sample AA3012 (pages C164 and C168).
2) The method blanks were free of contamination.
3) Laboratory duplicate results matched the results from the original field samples except for RDX, 1,3-dinitrobenzene, and 4-amino-2,6-dinitrotoluene whose RPD were above acceptable limits (page C168).
4) The MS/MSD recoveries were within acceptable limits except in the following instances: WG6575 had 1,3,5-trinitrobenzene recoveries outside acceptable limits (page C156). WG6604 had recoveries of 7 analytes out (page C169). WG6634 had nitrobenzene and 2,4,6-trinitrotoluene recoveries outside acceptable limits (page C178). RPD for MS/MSD recoveries were within acceptable limits.
5) LCS recoveries were within acceptable limits except for nitrobenzene whose recovery was out (page C179).
6) Holding times were met except samples AA3012 and AB3012 were analyzed past holding times.

e. Metals:
1) The method blanks were free of contamination except for a low level of nickel (page C222).
2) Laboratory duplicate results matched the results from the original field samples except for zinc whose RPD was above acceptable limits (page C197).
3) The MS/MSD recoveries were within acceptable limits except for calcium, potassium, manganese, antimony, and zinc whose recoveries were out (pages C194 and C198). RPD for MS/MSD recoveries were within acceptable limits.
4) LCS recoveries were within acceptable limits.
5) Holding times were met.

A1

PART A

SAMPLE RECEIPT INFORMATION

QA/QC Table #	Customer Sample ID	Date Sampled	Matrix	CQAB # Assigned	Tests Assigned	QA Test Results Page Number
	09182000-TB3	18 Sep 00	Water	M000975-002	VOA	C11-C12
001	AB2017	18 Sep 00	Water	M000975-003	Metals	C208-C209
				M000975-003	BNA	C83
				M000975-003	Explosives	C158
				M000975-003	PCB	C122
				M000975-003	VOA	C13-C14
002	AB1017	18 Sep 00	Soil	M000975-001	Metals	C180-C181
				M000975-001	BNA	C104
				M000975-001	Explosives	C151
				M000975-001	PCB	C128
				M000975-001	VOA	C1-C2
	09202000-TB3	19 Sep 00	Water	M000975-005	VOA	C15-C16
003	AB2019	19 Sep 00	Water	M000975-006	Metals	C210-C211
				M000975-006	BNA	C84
				M000975-006	Explosives	C159
				M000975-006	PCB	C123
				M000975-006	VOA	C17-C18
004	AB1019	19 Sep 00	Soil	M000975-004	Metals	C182-C183
				M000975-004	BNA	C105
				M000975-004	Explosives	C152
				M000975-004	PCB	C129
				M000975-004	VOA	C27-C28
	09262000-TB3	26 Sep 00	Water	M000992-001	VOA	C37-C38
005	AA3012	26 Sep 00	Water	M000992-003	Metals	C215-C217
				M000992-003	BNA	C114
				M000992-003	Explosives	C164
				M000992-003	PCB	C134
				M000992-003	VOA	C39-C40
				M000992-002	Metals-dissolved	C212-C214
006	AB0435	26 Sep 00	Soil	M000992-004	Metals	C190-C191
				M000992-004	BNA	C93
				M000992-004	Explosives	C171
				M000992-004	PCB	C139
				M000992-004	VOA	C49-C50
	09272000-TB3	27 Sep 00	Water	M000997-001	VOA	C58-C59
007	AB0450	27 Sep 00	Soil	M000997-005	Metals	C186-C187
				M000997-005	BNA	C96
				M000997-005	Explosives	C173
				M000997-005	PCB	C141
				M000997-005	VOA	C72-C73
008	AB0428	27 Sep 00	Soil	M000997-004	Metals	C184-C185
				M000997-004	BNA	C95
				M000997-004	Explosives	C172
				M000997-004	PCB	C140
				M000997-004	VOA	C70-C71
009	AB0453	27 Sep 00	Soil	M000997-006	Metals	C188-C189
				M000997-006	BNA	C97
				M000997-006	Explosives	C174
				M000997-006	PCB	C142
				M000997-006	VOA	C74-C75
010	AB3012	27 Sep 00	Water	M000997-003	Metals	C220-C221
				M000997-003	BNA	C115
				M000997-003	Explosives	C165
				M000997-003	PCB	C147
				M000997-003	VOA	C60-C61
				M000997-002	Metals-dissolved	C218-C219

PART B

CHAIN-OF-CUSTODY INFORMATION

Page No.	Chain-of-Custody No.	Date Signed
B1-B2	090019-USACE	19 Sep 00
B4-B5	0902000-USACE	20 Sep 00
B7-B8	09262000-USACE	26 Sep 00
B10-B11	09272000-USACE	27 Sep 00

B1

IT CORPORATION
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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 090019-USACE

Project Number: 773206
Samples Shipment Date: 19 SEP 2000
Bill To: Accounts Receivable
312 Directors Drive
Knoxville TN 37923

Project Name: PLUMBROOK ORDNANCE WOR
ab Destination: US ACE - OHIO RIVER DIVISION LABORAT

Sample Coordinator: Duane Nielsen
Lab Contact: John Adams

Turnaround Time:
Project Contact: Kim Napier
Report To: Kim Napier
312 Directors Drive
Knoxville TN 37923

Carrier/Waybill No.: Fed Ex/8212 2620 3434

Special Instructions: LIMS # 6008

Possible Hazard Indentification:

Non-hazard | Flammable | Skin Irritant | Poison B | Unknown X

1. Relinquished By (Signature/Affiliation) [signature] Date: 9/19/00 Time: 14:00
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

Sample Disposal:

Return to Client | Disposal by Lab X | Archive (mos.)

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) Shelly Dunn Date: 9/20/00 Time: 1000

Comments:

Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Fil	CID	Condition On Receipt
09182000-TB3	FIELDQC-BW-09182000-TB3-TB	18 SEP 2000	07:00	40 ml GVIAL,SEP	2	HCl<pH 2	TCL Volatiles by SW-846 8260B	N		
AB1017	PBOW-00-SD-TNTC-SD01-AB1017-(00-00)	18 SEP 2000	09:50	8 oz CWM	2	None except cool to 4 C	TCL Volatiles by SW-846 8260B	N		
AB1017	PBOW-00-SD-TNTC-SD01-AB1017-(00-00)	18 SEP 2000	09:50	8 oz CWM	1	None except cool to 4 C	PCBs by SW-846 8082, TCL Semivolatiles by SW-846 8270C	N		
AB1017	PBOW-00-SD-TNTC-SD01-AB1017-(00-00)	18 SEP 2000	09:50	8 oz CWM	1	None except cool to 4 C	Nitroaromatics by SW-846 8330, TAL Metals by SW-846 6010B/7471A in soil	N		
AB2017	PBOW-00-SW-TNTC-SW01-AB2017-(00-00)	18 SEP 2000	09:30	40 mL GVIAL,SEP	3	HCl<pH 2	TCL Volatiles by SW-846 8260B	N		
AB2017	PBOW-00-SW-TNTC-SW01-AB2017-(00-00)	18 SEP 2000	09:30	1 L Amb. Glass	2	None except cool to 4 C	TCL Semivolatiles by SW-846 8270C	N		
AB2017	PBOW-00-SW-TNTC-SW01-AB2017-(00-00)	18 SEP 2000	09:30	1 L Amb. Glass	2	None except cool to 4 C	Nitroaromatics by SW-846 8330	N		

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IT CORPORATION
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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 090019-USACE

Sample No	Sample Name	Sample Date	Sample Time	Container	Preservative	Requested Testing Program	Fil	CID	Condition On Receipt
AB2017	PBOW-00-SW-TNTC-SW01-AB2017-(00-00)	18 SEP 2000	09:30	1 L HDPE	1 HNO3, pH<2	TAL Metals by SW-846 6010B/7470A in water	N		
AB2017	PBOW-00-SW-TNTC-SW01-AB2017-(00-00)	18 SEP 2000	09:30	1 L Amb. Glass	2 None except cool to 4 C	PCBs by SW-846 8082	N		

B3

COOLER RECEIPT FORM

LIMS# 6008 CQAB Cooler # _____ Number of Coolers 1 Contractor Cooler LT

PROJECT: Plumbrook Date received: 9/20/00

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS.

A. PRELIMINARY EXAMINATION PHASE: Date cooler opened: 9/20 C-of-C Number: 090019-USACE

by (print) Sherry Swink (sign) Sherry Swink

1. Did cooler come with a shipping slip (air bill, etc.)? ..... (YES) NO

   If YES, enter carrier name & air bill number here: Fed Ex

2. Were custody seals on outside of cooler? ..... (YES) NO

   How many & where: 2 (1 ea side) seal date: 9/19/00 seal name illegible

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (YES) NO

4. Did you screen samples for radioactivity using the Geiger Counter..... YES NO

5. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... NA ..... (YES) ~~NO~~

6. Were custody papers filled out properly (ink, signed, etc.)? ..... not timed ..... (YES) (NO)

7. Did you sign custody papers in the appropriate place? ..... (YES) NO

8. Was project identifiable from custody papers? ..... YES (NO)

9. Type of ice: reg Temperature: <2.0 Date temperature measured: 9/20

10. Describe type of packing in cooler: Vermiculite / bub wrap

11. Were all bottles sealed in separate plastic bags? ..... (YES) NO

B. LOG-IN PHASE: Date samples were logged-in: 9/21/00

by (print) Sherry Swink (sign) Sherry Swink

12. Did all bottles arrive unbroken & were labels in good condition? ..... (YES) NO

13. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO

14. Did all bottle labels agree with custody papers? ..... (YES) NO

15. Were correct containers used for the tests indicated? ..... (YES) NO

16. Were correct preservatives added to samples? ..... (YES) NO

17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

18. Was headspace absent in Volatile samples? If NO, list by QA#: 2-TB YES (NO)

    QA # (cont.) _____

19. Were the custody papers checked against the sample receipt form? By whom? Gm Date: 13 Oct 00

B4

IT CORPORATION
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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 09202000-USACE

Project Number: 773206
Samples Shipment Date: 20 SEP 2000
Project Name: PLUMBROOK ORDNANCE WOR
ab Destination: US ACE - OHIO RIVER DIVISION LABORAT
Sample Coordinator: Duane Nielsen
Lab Contact: John Adams
Turnaround Time:
Project Contact: Kim Napier
Carrier/Waybill No.: Fed Ex/8212 2620 3386

Bill To: Accounts Receivable
312 Directors Drive
Knoxville TN 37923

Report To: Kim Napier
312 Directors Drive
Knoxville TN 37923

Special Instructions: LIMS # 6008

Possible Hazard Indentification:

Non-hazard | Flammable | Skin Irritant | Poison B | Unknown X

1. Relinquished By (Signature/Affiliation) Chris Fuslin — Date: 09/20/00 Time: 15:00
2. Relinquished By (Signature/Affiliation) — Date: Time:
3. Relinquished By (Signature/Affiliation) — Date: Time:

Sample Disposal:

Return to Client | Disposal by Lab X | Archive (mos.)

1. Received By (Signature/Affiliation) — Date: Time:
2. Received By (Signature/Affiliation) — Date: Time:
3. Received By (Signature/Affiliation) Sherry Swank — Date: 9/21/00 Time: 1000

Comments:

Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Fil	CID	Condition On Receipt
09192000-TB3	FIELDQC-BW-09192000-TB3-TB	19 SEP 2000	07:00	40 ml GVIAL,SEP	2	HCl<pH 2	TCL Volatiles by SW-846 8260B	N		
AB1019	PBOW-00-SD-TNTC-SD08-AB1019-(00-00)	19 SEP 2000	14:30	8 oz CWM	2	None except cool to 4 C	TCL Volatiles by SW-846 8260B	N		
AB1019	PBOW-00-SD-TNTC-SD08-AB1019-(00-00)	19 SEP 2000	14:30	8 oz CWM	1	None except cool to 4 C	PCBs by SW-846 8082, TCL Semivolatiles by SW-846 8270C	N		
AB1019	PBOW-00-SD-TNTC-SD08-AB1019-(00-00)	19 SEP 2000	14:30	8 oz CWM	1	None except cool to 4 C	Nitroaromatics by SW-846 8330, TAL Metals by SW-846 6010B/7471A in soil	N		
AB2019	PBOW-00-SW-TNTC-SW08-AB2019-(00-00)	19 SEP 2000	14:00	40 mL GVIAL,SEP	3	HCl<pH 2	TCL Volatiles by SW-846 8260B	N		
AB2019	PBOW-00-SW-TNTC-SW08-AB2019-(00-00)	19 SEP 2000	14:00	1 L Amb. Glass	2	None except cool to 4 C	TCL Semivolatiles by SW-846 8270C	N		
AB2019	PBOW-00-SW-TNTC-SW08-AB2019-(00-00)	19 SEP 2000	14:00	1 L Amb. Glass	2	None except cool to 4 C	Nitroaromatics by SW-846 8330	N		

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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 09202000-USACE

Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Fil	CID	Condition On Receipt
AB2019	PBOW-00-SW-TNTC-SW08-AB2019-(00-00)	19 SEP 2000	14:00	1 L HDPE	1	HNO3, pH<2	TAL Metals by SW-846 6010B/7470A in water	N		
AB2019	PBOW-00-SW-TNTC-SW08-AB2019-(00-00)	19 SEP 2000	14:00	1 L Amb. Glass	2	None except cool to 4 C	PCBs by SW-846 8082	N		

B6

COOLER RECEIPT FORM

LIMS# 6008 CQAB Cooler # _____ Number of Coolers 1 Contractor Cooler IT

PROJECT: Plumbrook Date received: 9/21/00

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS.

A. PRELIMINARY EXAMINATION PHASE: Date cooler opened: 9/21/00 C-of-C Number: 09202000-USANE

by (print) Sherry Swink (sign) Sherry Swink

1. Did cooler come with a shipping slip (air bill, etc.)? ..... (YES) NO

   If YES, enter carrier name & air bill number here: Fed Ex

2. Were custody seals on outside of cooler? ..... (YES) NO

   How many & where: other side seal date: 9/20/00 seal name illegible

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (YES) NO
4. Did you screen samples for radioactivity using the Geiger Counter..... YES NO
5. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... (YES) NO
6. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO
7. Did you sign custody papers in the appropriate place? ..... (YES) NO
8. Was project identifiable from custody papers? ..... (YES) NO
9. Type of ice: dry Temperature: 2.0 Date temperature measured: 9/21
10. Describe type of packing in cooler: bubble wrap
11. Were all bottles sealed in separate plastic bags? ..... (YES) NO

B. LOG-IN PHASE: Date samples were logged-in: 9/21/00

by (print) Sherry Swink (sign) Sherry Swink

12. Did all bottles arrive unbroken & were labels in good condition? ..... (YES) NO
13. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO
14. Did all bottle labels agree with custody papers? ..... (YES) NO
15. Were correct containers used for the tests indicated? ..... (YES) NO
16. Were correct preservatives added to samples? ..... (YES) NO
17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO
18. Was headspace absent in Volatile samples? If NO, list by QA#: 2-JB YES (NO)

    QA # (cont.) _____

19. Were the custody papers checked against the sample receipt form? By whom? gm Date: 13Oct00

B7

IT CORPORATION
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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 09262000-USACE

Project Number: 773206
Samples Shipment Date: 26 SEP 2000
Project Name: PLUMBROOK ORDNANCE WOR
ab Destination: USACE Northwest Division Laboratory
Sample Coordinator: Duane Nielsen
Lab Contact: Douglas Taggart
Turnaround Time:
Project Contact: Kim Napier
Carrier/Waybill No.: Fed Ex/8212 2620 3283

Bill To: Accounts Receivable
312 Directors Drive
Knoxville TN 37923

Report To: Kim Napier
312 Directors Drive
Knoxville TN 37923

Special Instructions: ENCORE SAMPLES HAVE 48 HOUR HOLD TIME. LIMS # 6008.

Possible Hazard Indentification:
Non-hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [X]

Sample Disposal:
Return to Client [ ] Disposal by Lab [X] Archive (mos.)

1. Relinquished By (Signature/Affiliation) Chris Freshour Date: 9/26/00 Time: 18:00
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) Shelly Swunk Date: 9/27/00 Time: 1015

Comments: ACETATE TUBES ARE FOR EXTRA VOC ANALYSIS, IF NEEDED AS PER GPL LABS.

Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Fil	CID	Condition On Receipt
09262000-TB3	FIELDQC-GW-09262000-TB3-TB	26 SEP 2000	07:00	40 ml GVIAL,SEP	2	HCl<pH 2	TCL Volatiles by SW-846 8260B	N		
AA3012	PBOW-00-GW-TNTA-GW06-AA3012-(00-00)	26 SEP 2000	11:10	40 mL GVIAL,SEP	3	HCl<pH 2	TCL Volatiles by SW-846 8260B	N		
AA3012	PBOW-00-GW-TNTA-GW06-AA3012-(00-00)	26 SEP 2000	11:10	1 L Amb. Glass	2	None except cool to 4 C	TCL Semivolatiles by SW-846 8270C	N		
AA3012	PBOW-00-GW-TNTA-GW06-AA3012-(00-00)	26 SEP 2000	11:10	1 L Amb. Glass	2	None except cool to 4 C	Nitroaromatics by SW-846 8330	N		
AA3012	PBOW-00-GW-TNTA-GW06-AA3012-(00-00)	26 SEP 2000	11:10	1 L HDPE	2	HNO3, pH<2	TAL Metals by SW-846 6010B/7470A in water	N		
AA3012	PBOW-00-GW-TNTA-GW06-AA3012-(00-00)	26 SEP 2000	11:10	1 L HDPE	2	HNO3, pH<2	TAL Metals by SW-846 6010B/7470A in water	Y		
AA3012	PBOW-00-GW-TNTA-GW06-AA3012-(00-00)	26 SEP 2000	11:10	1 L Amb. Glass	2	None except cool to 4 C	PCBs by SW-846 8082	N		

IT CORPORATION
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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 09262000-USACE

Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Fil	CID	Condition On Receipt
AB0435	PBOW-00-SO-TNTC-SO134-AB0435-(03-04)	26 SEP 2000	15:30	5 oz ENCORE	3	None except cool to 4 C	TCL Volatiles by SW-846 8260B	N		
AB0435	PBOW-00-SO-TNTC-SO134-AB0435-(03-04)	26 SEP 2000	15:30	8 oz CWM	1	None except cool to 4 C	PCBs by SW-846 8082, TCL Semivolatiles by SW-846 8270C	N		
AB0435	PBOW-00-SO-TNTC-SO134-AB0435-(03-04)	26 SEP 2000	15:30	8 oz CWM	1	None except cool to 4 C	Nitroaromatics by SW-846 8330, TAL Metals by SW-846 6010B/7471A in soil	N		

B

COOLER RECEIPT FORM

LIMS# 6008 CQAB Cooler # — Number of Coolers 1 Contractor Cooler IT

PROJECT: Plumbrook Date received: 9/27/00

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS.

A. PRELIMINARY EXAMINATION PHASE: Date cooler opened: 9/27/00 C-of-C Number: 09262000-USACE

by (print) Sherry Swink (sign) Sherry Swink

1. Did cooler come with a shipping slip (air bill, etc.)? ..... YES NO

   If YES, enter carrier name & air bill number here: Fed Ex

2. Were custody seals on outside of cooler? ..... YES NO

   How many & where: Cleveland, seal date: 9/26/00 seal name Meagher

3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO
4. Did you screen samples for radioactivity using the Geiger Counter..... YES NO
5. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... YES NO
6. Were custody papers filled out properly (ink, signed, etc.)? ..... YES NO
7. Did you sign custody papers in the appropriate place? ..... YES NO
8. Was project identifiable from custody papers? ..... YES NO
9. Type of ice: Ice Temperature: <2.0° Date temperature measured: 9/27
10. Describe type of packing in cooler: bubble wrap
11. Were all bottles sealed in separate plastic bags? ..... YES NO

B. LOG-IN PHASE: Date samples were logged-in: 9/27/00

by (print) Sherry Swink (sign) Sherry Swink

12. Did all bottles arrive unbroken & were labels in good condition? ..... YES NO
13. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... YES NO
14. Did all bottle labels agree with custody papers? ..... YES NO
15. Were correct containers used for the tests indicated? ..... YES NO
16. Were correct preservatives added to samples? ..... YES NO
17. Was a sufficient amount of sample sent for tests indicated? ..... YES NO
18. Was headspace absent in Volatile samples? If NO, list by QA#: 1-TB YES NO

    QA # (cont.)

19. Were the custody papers checked against the sample receipt form? By whom? gm Date: 13 Oct 00

B10

IT CORPORATION
A Member of The IT Group

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 09272000-USACE

Project Number: 773206
Samples Shipment Date: 27 SEP 2000
Project Name: PLUMBROOK ORDNANCE WOR
ab Destination: USACE Northwest Division Laboratory
Sample Coordinator: Duane Nielsen
Lab Contact: Douglas Taggart
Turnaround Time:
Project Contact: Kim Napier
Carrier/Waybill No.: Fed Ex/8212 2620 3272

Bill To: Accounts Receivable
312 Directors Drive
Knoxville TN 37923

Report To: Kim Napier
312 Directors Drive
Knoxville TN 37923

Special Instructions: 48 HOUR HOLD TIME ON ENCORE SAMPLES. LIMS # 6008.

Possible Hazard Indentification:
Non-hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [X]

Sample Disposal:
Return to Client [ ] Disposal by Lab [X] Archive (mos.)

1. Relinquished By (Signature/Affiliation) Chris Julian Date: 9/27/00 Time: 18:00
2. Relinquished By (Signature/Affiliation) Date: Time:
3. Relinquished By (Signature/Affiliation) Date: Time:

1. Received By (Signature/Affiliation) Date: Time:
2. Received By (Signature/Affiliation) Date: Time:
3. Received By (Signature/Affiliation) Shelley Swink Date: 9/28/00 Time: 1015

Comments: ACETATE TUBES ARE FOR ADDITIONAL VOC ANALYSIS IF NEEDED, PER GPL LABS.

Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	Fil	CID	Condition On Receipt
09272000-TB3	FIELDQC-BW-09272000-TB3-TB	27 SEP 2000	07:00	40 ml GVIAL,SEP	2	HCl<pH 2	TCL Volatiles by SW-846 8260B	N		
AB0428	PBOW-00-SO-TNTC-SO066-AB0428-(00-01)	27 SEP 2000	09:30	5 oz ENCORE	3	None except cool to 4 C	TCL Volatiles by SW-846 8260B	N		
AB0428	PBOW-00-SO-TNTC-SO066-AB0428-(00-01)	27 SEP 2000	09:30	8 oz CWM	1	None except cool to 4 C	PCBs by SW-846 8082, TCL Semivolatiles by SW-846 8270C	N		
AB0428	PBOW-00-SO-TNTC-SO066-AB0428-(00-01)	27 SEP 2000	09:30	8 oz CWM	1	None except cool to 4 C	Nitroaromatics by SW-846 8330, TAL Metals by SW-846 6010B/7471A in soil	N		
AB0450	PBOW-00-SO-TNTC-SO252-AB0450-(01-02)	27 SEP 2000	08:45	5 oz ENCORE	3	None except cool to 4 C	TCL Volatiles by SW-846 8260B	N		
AB0450	PBOW-00-SO-TNTC-SO252-AB0450-(01-02)	27 SEP 2000	08:45	8 oz CWM	1	None except cool to 4 C	PCBs by SW-846 8082, TCL Semivolatiles by SW-846 8270C	N		

IT CORPORATION
A Member of The IT Group

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: 09272000-USACE

Sample No	Sample Name	Sample Date	Sample Time	Container		Preservative	Requested Testing Program	Fil	CID	Condition On Receipt
AB0450	PBOW-00-SO-TNTC-SO252-AB0450-(01-02)	27 SEP 2000	08:45	8 oz CWM	1	None except cool to 4 C	Nitroaromatics by SW-846 8330, TAL Metals by SW-846 6010B/7471A in soil	N		
AB0453	PBOW-00-SO-TNTC-SO280-AB0453-(00-01)	27 SEP 2000	10:40	8 oz CWM	1	None except cool to 4 C	Nitroaromatics by SW-846 8330, TAL Metals by SW-846 6010B/7471A in soil	N		
AB0453	PBOW-00-SO-TNTC-SO280-AB0453-(00-01)	27 SEP 2000	10:40	8 oz CWM	1	None except cool to 4 C	PCBs by SW-846 8082, TCL Semivolatiles by SW-846 8270C	N		
AB0453	PBOW-00-SO-TNTC-SO280-AB0453-(00-01)	27 SEP 2000	10:40	5 oz ENCORE	3	None except cool to 4 C	TCL Volatiles by SW-846 8260B	N		
AB3012	PBOW-00-GW-TNTC-GW06-AB3012-(00-00)	27 SEP 2000	14:30	40 mL GVIAL,SEP	3	HCl<pH 2	TCL Volatiles by SW-846 8260B	N		
AB3012	PBOW-00-GW-TNTC-GW06-AB3012-(00-00)	27 SEP 2000	14:30	1 L Amb. Glass	2	None except cool to 4 C	TCL Semivolatiles by SW-846 8270C	N		
AB3012	PBOW-00-GW-TNTC-GW06-AB3012-(00-00)	27 SEP 2000	14:30	1 L Amb. Glass	2	None except cool to 4 C	Nitroaromatics by SW-846 8330	N		
AB3012	PBOW-00-GW-TNTC-GW06-AB3012-(00-00)	27 SEP 2000	14:30	1 L HDPE	1	HNO3, pH<2	TAL Metals by SW-846 6010B/7470A in water	N		
AB3012	PBOW-00-GW-TNTC-GW06-AB3012-(00-00)	27 SEP 2000	14:30	1 L HDPE	1	HNO3, pH<2	TAL Metals by SW-846 6010B/7470A in water	Y		
AB3012	PBOW-00-GW-TNTC-GW06-AB3012-(00-00)	27 SEP 2000	14:30	1 L Amb. Glass	2	None except cool to 4 C	PCBs by SW-846 8082	N		

B12

COOLER RECEIPT FORM

LIMS# 6008 CQAB Cooler # — Number of Coolers 1/2 Contractor Cooler IT

PROJECT: Plumbrook Date received: 9/28/00

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS.

A. PRELIMINARY EXAMINATION PHASE: Date cooler opened: 9/28/00 C-of-C Number: 09272000-USACE

by (print) Sherry Swink (sign) Sherry Swink

1. Did cooler come with a shipping slip (air bill, etc.)? ..... (YES) NO

   If YES, enter carrier name & air bill number here: ~~UPS~~ Fed Ex

2. Were custody seals on outside of cooler? ..... (YES) NO

   How many & where: 2 (lr side), seal date: 9/27, seal name [illegible]

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (YES) NO

4. Did you screen samples for radioactivity using the Geiger Counter..... YES NO

5. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... (YES) NO

6. Were custody papers filled out properly (ink, signed, etc.)? ..... Copy ..... YES (NO)

7. Did you sign custody papers in the appropriate place? ..... (YES) NO

8. Was project identifiable from custody papers? ..... (YES) NO

9. Type of ice: reg Temperature: <2.0 Date temperature measured: 9/28

10. Describe type of packing in cooler: bubble wrap

11. Were all bottles sealed in separate plastic bags? ..... (YES) NO

B. LOG-IN PHASE: Date samples were logged-in: 9/28/00

by (print) Sherry Swink (sign) Sherry Swink

12. Did all bottles arrive unbroken & were labels in good condition? ..... (YES) NO

13. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO

14. Did all bottle labels agree with custody papers? ..... (YES) NO

15. Were correct containers used for the tests indicated? ..... (YES) NO

16. Were correct preservatives added to samples? ..... (YES) NO

17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

18. Was headspace absent in Volatile samples? If NO, list by QA#: 2-TB YES (NO)

    QA # (cont.)

19. Were the custody papers checked against the sample receipt form? By whom? gm Date: 13 Oct 00

B13

COOLER RECEIPT FORM

LIMS# 6008 CQAB Cooler # — Number of Coolers 2/2 Contractor Cooler IT

PROJECT: Plumbrook Date received: 9/28/00

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS.

A. PRELIMINARY EXAMINATION PHASE: Date cooler opened: 9/28/00 C-of-C Number: 0527200D-USACE

by (print) Sherry Swink (sign) Sherry Swink

1. Did cooler come with a shipping slip (air bill, etc.)? ..... YES NO

   If YES, enter carrier name & air bill number here: 2nd Ex

2. Were custody seals on outside of cooler? ..... YES NO

   How many & where: _____, seal date: _____, seal name_____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO
4. Did you screen samples for radioactivity using the Geiger Counter..... YES NO
5. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... YES NO
6. Were custody papers filled out properly (ink, signed, etc.)? ..... CORR ..... YES NO
7. Did you sign custody papers in the appropriate place? ..... YES NO
8. Was project identifiable from custody papers? ..... YES NO
9. Type of ice: Reg Temperature: 2.0 Date temperature measured: 9/28
10. Describe type of packing in cooler: bubble wrap
11. Were all bottles sealed in separate plastic bags? ..... YES NO

B. LOG-IN PHASE: Date samples were logged-in: 9/28/00

by (print) Sherry Swink (sign) Sherry Swink

12. Did all bottles arrive unbroken & were labels in good condition? ..... YES NO
13. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... YES NO
14. Did all bottle labels agree with custody papers? ..... YES NO
15. Were correct containers used for the tests indicated? ..... YES NO
16. Were correct preservatives added to samples? ..... YES NO
17. Was a sufficient amount of sample sent for tests indicated? ..... YES NO
18. Was headspace absent in Volatile samples? If NO, list by QA#: _____ YES NO

    QA # (cont.) _____

19. Were the custody papers checked against the sample receipt form? By whom? gm Date: 13 Oct 00

All CRF 1/2

PART C

QUALITY ASSURANCE TEST RESULTS

C1

DEPARTMENT OF THE ARMY
Corps of Engineers
Chemistry Quality Assurance Branch

VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB1017
Sample ID: M000975-001
Batch ID: WG6553
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Analyzed: 09/25/00
Date Reported: 09/26/00

Matrix: Soil
Units: ug/kg
% Solids: 68.1
Dilution: 0.9

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	14	0.9
74-87-3	Chloromethane	u	6.9	0.9
75-01-4	Vinyl Chloride	u	6.9	0.9
74-83-9	Bromomethane	u	6.9	0.9
75-00-3	Chloroethane	u	14	0.9
75-69-4	Trichlorofluoromethane	u	6.9	0.9
67-64-1	Acetone	50 JB	69	20
75-35-4	1,1-Dichloroethene	u	6.9	0.9
75-09-2	Methylene Chloride	1.4 J	6.9	0.9
75-15-0	Carbon Disulfide	u	6.9	0.9
156-60-5	trans-1,2-Dichloroethene	u	6.9	0.9
108-05-4	Vinyl Acetate	u	69	9
75-34-3	1,1-Dichloroethane	u	6.9	0.9
78-93-3	2-Butanone	u	69	20
594-20-7	2,2-Dichloropropane	u	6.9	0.9
156-59-2	cis-1,2-Dichloroethene	u	6.9	0.9
67-66-3	Chloroform	u	6.9	0.9
74-97-5	Bromochloromethane	u	6.9	0.9
71-55-6	1,1,1-Trichloroethane	u	6.9	0.9
563-58-6	1,1-Dichloropropene	u	6.9	0.9
56-23-5	Carbon Tetrachloride	u	6.9	0.9
107-06-2	1,2-Dichloroethane	u	6.9	0.9
71-43-2	Benzene	u	6.9	0.9
79-01-6	Trichloroethene	u	6.9	0.9
78-87-5	1,2-Dichloropropane	u	6.9	0.9
75-27-4	Bromodichloromethane	u	6.9	0.9
74-95-3	Dibromomethane	u	6.9	0.9
108-10-1	4-Methyl-2-pentanone	u	69	20
10061-01-5	cis-1,3-Dichloropropene	u	6.9	0.9
108-88-3	Toluene	u	6.9	0.9
10061-02-6	trans-1,3-Dichloropropene	u	6.9	0.9
591-78-6	2-Hexanone	u	69	20
79-00-5	1,1,2-Trichloroethane	u	6.9	0.9
142-28-9	1,3-Dichloropropane	u	6.9	0.9
127-18-4	Tetrachloroethene	u	6.9	0.9
124-48-1	Dibromochloromethane	u	6.9	0.9
106-93-4	1,2-Dibromoethane	u	6.9	0.9
108-90-7	Chlorobenzene	u	6.9	0.9
100-41-4	Ethylbenzene	u	6.9	0.9
630-20-6	1,1,1,2-Tetrachloroethane	u	6.9	0.9
1330-20-7B	meta-/para-Xylenes	u	6.9	0.9
95-47-6	ortho-Xylene	u	6.9	0.9
100-42-5	Styrene	u	6.9	0.9
98-92-8	Isopropylbenzene	u	6.9	0.9
75-25-2	Bromoform	u	6.9	0.9
79-34-5	1,1,2,2-Tetrachloroethane	u	6.9	0.9
96-18-4	1,2,3-Trichloropropane	u	6.9	0.9
103-65-1	n-Propylbenzene	u	6.9	0.9

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
J: Estimated Concentration below laboratory reporting limit.
B: Compound also present in the method blank.

420 South 18th Street Omaha, NE 68102
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Phone: (402) 444-4300

C2

DEPARTMENT OF THE ARMY
Corps of Engineers
Chemistry Quality Assurance Branch

VOA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/18/00	Matrix:	Soil
Client Sample ID:	AB1017	Date Received:	09/20/00	Units:	ug/kg
Sample ID:	M000975-001	Date Analyzed:	09/25/00	% Solids:	68.1
Batch ID:	WG6553	Date Reported:	09/26/00	Dilution:	0.9
Method:	EPA 8260				
Analyst:	Robert Williams				

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
108-86-1	Bromobenzene	u	6.9	0.9
108-67-8	1,3,5-Trimethylbenzene	u	6.9	0.9
95-49-8	2-Chlorotoluene	u	6.9	0.9
106-43-4	4-Chlorotoluene	u	6.9	0.9
98-06-6	tert-Butylbenzene	u	6.9	0.9
95-63-6	1,2,4-Trimethylbenzene	u	6.9	0.9
135-98-8	sec-Butylbenzene	u	6.9	0.9
99-87-6	p-Isopropyltoluene	u	6.9	0.9
541-73-1	1,3-Dichlorobenzene	u	6.9	0.9
106-46-7	1,4-Dichlorobenzene	u	6.9	0.9
104-51-8	n-Butylbenzene	u	6.9	0.9
95-50-1	1,2-Dichlorobenzene	u	6.9	0.9
96-12-8	1,2-Dibromo-3-chloropropane	u	35	5
120-82-1	1,2,4-Trichlorobenzene	u	35	9
87-68-3	Hexachlorobutadiene	u	35	9
91-20-3	Naphthalene	u	35	9
87-61-6	1,2,3-Trichlorobenzene	u	35	9

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	112.	80-120	80-120	50.0
1,2-Dichloroethane-d4	107.	70-121	70-121	50.0
Toluene-d8	104.	81-117	81-117	50.0
4-Bromofluorobenzene	116.	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6553-1	Laboratory Control Sample:	WG6553-2
Laboratory Matrix Duplicate:	WG6553-3	Dilution:	NA
Matrix Spike:	WG6553-4	Dilution:	NA
Matrix Spike Duplicate:	WG6553-5		

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C3

DEPARTMENT OF THE ARMY
Corps of Engineers
Chemistry Quality Assurance Branch

VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/25/00 Matrix: Soil
Method Blank ID: WG6553-1 Date Reported: 09/26/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	9.9	1
74-87-3	Chloromethane	u	4.9	1
75-01-4	Vinyl Chloride	u	4.9	1
74-83-9	Bromomethane	u	4.9	1
75-00-3	Chloroethane	u	9.9	1
75-69-4	Trichlorofluoromethane	u	4.9	1
67-64-1	Acetone	26.2 J	49.	20
75-35-4	1,1-Dichloroethene	u	4.9	1
75-09-2	Methylene Chloride	u	4.9	1
75-15-0	Carbon Disulfide	u	4.9	1
156-60-5	trans-1,2-Dichloroethene	u	4.9	1
108-05-4	Vinyl Acetate	u	49.	10
75-34-3	1,1-Dichloroethane	u	4.9	1
78-93-3	2-Butanone	u	49.	20
594-20-7	2,2-Dichloropropane	u	4.9	1
156-59-2	cis-1,2-Dichloroethene	u	4.9	1
67-66-3	Chloroform	u	4.9	1
74-97-5	Bromochloromethane	u	4.9	1
71-55-6	1,1,1-Trichloroethane	u	4.9	1
563-58-6	1,1-Dichloropropene	u	4.9	1
56-23-5	Carbon Tetrachloride	u	4.9	1
107-06-2	1,2-Dichloroethane	u	4.9	1
71-43-2	Benzene	u	4.9	1
79-01-6	Trichloroethene	u	4.9	1
78-87-5	1,2-Dichloropropane	u	4.9	1
75-27-4	Bromodichloromethane	u	4.9	1
74-95-3	Dibromomethane	u	4.9	1
108-10-1	4-Methyl-2-pentanone	u	49.	20
10061-01-5	cis-1,3-Dichloropropene	u	4.9	1
108-88-3	Toluene	u	4.9	1
10061-02-6	trans-1,3-Dichloropropene	u	4.9	1
591-78-6	2-Hexanone	u	49.	20
79-00-5	1,1,2-Trichloroethane	u	4.9	1
142-28-9	1,3-Dichloropropane	u	4.9	1
127-18-4	Tetrachloroethene	u	4.9	1
124-48-1	Dibromochloromethane	u	4.9	1
106-93-4	1,2-Dibromoethane	u	4.9	1
108-90-7	Chlorobenzene	u	4.9	1
100-41-4	Ethylbenzene	u	4.9	1
630-20-6	1,1,1,2-Tetrachloroethane	u	4.9	1
1330-20-7B	meta-/para-Xylenes	u	4.9	1
95-47-6	ortho-Xylene	u	4.9	1
100-42-5	Styrene	u	4.9	1
98-92-8	Isopropylbenzene	u	4.9	1
75-25-2	Bromoform	u	4.9	1
79-34-5	1,1,2,2-Tetrachloroethane	u	4.9	1
96-18-4	1,2,3-Trichloropropane	u	4.9	1
103-65-1	n-Propylbenzene	u	4.9	1
108-86-1	Bromobenzene	u	4.9	1
108-67-8	1,3,5-Trimethylbenzene	u	4.9	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
J: Estimated Concentration below laboratory reporting limit.

MDL determined according to procedures in 40CFR Appendix B to part 136

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C4

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/25/00 Matrix: Soil
Method Blank ID: WG6553-1 Date Reported: 09/26/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
95-49-8	2-Chlorotoluene	u	4.9	1
106-43-4	4-Chlorotoluene	u	4.9	1
98-06-6	tert-Butylbenzene	u	4.9	1
95-63-6	1,2,4-Trimethylbenzene	u	4.9	1
135-98-8	sec-Butylbenzene	u	4.9	1
99-87-6	p-Isopropyltoluene	u	4.9	1
541-73-1	1,3-Dichlorobenzene	u	4.9	1
106-46-7	1,4-Dichlorobenzene	u	4.9	1
104-51-8	n-Butylbenzene	u	4.9	1
95-50-1	1,2-Dichlorobenzene	u	4.9	1
96-12-8	1,2-Dibromo-3-chloropropane	u	25.	5
120-82-1	1,2,4-Trichlorobenzene	u	25.	10
87-68-3	Hexachlorobutadiene	u	25.	10
91-20-3	Naphthalene	u	25.	10
87-61-6	1,2,3-Trichlorobenzene	u	25.	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	102.	80-120	80-120	50.0
1,2-Dichloroethane-d4	99.7	70-121	70-121	50.0
Toluene-d8	90.1	81-117	81-117	50.0
4-Bromofluorobenzene	88.2	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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C5

DEPARTMENT OF THE ARMY
Corps of Engineers
Chemistry Quality Assurance Branch

VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB1017
Sample ID: M000975-001
Lab Duplicate ID: WG6553-3
Method: EPA 8260

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Analyzed: 09/25/00
Date Reported: 09/26/00

Matrix: Soil
Units: ug/kg
% Solids: 68.1
Analyst: Robert Williams

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
75-71-8	Dichlorodifluoromethane	u	u	NC	25	14
74-87-3	Chloromethane	u	u	NC	25	7.1
75-01-4	Vinyl Chloride	u	u	NC	25	7.1
74-83-9	Bromomethane	u	u	NC	25	7.1
75-00-3	Chloroethane	u	u	NC	25	14
75-69-4	Trichlorofluoromethane	u	u	NC	25	7.1
67-64-1	Acetone	50 JB	62 JB	22	25	71
75-35-4	1,1-Dichloroethene	u	u	NC	25	7.1
75-09-2	Methylene Chloride	1.4 J	u	NC	25	7.1
75-15-0	Carbon Disulfide	u	u	NC	25	7.1
156-60-5	trans-1,2-Dichloroethene	u	u	NC	25	7.1
108-05-4	Vinyl Acetate	u	u	NC	25	71
75-34-3	1,1-Dichloroethane	u	u	NC	25	7.1
78-93-3	2-Butanone	u	u	NC	25	71
594-20-7	2,2-Dichloropropane	u	u	NC	25	7.1
156-59-2	cis-1,2-Dichloroethene	u	u	NC	25	7.1
67-66-3	Chloroform	u	u	NC	25	7.1
74-97-5	Bromochloromethane	u	u	NC	25	7.1
71-55-6	1,1,1-Trichloroethane	u	u	NC	25	7.1
563-58-6	1,1-Dichloropropene	u	u	NC	25	7.1
56-23-5	Carbon Tetrachloride	u	u	NC	25	7.1
107-06-2	1,2-Dichloroethane	u	u	NC	25	7.1
71-43-2	Benzene	u	u	NC	25	7.1
79-01-6	Trichloroethene	u	u	NC	25	7.1
78-87-5	1,2-Dichloropropane	u	u	NC	25	7.1
75-27-4	Bromodichloromethane	u	u	NC	25	7.1
74-95-3	Dibromomethane	u	u	NC	25	7.1
108-10-1	4-Methyl-2-pentanone	u	u	NC	25	71
10061-01-5	cis-1,3-Dichloropropene	u	u	NC	25	7.1
108-88-3	Toluene	u	u	NC	25	7.1
10061-02-6	trans-1,3-Dichloropropene	u	u	NC	25	7.1
591-78-6	2-Hexanone	u	u	NC	25	71
79-00-5	1,1,2-Trichloroethane	u	u	NC	25	7.1
142-28-9	1,3-Dichloropropane	u	u	NC	25	7.1
127-18-4	Tetrachloroethene	u	u	NC	25	7.1
124-48-1	Dibromochloromethane	u	u	NC	25	7.1
106-93-4	1,2-Dibromoethane	u	u	NC	25	7.1
108-90-7	Chlorobenzene	u	u	NC	25	7.1
100-41-4	Ethylbenzene	u	u	NC	25	7.1
630-20-6	1,1,1,2-Tetrachloroethane	u	u	NC	25	7.1
1330-20-7B	meta-/para-Xylenes	u	u	NC	25	7.1
95-47-6	ortho-Xylene	u	u	NC	25	7.1
100-42-5	Styrene	u	u	NC	25	7.1
98-92-8	Isopropylbenzene	u	u	NC	25	7.1
75-25-2	Bromoform	u	u	NC	25	7.1
79-34-5	1,1,2,2-Tetrachloroethane	u	u	NC	25	7.1
96-18-4	1,2,3-Trichloropropane	u	u	NC	25	7.1
103-65-1	n-Propylbenzene	u	u	NC	25	7.1
108-86-1	Bromobenzene	u	u	NC	25	7.1

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
J: Estimated Concentration below laboratory reporting limit.
B: Compound also present in the method blank.

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DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB1017
Sample ID: M000975-001
Lab Duplicate ID: WG6553-3
Method: EPA 8260

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Analyzed: 09/25/00
Date Reported: 09/26/00

Matrix: Soil
Units: ug/kg
% Solids: 68.1
Analyst: Robert Williams

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
108-67-8	1,3,5-Trimethylbenzene	u	u	NC	25	7.1
95-49-8	2-Chlorotoluene	u	u	NC	25	7.1
106-43-4	4-Chlorotoluene	u	u	NC	25	7.1
98-06-6	tert-Butylbenzene	u	u	NC	25	7.1
95-63-6	1,2,4-Trimethylbenzene	u	u	NC	25	7.1
135-98-8	sec-Butylbenzene	u	u	NC	25	7.1
99-87-6	p-Isopropyltoluene	u	u	NC	25	7.1
541-73-1	1,3-Dichlorobenzene	u	u	NC	25	7.1
106-46-7	1,4-Dichlorobenzene	u	u	NC	25	7.1
104-51-8	n-Butylbenzene	u	u	NC	25	7.1
95-50-1	1,2-Dichlorobenzene	u	u	NC	25	7.1
96-12-8	1,2-Dibromo-3-chloropropane	u	u	NC	25	35
120-82-1	1,2,4-Trichlorobenzene	u	u	NC	25	35
87-68-3	Hexachlorobutadiene	u	u	NC	25	35
91-20-3	Naphthalene	u	u	NC	25	35
87-61-6	1,2,3-Trichlorobenzene	u	u	NC	25	35

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard Name	Added (ug/kg)	Sample (ug/kg)	Sample Rec (%)	Dup (ug/kg)	Dup Rec (%)	CQAB Lab Performanc Range	Method 8260 Acceptance Range	RPD (%)	CQAB Lab Performance Range
Dibromofluoromethane	50.0	55.8	112.	54.2	108.	80-120	80-120	2.9	25
1,2-Dichloroethane-d4	50.0	53.7	107.	49.6	99.3	70-121	70-121	7.8	25
Toluene-d8	50.0	51.9	104.	49.9	99.7	81-117	81-117	4.1	25
4-Bromofluorobenzene	50.0	58.2	116.	51.3	103.	74-121	74-121	12.7	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Sample ID: M000975-001
MS Sample ID: WG6553-4
Method: EPA 8260
Analyst: Robert Williams

Date Analyzed: 09/25/00
Date Reported: 09/26/00

Matrix: Soil
Units: ug/kg
% Solids: 68.1

CAS Number	Compound	Sample Result	MS Conc	MS %Rec	QC Limits	MSD Conc	MSD %Rec	RPD (%)	QC Limits
75-71-8	Dichlorodifluoromethane	u	113	159 *	50-150	105	147	7.3	25
74-87-3	Chloromethane	u	83.0	116	50-150	84.1	118	1.4	25
75-01-4	Vinyl Chloride	u	82.7	116	50-150	70.3	98.6	16.2	25
74-83-9	Bromomethane	u	69.0	96.8	50-150	59.8	83.9	14.2	25
75-00-3	Chloroethane	u	77.3	108	50-150	69.9	98.1	10.	25
75-69-4	Trichlorofluoromethane	u	79.3	111	50-150	74.8	105	5.8	25
67-64-1	Acetone	50 JB	170	169 *	50-150	178	180 *	6.5	25
75-35-4	1,1-Dichloroethene	u	68.5	96.1	59-172	69.4	97.4	1.3	25
75-09-2	Methylene Chloride	1.4 J	73.2	101	60-140	74.4	102	1.7	25
75-15-0	Carbon Disulfide	u	56.2	78.8	60-140	47.3	66.4	17.2	25
156-60-5	trans-1,2-Dichloroethene	u	67.0	94.0	60-140	64.1	89.9	4.4	25
108-05-4	Vinyl Acetate	u	u	NC *	50-150	u	NC *	NC *	25
75-34-3	1,1-Dichloroethane	u	78.8	111	60-140	79.8	112	1.3	25
78-93-3	2-Butanone	u	136	191 *	50-140	156	219 *	13.7	25
594-20-7	2,2-Dichloropropane	u	79.3	111	60-140	78.2	110	1.4	25
156-59-2	cis-1,2-Dichloroethene	u	74.0	104	60-140	74.4	104	0.6	25
67-66-3	Chloroform	u	82.0	115	60-140	84.0	118	2.4	25
74-97-5	Bromochloromethane	u	81.5	114	60-140	84.4	118	3.5	25
71-55-6	1,1,1-Trichloroethane	u	78.8	111	60-140	75.3	106	4.5	25
563-58-6	1,1-Dichloropropene	u	73.9	104	60-140	69.6	97.7	6.0	25
56-23-5	Carbon Tetrachloride	u	67.2	94.3	60-140	52.5	73.7	24.5	25
107-06-2	1,2-Dichloroethane	u	80.0	112	60-140	81.8	115	2.3	25
71-43-2	Benzene	u	69.7	97.8	66-142	69.7	97.8	0.	25
79-01-6	Trichloroethene	u	73.3	103	62-137	69.4	97.4	5.4	25
78-87-5	1,2-Dichloropropane	u	71.7	101	60-140	72.9	102	1.7	25
75-27-4	Bromodichloromethane	u	74.3	104	60-140	68.3	95.8	8.4	25
74-95-3	Dibromomethane	u	74.2	104	60-140	78.7	110	5.9	25
108-10-1	4-Methyl-2-pentanone	u	107	150 *	50-150	125	175 *	15.6	25
10061-01-5	cis-1,3-Dichloropropene	u	66.1	92.7	60-120	60.4	84.8	9.0	25
108-88-3	Toluene	u	72.4	102	59-139	72.5	102	0.2	25
10061-02-6	trans-1,3-Dichloropropene	u	68.9	96.6	50-150	63.5	89.1	8.1	25
591-78-6	2-Hexanone	u	117	164 *	60-140	148	208 *	23.4	25
79-00-5	1,1,2-Trichloroethane	u	72.9	102	60-140	74.4	104	2.1	25
142-28-9	1,3-Dichloropropane	u	74.0	104	60-140	75.1	105	1.5	25
127-18-4	Tetrachloroethene	u	65.0	91.2	60-140	61.7	86.6	5.2	25
124-48-1	Dibromochloromethane	u	74.4	104	60-140	67.0	94.0	10.4	25
106-93-4	1,2-Dibromoethane	u	73.8	104	60-140	74.5	105	1.0	25
108-90-7	Chlorobenzene	u	68.0	95.4	60-133	65.4	91.8	3.9	25
100-41-4	Ethylbenzene	u	72.7	102	60-140	72.9	102	0.3	25
630-20-6	1,1,1,2-Tetrachloroethane	u	74.8	105	60-140	77.6	109	3.7	25
1330-20-7B	meta-/para-Xylenes	u	132	92.6	60-140	127	89.1	3.8	25
95-47-6	ortho-Xylene	u	66.6	93.4	60-140	62.3	87.4	6.6	25
100-42-5	Styrene	u	62.1	87.1	60-140	56.3	79.0	9.8	25
98-92-8	Isopropylbenzene	u	64.3	90.2	60-140	60.6	85.0	5.9	25
75-25-2	Bromoform	u	73.7	103	60-140	60.1	84.3	20.3	25
79-34-5	1,1,2,2-Tetrachloroethane	u	94.1	132	60-140	101	142 *	7.1	25
96-18-4	1,2,3-Trichloropropane	u	110	154 *	60-140	122	171 *	10.4	25
103-65-1	n-Propylbenzene	u	68.2	95.7	60-140	66.4	93.2	2.6	25
108-86-1	Bromobenzene	u	65.1	91.3	60-140	65.2	91.5	0.2	25

*: Indicates the value is outside control limits.
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
%Rec: Percent of the spike recovered from the matrix
J: Estimated Concentration below laboratory reporting limit.
NC: Parameter is Not Calculable

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DEPARTMENT OF THE ARMY
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VOA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Sample ID: M000975-001
MS Sample ID: WG6553-4
Method: EPA 8260
Analyst: Robert Williams

Date Analyzed: 09/25/00
Date Reported: 09/26/00

Matrix: Soil
Units: ug/kg
% Solids: 68.1

CAS Number	Compound	Sample Result	MS Conc	MS %Rec	QC Limits	MSD Conc	MSD %Rec	RPD (%)	QC Limits
108-67-8	1,3,5-Trimethylbenzene	u	65.6	92.0	60-140	63.6	89.2	3.1	25
95-49-8	2-Chlorotoluene	u	71.3	100	60-140	70.1	98.4	1.7	25
106-43-4	4-Chlorotoluene	u	72.3	101	60-140	66.6	93.5	8.2	25
98-06-6	tert-Butylbenzene	u	67.0	94.0	60-140	67.1	94.2	0.2	25
95-63-6	1,2,4-Trimethylbenzene	u	64.1	89.9	60-140	63.5	89.1	0.9	25
135-98-8	sec-Butylbenzene	u	57.1	80.1	60-140	55.9	78.4	2.1	25
99-87-6	p-Isopropyltoluene	u	60.7	85.1	60-140	58.4	82.0	3.8	25
541-73-1	1,3-Dichlorobenzene	u	62.4	87.5	60-140	57.5	80.7	8.1	25
106-46-7	1,4-Dichlorobenzene	u	63.7	89.4	60-140	60.5	84.9	5.1	25
104-51-8	n-Butylbenzene	u	55.3	77.6	60-140	54.0	75.8	2.3	25
95-50-1	1,2-Dichlorobenzene	u	61.8	86.7	60-140	58.3	81.8	5.8	25
96-12-8	1,2-Dibromo-3-chloropropane	u	107	150 *	60-140	128	180 *	17.9	25
120-82-1	1,2,4-Trichlorobenzene	u	46.0	64.5	60-140	46.0	64.6	0.	25
87-68-3	Hexachlorobutadiene	u	32.8	46.0 *	60-140	38.9	54.6 *	17.1	25
91-20-3	Naphthalene	u	70.9	99.5	60-140	96.6	136	30.7 *	25
87-61-6	1,2,3-Trichlorobenzene	u	46.3	64.9	60-140	50.8	71.3	9.3	25

%Rec: Percent of the spike recovered from the matrix
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
*: Indicates the value is outside control limits.

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard Name	Added (ug/kg)	MS (ug/kg)	MS Rec (%)	MSD (ug/kg)	MSD Rec (%)	CQAB Lab %Rec Limits	Method 8260 Acceptance Range	RPD (%)	CQAB Lab RPD Limits
Dibromofluoromethane	50.0	56.4	113.	54.7	109.	80-120	80-120	3.	25
1,2-Dichloroethane-d4	50.0	51.1	102.	48.0	96.0	70-121	70-121	6.2	25
Toluene-d8	50.0	47.5	95.0	47.5	95.0	81-117	81-117	0.	25
4-Bromofluorobenzene	50.0	49.6	99.3	50.0	100.	74-121	74-121	0.70	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/25/00 Matrix: Soil
LCS ID: WG6553-2 Date Reported: 09/26/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
75-71-8	Dichlorodifluoromethane	74.9	50.0	150	50-150
74-87-3	Chloromethane	58.9	50.0	118	50-150
75-01-4	Vinyl Chloride	58.3	50.0	117	50-150
74-83-9	Bromomethane	42.6	50.0	85.1	50-150
75-00-3	Chloroethane	50.6	50.0	101	50-150
75-69-4	Trichlorofluoromethane	52.9	50.0	106	50-150
67-64-1	Acetone	77.9 B	50.0	156 *	50-150
75-35-4	1,1-Dichloroethene	47.6	50.0	95.1	59-172
75-09-2	Methylene Chloride	46.8	50.0	93.5	60-140
75-15-0	Carbon Disulfide	46.5	50.0	93.0	60-140
156-60-5	trans-1,2-Dichloroethene	46.0	50.0	92.1	60-140
108-05-4	Vinyl Acetate	32.4 J	50.0	64.9	50-150
75-34-3	1,1-Dichloroethane	51.3	50.0	103	60-140
78-93-3	2-Butanone	76.8	50.0	154 *	50-140
594-20-7	2,2-Dichloropropane	53.7	50.0	107	60-140
156-59-2	cis-1,2-Dichloroethene	51.4	50.0	103	60-140
67-66-3	Chloroform	54.6	50.0	109	60-140
74-97-5	Bromochloromethane	51.9	50.0	104	60-140
71-55-6	1,1,1-Trichloroethane	55.5	50.0	111	60-140
563-58-6	1,1-Dichloropropene	54.0	50.0	108	60-140
56-23-5	Carbon Tetrachloride	52.6	50.0	105	60-140
107-06-2	1,2-Dichloroethane	53.1	50.0	106	60-140
71-43-2	Benzene	47.3	50.0	94.6	66-142
79-01-6	Trichloroethene	53.7	50.0	107	62-137
78-87-5	1,2-Dichloropropane	50.7	50.0	101	60-140
75-27-4	Bromodichloromethane	55.0	50.0	110	60-140
74-95-3	Dibromomethane	50.6	50.0	101	60-140
108-10-1	4-Methyl-2-pentanone	67.0	50.0	134	50-150
10061-01-5	cis-1,3-Dichloropropene	52.4	50.0	105	60-120
108-88-3	Toluene	50.6	50.0	101	59-139
10061-02-6	trans-1,3-Dichloropropene	51.4	50.0	103	50-150
591-78-6	2-Hexanone	76.2	50.0	152 *	60-140
79-00-5	1,1,2-Trichloroethane	46.6	50.0	93.1	60-140
142-28-9	1,3-Dichloropropane	48.0	50.0	96.1	60-140
127-18-4	Tetrachloroethene	48.1	50.0	96.1	60-140
124-48-1	Dibromochloromethane	53.5	50.0	107	60-140
106-93-4	1,2-Dibromoethane	50.1	50.0	100	60-140
108-90-7	Chlorobenzene	46.8	50.0	93.6	60-133
100-41-4	Ethylbenzene	56.7	50.0	113	60-140
630-20-6	1,1,1,2-Tetrachloroethane	49.4	50.0	98.7	60-140
1330-20-7B	meta-/para-Xylenes	93.6	100	93.6	60-140
95-47-6	ortho-Xylene	49.0	50.0	97.9	60-140
100-42-5	Styrene	47.7	50.0	95.4	60-140
98-92-8	Isopropylbenzene	49.9	50.0	99.8	60-140
75-25-2	Bromoform	53.1	50.0	106	60-140
79-34-5	1,1,2,2-Tetrachloroethane	52.4	50.0	105	60-140
96-18-4	1,2,3-Trichloropropane	55.6	50.0	111	60-140
103-65-1	n-Propylbenzene	45.8	50.0	91.7	60-140

*: Indicates the value is outside control limits.
B: Compound also present in the method blank.
J: Estimated Concentration below laboratory reporting limit.

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/25/00 Matrix: Soil
LCS ID: WG6553-2 Date Reported: 09/26/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
108-86-1	Bromobenzene	42.5	50.0	85.1	60-140
108-67-8	1,3,5-Trimethylbenzene	42.9	50.0	85.9	60-140
95-49-8	2-Chlorotoluene	51.7	50.0	103	60-140
106-43-4	4-Chlorotoluene	40.8	50.0	81.7	60-140
98-06-6	tert-Butylbenzene	45.6	50.0	91.2	60-140
95-63-6	1,2,4-Trimethylbenzene	42.0	50.0	84.0	60-140
135-98-8	sec-Butylbenzene	43.8	50.0	87.5	60-140
99-87-6	p-Isopropyltoluene	44.8	50.0	89.6	60-140
541-73-1	1,3-Dichlorobenzene	44.0	50.0	88.0	60-140
106-46-7	1,4-Dichlorobenzene	41.5	50.0	83.0	60-140
104-51-8	n-Butylbenzene	45.3	50.0	90.5	60-140
95-50-1	1,2-Dichlorobenzene	43.7	50.0	87.5	60-140
96-12-8	1,2-Dibromo-3-chloropropane	83.3	50.0	167 *	60-140
120-82-1	1,2,4-Trichlorobenzene	46.1	50.0	92.2	60-140
87-68-3	Hexachlorobutadiene	36.4	50.0	72.7	60-140
91-20-3	Naphthalene	75.3	50.0	151 *	60-140
87-61-6	1,2,3-Trichlorobenzene	52.1	50.0	104	60-140

*: Indicates the value is outside control limits.

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	104.	80-120	80-120	50.0
1,2-Dichloroethane-d4	96.2	70-121	70-121	50.0
Toluene-d8	93.7	81-117	81-117	50.0
4-Bromofluorobenzene	84.9	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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DEPARTMENT OF THE ARMY
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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: 09182000-TB3
Sample ID: M000975-002
Batch ID: WG6542
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Analyzed: 09/21/00
Date Reported: 09/25/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	u	2.0	0.5
75-15-0	Carbon Disulfide	u	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25	10
594-20-7	2,2-Dichloropropane	u	10	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

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DEPARTMENT OF THE ARMY
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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: 09182000-TB3
Sample ID: M000975-002
Batch ID: WG6542
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Analyzed: 09/21/00
Date Reported: 09/25/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
95-49-8	2-Chlorotoluene	u	5.0	1
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5.0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10	2
120-82-1	1,2,4-Trichlorobenzene	u	25	10
87-68-3	Hexachlorobutadiene	u	25	10
91-20-3	Naphthalene	u	25	10
87-61-6	1,2,3-Trichlorobenzene	u	25	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	92.7	80-120	80-120	50.0
1,2-Dichloroethane-d4	103.	76-114	76-114	50.0
Toluene-d8	98.6	88-110	88-110	50.0
4-Bromofluorobenzene	103.	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6542-1	Laboratory Control Sample:	WG6542-2
Laboratory Matrix Duplicate:	WG6542-3	Dilution:	NA
Matrix Spike:	WG6542-4	Dilution:	NA
Matrix Spike Duplicate:	WG6542-5		

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB2017
Sample ID: M000975-003
Batch ID: WG6542
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Analyzed: 09/21/00
Date Reported: 09/25/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	u	2.0	0.5
75-15-0	Carbon Disulfide	u	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25	10
594-20-7	2,2-Dichloropropane	u	10	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

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DEPARTMENT OF THE ARMY
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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB2017
Sample ID: M000975-003
Batch ID: WG6542
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Analyzed: 09/21/00
Date Reported: 09/25/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
95-49-8	2-Chlorotoluene	u	5.0	1
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5.0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10	2
120-82-1	1,2,4-Trichlorobenzene	u	25	10
87-68-3	Hexachlorobutadiene	u	25	10
91-20-3	Naphthalene	u	25	10
87-61-6	1,2,3-Trichlorobenzene	u	25	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	88.7	80-120	80-120	50.0
1,2-Dichloroethane-d4	105.	76-114	76-114	50.0
Toluene-d8	94.4	88-110	88-110	50.0
4-Bromofluorobenzene	96.3	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6542-1	Laboratory Control Sample:	WG6542-2
Laboratory Matrix Duplicate:	WG6542-3	Dilution:	NA
Matrix Spike:	WG6542-4	Dilution:	NA
Matrix Spike Duplicate:	WG6542-5		

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: 09202000-TB3
Sample ID: M000975-005
Batch ID: WG6542
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Analyzed: 09/21/00
Date Reported: 09/25/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	u	2.0	0.5
75-15-0	Carbon Disulfide	u	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25	10
594-20-7	2,2-Dichloropropane	u	10	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: 09202000-TB3
Sample ID: M000975-005
Batch ID: WG6542
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Analyzed: 09/21/00
Date Reported: 09/25/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
95-49-8	2-Chlorotoluene	u	5.0	1
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5.0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10	2
120-82-1	1,2,4-Trichlorobenzene	u	25	10
87-68-3	Hexachlorobutadiene	u	25	10
91-20-3	Naphthalene	u	25	10
87-61-6	1,2,3-Trichlorobenzene	u	25	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	92.9	80-120	80-120	50.0
1,2-Dichloroethane-d4	101.	76-114	76-114	50.0
Toluene-d8	95.3	88-110	88-110	50.0
4-Bromofluorobenzene	97.2	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank: WG6542-1
Laboratory Matrix Duplicate: WG6542-3
Matrix Spike: WG6542-4
Matrix Spike Duplicate: WG6542-5

Laboratory Control Sample: WG6542-2
Dilution: NA
Dilution: NA

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB2019
Sample ID: M000975-006
Batch ID: WG6542
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Analyzed: 09/21/00
Date Reported: 09/25/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	u	2.0	0.5
75-15-0	Carbon Disulfide	2.0 J	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25	10
594-20-7	2,2-Dichloropropane	u	10	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
J: Estimated Concentration below laboratory reporting limit.

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DEPARTMENT OF THE ARMY
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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB2019
Sample ID: M000975-006
Batch ID: WG6542
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Analyzed: 09/21/00
Date Reported: 09/25/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1
95-49-8	2-Chlorotoluene	u	5.0	1
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5.0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10	2
120-82-1	1,2,4-Trichlorobenzene	u	25	10
87-68-3	Hexachlorobutadiene	u	25	10
91-20-3	Naphthalene	u	25	10
87-61-6	1,2,3-Trichlorobenzene	u	25	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	93.2	80-120	80-120	50.0
1,2-Dichloroethane-d4	106.	76-114	76-114	50.0
Toluene-d8	97.3	88-110	88-110	50.0
4-Bromofluorobenzene	103.	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6542-1	Laboratory Control Sample:	WG6542-2
Laboratory Matrix Duplicate:	WG6542-3	Dilution:	NA
Matrix Spike:	WG6542-4	Dilution:	NA
Matrix Spike Duplicate:	WG6542-5		

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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/21/00 Matrix: Water
Method Blank ID: WG6542-1 Date Reported: 09/25/00 Units: ug/L
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25.	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	u	2.0	0.5
75-15-0	Carbon Disulfide	u	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50.	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25.	10
594-20-7	2,2-Dichloropropane	u	10.	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25.	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25.	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1
95-49-8	2-Chlorotoluene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

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DEPARTMENT OF THE ARMY
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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/21/00 Matrix: Water
Method Blank ID: WG6542-1 Date Reported: 09/25/00 Units: ug/L
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5.0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10.	2
120-82-1	1,2,4-Trichlorobenzene	u	25.	10
87-68-3	Hexachlorobutadiene	u	25.	10
91-20-3	Naphthalene	u	25.	10
87-61-6	1,2,3-Trichlorobenzene	u	25.	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	93.3	80-120	80-120	50.0
1,2-Dichloroethane-d4	106.	76-114	76-114	50.0
Toluene-d8	98.0	88-110	88-110	50.0
4-Bromofluorobenzene	98.3	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Sampled: 09/18/00 Matrix: Water
Client Sample ID: AB2017 Date Received: 09/20/00 Units: ug/L
Sample ID: M000975-003 Date Analyzed: 09/21/00
Lab Duplicate ID: WG6542-3 Date Reported: 09/25/00 Analyst: Robert Williams
Method: EPA 8260

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
75-71-8	Dichlorodifluoromethane	u	u	NC	25	5
74-87-3	Chloromethane	u	u	NC	25	2
75-01-4	Vinyl Chloride	u	u	NC	25	2
74-83-9	Bromomethane	u	u	NC	25	2
75-00-3	Chloroethane	u	u	NC	25	2
75-69-4	Trichlorofluoromethane	u	u	NC	25	5
67-64-1	Acetone	u	u	NC	25	25
75-35-4	1,1-Dichloroethene	u	u	NC	25	2
75-09-2	Methylene Chloride	u	u	NC	25	2
75-15-0	Carbon Disulfide	u	u	NC	25	2
156-60-5	trans-1,2-Dichloroethene	u	u	NC	25	2
108-05-4	Vinyl Acetate	u	u	NC	25	50
75-34-3	1,1-Dichloroethane	u	u	NC	25	2
78-93-3	2-Butanone	u	u	NC	25	25
594-20-7	2,2-Dichloropropane	u	u	NC	25	10
156-59-2	cis-1,2-Dichloroethene	u	u	NC	25	2
67-66-3	Chloroform	u	u	NC	25	2
74-97-5	Bromochloromethane	u	u	NC	25	5
71-55-6	1,1,1-Trichloroethane	u	u	NC	25	2
563-58-6	1,1-Dichloropropene	u	u	NC	25	5
56-23-5	Carbon Tetrachloride	u	u	NC	25	2
107-06-2	1,2-Dichloroethane	u	u	NC	25	2
71-43-2	Benzene	u	u	NC	25	2
79-01-6	Trichloroethene	u	u	NC	25	2
78-87-5	1,2-Dichloropropane	u	u	NC	25	2
75-27-4	Bromodichloromethane	u	u	NC	25	2
74-95-3	Dibromomethane	u	u	NC	25	5
108-10-1	4-Methyl-2-pentanone	u	u	NC	25	25
10061-01-5	cis-1,3-Dichloropropene	u	u	NC	25	2
108-88-3	Toluene	u	u	NC	25	2
10061-02-6	trans-1,3-Dichloropropene	u	u	NC	25	2
591-78-6	2-Hexanone	u	u	NC	25	25
79-00-5	1,1,2-Trichloroethane	u	u	NC	25	2
142-28-9	1,3-Dichloropropane	u	u	NC	25	5
127-18-4	Tetrachloroethene	u	u	NC	25	2
124-48-1	Dibromochloromethane	u	u	NC	25	2
106-93-4	1,2-Dibromoethane	u	u	NC	25	5
108-90-7	Chlorobenzene	u	u	NC	25	2
100-41-4	Ethylbenzene	u	u	NC	25	2
630-20-6	1,1,1,2-Tetrachloroethane	u	u	NC	25	5
1330-20-7B	meta-/para-Xylenes	u	u	NC	25	2
95-47-6	ortho-Xylene	u	u	NC	25	2
100-42-5	Styrene	u	u	NC	25	2
98-92-8	Isopropylbenzene	u	u	NC	25	5
75-25-2	Bromoform	u	u	NC	25	2
79-34-5	1,1,2,2-Tetrachloroethane	u	u	NC	25	2
96-18-4	1,2,3-Trichloropropane	u	u	NC	25	5
103-65-1	n-Propylbenzene	u	u	NC	25	5
108-86-1	Bromobenzene	u	u	NC	25	5
108-67-8	1,3,5-Trimethylbenzene	u	u	NC	25	5
95-49-8	2-Chlorotoluene	u	u	NC	25	5

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)

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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB2017
Sample ID: M000975-003
Lab Duplicate ID: WG6542-3
Method: EPA 8260

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Analyzed: 09/21/00
Date Reported: 09/25/00

Matrix: Water
Units: ug/L
Analyst: Robert Williams

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
106-43-4	4-Chlorotoluene	u	u	NC	25	5
98-06-6	tert-Butylbenzene	u	u	NC	25	5
95-63-6	1,2,4-Trimethylbenzene	u	u	NC	25	5
135-98-8	sec-Butylbenzene	u	u	NC	25	5
99-87-6	p-Isopropyltoluene	u	u	NC	25	5
541-73-1	1,3-Dichlorobenzene	u	u	NC	25	5
106-46-7	1,4-Dichlorobenzene	u	u	NC	25	5
104-51-8	n-Butylbenzene	u	u	NC	25	5
95-50-1	1,2-Dichlorobenzene	u	u	NC	25	5
96-12-8	1,2-Dibromo-3-chloropropane	u	u	NC	25	10
120-82-1	1,2,4-Trichlorobenzene	u	u	NC	25	25
87-68-3	Hexachlorobutadiene	u	u	NC	25	25
91-20-3	Naphthalene	u	u	NC	25	25
87-61-6	1,2,3-Trichlorobenzene	u	u	NC	25	25

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard Name	Added (ug/L)	Sample (ug/L)	Sample Rec (%)	Dup (ug/L)	Dup Rec (%)	CQAB Lab Performanc Range	Method 8260 Acceptance Range	RPD (%)	CQAB Lab Performance Range
Dibromofluoromethane	50.0	44.3	88.7	46.7	93.5	80-120	80-120	5.3	25
1,2-Dichloroethane-d4	50.0	52.3	105.	51.0	102.	76-114	76-114	2.6	25
Toluene-d8	50.0	47.2	94.4	48.7	97.4	88-110	88-110	3.2	25
4-Bromofluorobenzene	50.0	48.2	96.3	49.5	99.0	86-115	86-115	2.7	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/21/00 Matrix: Water
Sample ID: M000975-003 Date Reported: 09/25/00 Units: ug/L
MS Sample ID: WG6542-4
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Sample Result	MS Conc	MS %Rec	QC Limits	MSD Conc	MSD %Rec	RPD (%)	QC Limits
75-71-8	Dichlorodifluoromethane	u	50.9	102	60-140	54.5	109	6.8	25
74-87-3	Chloromethane	u	46.1	92.2	60-140	52.6	105	13.2	25
75-01-4	Vinyl Chloride	u	44.8	89.6	60-140	47.9	95.8	6.7	25
74-83-9	Bromomethane	u	45.2	90.4	60-140	48.2	96.4	6.4	25
75-00-3	Chloroethane	u	50.3	101	60-140	52.0	104	3.3	25
75-69-4	Trichlorofluoromethane	u	47.5	95.0	60-140	51.5	103	8.1	25
67-64-1	Acetone	u	50.0	100	50-160	46.6	93.2	7.0	25
75-35-4	1,1-Dichloroethene	u	48.6	97.2	61-145	49.8	99.6	2.4	25
75-09-2	Methylene Chloride	u	52.3	105	70-130	50.2	100	4.1	25
75-15-0	Carbon Disulfide	u	46.3	92.6	70-130	45.1	90.2	2.6	25
156-60-5	trans-1,2-Dichloroethene	u	47.2	94.4	70-130	47.9	95.8	1.5	25
108-05-4	Vinyl Acetate	u	58.8	118	50-150	49.4	98.8	17.4	25
75-34-3	1,1-Dichloroethane	u	53.4	107	70-130	53.3	107	0.2	25
78-93-3	2-Butanone	u	63.1	126	50-150	61.0	122	3.4	25
594-20-7	2,2-Dichloropropane	u	53.7	107	70-130	54.2	108	0.9	25
156-59-2	cis-1,2-Dichloroethene	u	49.5	99.0	70-130	49.8	99.6	0.6	25
67-66-3	Chloroform	u	49.2	98.4	70-130	49.1	98.2	0.2	25
74-97-5	Bromochloromethane	u	49.0	98.0	70-130	48.7	97.4	0.6	25
71-55-6	1,1,1-Trichloroethane	u	53.1	106	70-130	53.2	106	0.2	25
563-58-6	1,1-Dichloropropene	u	51.0	102	70-130	51.3	103	0.6	25
56-23-5	Carbon Tetrachloride	u	53.6	107	70-130	53.7	107	0.2	25
107-06-2	1,2-Dichloroethane	u	51.8	104	70-130	50.9	102	1.8	25
71-43-2	Benzene	u	46.6	93.2	76-127	47.5	95.0	1.9	25
79-01-6	Trichloroethene	u	52.7	105	71-120	53.7	107	1.9	25
78-87-5	1,2-Dichloropropane	u	46.6	93.2	70-130	44.1	88.2	5.5	25
75-27-4	Bromodichloromethane	u	50.4	101	70-130	51.8	104	2.7	25
74-95-3	Dibromomethane	u	52.6	105	70-130	53.2	106	1.1	25
108-10-1	4-Methyl-2-pentanone	u	62.3	125	50-150	62.0	124	0.5	25
10061-01-5	cis-1,3-Dichloropropene	u	51.0	102	70-130	51.5	103	1.0	25
108-88-3	Toluene	u	56.2	112	76-125	59.0	118	4.9	25
10061-02-6	trans-1,3-Dichloropropene	u	52.3	105	60-140	52.0	104	0.6	25
591-78-6	2-Hexanone	u	62.5	125	60-140	61.3	123	1.9	25
79-00-5	1,1,2-Trichloroethane	u	48.9	97.8	70-130	51.4	103	5.0	25
142-28-9	1,3-Dichloropropane	u	51.2	102	70-130	52.1	104	1.7	25
127-18-4	Tetrachloroethene	u	50.7	101	70-130	50.2	100	1.0	25
124-48-1	Dibromochloromethane	u	49.2	98.4	70-130	50.1	100	1.8	25
106-93-4	1,2-Dibromoethane	u	50.9	102	70-130	53.2	106	4.4	25
108-90-7	Chlorobenzene	u	44.9	89.8	75-130	45.7	91.4	1.8	25
100-41-4	Ethylbenzene	u	47.4	94.8	70-130	44.5	89.0	6.3	25
630-20-6	1,1,1,2-Tetrachloroethane	u	47.3	94.6	70-130	47.1	94.2	0.4	25
1330-20-7B	meta-/para-Xylenes	u	87.2	87.2	70-130	89.7	89.7	2.8	25
95-47-6	ortho-Xylene	u	46.6	93.2	70-130	47.1	94.2	1.1	25
100-42-5	Styrene	u	47.6	95.2	70-130	46.2	92.4	3.0	25
98-92-8	Isopropylbenzene	u	48.5	97.0	70-130	48.1	96.2	0.8	25
75-25-2	Bromoform	u	53.2	106	70-130	53.9	108	1.3	25
79-34-5	1,1,2,2-Tetrachloroethane	u	53.1	106	70-130	53.2	106	0.2	25
96-18-4	1,2,3-Trichloropropane	u	52.2	104	70-130	53.5	107	2.5	25
103-65-1	n-Propylbenzene	u	49.5	99.0	70-130	49.6	99.2	0.2	25
108-86-1	Bromobenzene	u	47.4	94.8	70-130	48.1	96.2	1.5	25
108-67-8	1,3,5-Trimethylbenzene	u	45.7	91.4	70-130	46.1	92.2	0.9	25
95-49-8	2-Chlorotoluene	u	54.2	108	70-130	57.6	115	6.1	25
106-43-4	4-Chlorotoluene	u	43.0	86.0	70-130	46.8	93.6	8.5	25

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
%Rec: Percent of the spike recovered from the matrix

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VOA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/21/00 Matrix: Water
Sample ID: M000975-003 Date Reported: 09/25/00 Units: ug/L
MS Sample ID: WG6542-4
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Sample Result	MS Conc	MS %Rec	QC Limits	MSD Conc	MSD %Rec	RPD (%)	QC Limits
98-06-6	tert-Butylbenzene	u	48.0	96.0	70-130	48.4	96.8	0.8	25
95-63-6	1,2,4-Trimethylbenzene	u	43.9	87.8	70-130	44.0	88.0	0.2	25
135-98-8	sec-Butylbenzene	u	46.5	93.0	70-130	45.2	90.4	2.8	25
99-87-6	p-Isopropyltoluene	u	49.8	99.6	70-130	46.4	92.8	7.1	25
541-73-1	1,3-Dichlorobenzene	u	50.3	101	70-130	50.3	101	0.	25
106-46-7	1,4-Dichlorobenzene	u	47.2	94.4	70-130	47.1	94.2	0.2	25
104-51-8	n-Butylbenzene	u	49.9	99.8	70-130	47.4	94.8	5.1	25
95-50-1	1,2-Dichlorobenzene	u	49.6	99.2	70-130	50.2	100	1.2	25
96-12-8	1,2-Dibromo-3-chloropropane	u	52.7	105	70-130	54.6	109	3.5	25
120-82-1	1,2,4-Trichlorobenzene	u	49.9	99.8	70-130	47.8	95.6	4.3	25
87-68-3	Hexachlorobutadiene	u	51.6	103	70-130	46.7	93.4	10.	25
91-20-3	Naphthalene	u	60.3	121	70-130	63.8	128	5.6	25
87-61-6	1,2,3-Trichlorobenzene	u	52.1	104	70-130	50.9	102	2.3	25

%Rec: Percent of the spike recovered from the matrix
u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard Name	Added (ug/L)	MS (ug/L)	MS Rec (%)	MSD (ug/L)	MSD Rec (%)	CQAB Lab %Rec Limits	Method 8260 Acceptance Range	RPD (%)	CQAB Lab RPD Limits
Dibromofluoromethane	50.0	46.2	92.5	46.6	93.2	80-120	80-120	0.80	25
1,2-Dichloroethane-d4	50.0	50.5	101.	50.7	101.	76-114	76-114	0.50	25
Toluene-d8	50.0	46.7	93.4	48.0	96.0	88-110	88-110	2.8	25
4-Bromofluorobenzene	50.0	46.7	93.4	45.2	90.4	86-115	86-115	3.2	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/21/00 Matrix: Water
LCS ID: WG6542-2 Date Reported: 09/25/00 Units: ug/L
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
75-71-8	Dichlorodifluoromethane	52.9	50.0	106	60-140
74-87-3	Chloromethane	50.3	50.0	101	60-140
75-01-4	Vinyl Chloride	46.8	50.0	93.6	60-140
74-83-9	Bromomethane	48.3	50.0	96.6	60-140
75-00-3	Chloroethane	51.0	50.0	102	60-140
75-69-4	Trichlorofluoromethane	51.7	50.0	103	60-140
67-64-1	Acetone	52.3	50.0	105	50-160
75-35-4	1,1-Dichloroethene	46.0	50.0	91.9	61-145
75-09-2	Methylene Chloride	51.0	50.0	102	70-130
75-15-0	Carbon Disulfide	43.9	50.0	87.8	70-130
156-60-5	trans-1,2-Dichloroethene	45.9	50.0	91.7	70-130
108-05-4	Vinyl Acetate	18.5 J	50.0	37.1 *	50-150
75-34-3	1,1-Dichloroethane	54.2	50.0	108	70-130
78-93-3	2-Butanone	54.7	50.0	109	50-150
594-20-7	2,2-Dichloropropane	50.6	50.0	101	70-130
156-59-2	cis-1,2-Dichloroethene	48.9	50.0	97.9	70-130
67-66-3	Chloroform	49.1	50.0	98.2	70-130
74-97-5	Bromochloromethane	48.0	50.0	95.9	70-130
71-55-6	1,1,1-Trichloroethane	51.5	50.0	103	70-130
563-58-6	1,1-Dichloropropene	49.0	50.0	98.0	70-130
56-23-5	Carbon Tetrachloride	52.0	50.0	104	70-130
107-06-2	1,2-Dichloroethane	52.0	50.0	104	70-130
71-43-2	Benzene	47.4	50.0	94.8	76-127
79-01-6	Trichloroethene	51.7	50.0	103	71-120
78-87-5	1,2-Dichloropropane	45.2	50.0	90.4	70-130
75-27-4	Bromodichloromethane	50.7	50.0	101	70-130
74-95-3	Dibromomethane	52.0	50.0	104	70-130
108-10-1	4-Methyl-2-pentanone	50.7	50.0	101	50-150
10061-01-5	cis-1,3-Dichloropropene	49.6	50.0	99.1	70-130
108-88-3	Toluene	56.1	50.0	112	76-125
10061-02-6	trans-1,3-Dichloropropene	49.8	50.0	99.6	60-140
591-78-6	2-Hexanone	48.6	50.0	97.2	60-140
79-00-5	1,1,2-Trichloroethane	48.6	50.0	97.1	70-130
142-28-9	1,3-Dichloropropane	49.8	50.0	99.6	70-130
127-18-4	Tetrachloroethene	47.7	50.0	95.4	70-130
124-48-1	Dibromochloromethane	47.9	50.0	95.8	70-130
106-93-4	1,2-Dibromoethane	50.0	50.0	100	70-130
108-90-7	Chlorobenzene	43.7	50.0	87.4	75-130
100-41-4	Ethylbenzene	42.2	50.0	84.5	70-130
630-20-6	1,1,1,2-Tetrachloroethane	47.3	50.0	94.5	70-130
1330-20-7B	meta-/para-Xylenes	87.7	100	87.7	70-130
95-47-6	ortho-Xylene	46.1	50.0	92.3	70-130
100-42-5	Styrene	39.6	50.0	79.2	70-130
98-92-8	Isopropylbenzene	47.7	50.0	95.4	70-130
75-25-2	Bromoform	51.7	50.0	103	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50.9	50.0	102	70-130
96-18-4	1,2,3-Trichloropropane	49.8	50.0	99.6	70-130
103-65-1	n-Propylbenzene	45.3	50.0	90.5	70-130
108-86-1	Bromobenzene	44.6	50.0	89.2	70-130

*: Indicates the value is outside control limits.
J: Estimated Concentration below laboratory reporting limit.

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/21/00 Matrix: Water
LCS ID: WG6542-2 Date Reported: 09/25/00 Units: ug/L
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
108-67-8	1,3,5-Trimethylbenzene	43.6	50.0	87.1	70-130
95-49-8	2-Chlorotoluene	53.8	50.0	108	70-130
106-43-4	4-Chlorotoluene	41.9	50.0	83.7	70-130
98-06-6	tert-Butylbenzene	46.2	50.0	92.3	70-130
95-63-6	1,2,4-Trimethylbenzene	42.2	50.0	84.4	70-130
135-98-8	sec-Butylbenzene	43.9	50.0	87.8	70-130
99-87-6	p-Isopropyltoluene	45.3	50.0	90.6	70-130
541-73-1	1,3-Dichlorobenzene	47.0	50.0	94.1	70-130
106-46-7	1,4-Dichlorobenzene	45.4	50.0	90.8	70-130
104-51-8	n-Butylbenzene	46.2	50.0	92.4	70-130
95-50-1	1,2-Dichlorobenzene	47.1	50.0	94.1	70-130
96-12-8	1,2-Dibromo-3-chloropropane	49.3	50.0	98.6	70-130
120-82-1	1,2,4-Trichlorobenzene	44.8	50.0	89.6	70-130
87-68-3	Hexachlorobutadiene	50.8	50.0	102	70-130
91-20-3	Naphthalene	51.9	50.0	104	70-130
87-61-6	1,2,3-Trichlorobenzene	47.2	50.0	94.3	70-130

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	96.6	80-120	80-120	50.0
1,2-Dichloroethane-d4	99.8	76-114	76-114	50.0
Toluene-d8	96.6	88-110	88-110	50.0
4-Bromofluorobenzene	94.4	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB1019
Sample ID: M000975-004
Batch ID: WG6548
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Analyzed: 09/22/00
Date Reported: 09/25/00

Matrix: Soil
Units: ug/kg
% Solids: 79.3
Dilution: 1

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	12	1
74-87-3	Chloromethane	u	6.0	1
75-01-4	Vinyl Chloride	u	6.0	1
74-83-9	Bromomethane	u	6.0	1
75-00-3	Chloroethane	u	12	1
75-69-4	Trichlorofluoromethane	u	6.0	1
67-64-1	Acetone	28 J	60	20
75-35-4	1,1-Dichloroethene	u	6.0	1
75-09-2	Methylene Chloride	u	6.0	1
75-15-0	Carbon Disulfide	u	6.0	1
156-60-5	trans-1,2-Dichloroethene	u	6.0	1
108-05-4	Vinyl Acetate	u	60	10
75-34-3	1,1-Dichloroethane	u	6.0	1
78-93-3	2-Butanone	u	60	20
594-20-7	2,2-Dichloropropane	u	6.0	1
156-59-2	cis-1,2-Dichloroethene	u	6.0	1
67-66-3	Chloroform	u	6.0	1
74-97-5	Bromochloromethane	u	6.0	1
71-55-6	1,1,1-Trichloroethane	u	6.0	1
563-58-6	1,1-Dichloropropene	u	6.0	1
56-23-5	Carbon Tetrachloride	u	6.0	1
107-06-2	1,2-Dichloroethane	u	6.0	1
71-43-2	Benzene	u	6.0	1
79-01-6	Trichloroethene	u	6.0	1
78-87-5	1,2-Dichloropropane	u	6.0	1
75-27-4	Bromodichloromethane	u	6.0	1
74-95-3	Dibromomethane	u	6.0	1
108-10-1	4-Methyl-2-pentanone	u	60	20
10061-01-5	cis-1,3-Dichloropropene	u	6.0	1
108-88-3	Toluene	8.2	6.0	1
10061-02-6	trans-1,3-Dichloropropene	u	6.0	1
591-78-6	2-Hexanone	u	60	20
79-00-5	1,1,2-Trichloroethane	u	6.0	1
142-28-9	1,3-Dichloropropane	u	6.0	1
127-18-4	Tetrachloroethene	u	6.0	1
124-48-1	Dibromochloromethane	u	6.0	1
106-93-4	1,2-Dibromoethane	u	6.0	1
108-90-7	Chlorobenzene	u	6.0	1
100-41-4	Ethylbenzene	u	6.0	1
630-20-6	1,1,1,2-Tetrachloroethane	u	6.0	1
1330-20-7B	meta-/para-Xylenes	u	6.0	1
95-47-6	ortho-Xylene	u	6.0	1
100-42-5	Styrene	u	6.0	1
98-92-8	Isopropylbenzene	u	6.0	1
75-25-2	Bromoform	u	6.0	1
79-34-5	1,1,2,2-Tetrachloroethane	u	6.0	1
96-18-4	1,2,3-Trichloropropane	u	6.0	1
103-65-1	n-Propylbenzene	u	6.0	1
108-86-1	Bromobenzene	u	6.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
J: Estimated Concentration below laboratory reporting limit.

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DEPARTMENT OF THE ARMY
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VOA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/19/00	Matrix:	Soil
Client Sample ID:	AB1019	Date Received:	09/21/00	Units:	ug/kg
Sample ID:	M000975-004	Date Analyzed:	09/22/00	% Solids:	79.3
Batch ID:	WG6548	Date Reported:	09/25/00	Dilution:	1
Method:	EPA 8260				
Analyst:	Robert Williams				

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
108-67-8	1,3,5-Trimethylbenzene	u	6.0	1
95-49-8	2-Chlorotoluene	u	6.0	1
106-43-4	4-Chlorotoluene	u	6.0	1
98-06-6	tert-Butylbenzene	u	6.0	1
95-63-6	1,2,4-Trimethylbenzene	u	6.0	1
135-98-8	sec-Butylbenzene	u	6.0	1
99-87-6	p-Isopropyltoluene	u	6.0	1
541-73-1	1,3-Dichlorobenzene	u	6.0	1
106-46-7	1,4-Dichlorobenzene	u	6.0	1
104-51-8	n-Butylbenzene	u	6.0	1
95-50-1	1,2-Dichlorobenzene	u	6.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	30	5
120-82-1	1,2,4-Trichlorobenzene	u	30	10
87-68-3	Hexachlorobutadiene	u	30	10
91-20-3	Naphthalene	u	30	10
87-61-6	1,2,3-Trichlorobenzene	u	30	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	93.4	80-120	80-120	50.0
1,2-Dichloroethane-d4	93.4	70-121	70-121	50.0
Toluene-d8	87.3	81-117	81-117	50.0
4-Bromofluorobenzene	78.8	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6548-1	Laboratory Control Sample:	WG6548-2
Laboratory Matrix Duplicate:	WG6548-3	Dilution:	NA
Matrix Spike:	WG6548-4	Dilution:	NA
Matrix Spike Duplicate:	WG6548-5		

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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/22/00 Matrix: Soil
Method Blank ID: WG6548-1 Date Reported: 09/25/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	9.9	1
74-87-3	Chloromethane	u	4.9	1
75-01-4	Vinyl Chloride	u	4.9	1
74-83-9	Bromomethane	u	4.9	1
75-00-3	Chloroethane	u	9.9	1
75-69-4	Trichlorofluoromethane	u	4.9	1
67-64-1	Acetone	u	49.	20
75-35-4	1,1-Dichloroethene	u	4.9	1
75-09-2	Methylene Chloride	u	4.9	1
75-15-0	Carbon Disulfide	u	4.9	1
156-60-5	trans-1,2-Dichloroethene	u	4.9	1
108-05-4	Vinyl Acetate	u	49.	10
75-34-3	1,1-Dichloroethane	u	4.9	1
78-93-3	2-Butanone	u	49.	20
594-20-7	2,2-Dichloropropane	u	4.9	1
156-59-2	cis-1,2-Dichloroethene	u	4.9	1
67-66-3	Chloroform	u	4.9	1
74-97-5	Bromochloromethane	u	4.9	1
71-55-6	1,1,1-Trichloroethane	u	4.9	1
563-58-6	1,1-Dichloropropene	u	4.9	1
56-23-5	Carbon Tetrachloride	u	4.9	1
107-06-2	1,2-Dichloroethane	u	4.9	1
71-43-2	Benzene	u	4.9	1
79-01-6	Trichloroethene	u	4.9	1
78-87-5	1,2-Dichloropropane	u	4.9	1
75-27-4	Bromodichloromethane	u	4.9	1
74-95-3	Dibromomethane	u	4.9	1
108-10-1	4-Methyl-2-pentanone	u	49.	20
10061-01-5	cis-1,3-Dichloropropene	u	4.9	1
108-88-3	Toluene	u	4.9	1
10061-02-6	trans-1,3-Dichloropropene	u	4.9	1
591-78-6	2-Hexanone	u	49.	20
79-00-5	1,1,2-Trichloroethane	u	4.9	1
142-28-9	1,3-Dichloropropane	u	4.9	1
127-18-4	Tetrachloroethene	u	4.9	1
124-48-1	Dibromochloromethane	u	4.9	1
106-93-4	1,2-Dibromoethane	u	4.9	1
108-90-7	Chlorobenzene	u	4.9	1
100-41-4	Ethylbenzene	u	4.9	1
630-20-6	1,1,1,2-Tetrachloroethane	u	4.9	1
1330-20-7B	meta-/para-Xylenes	u	4.9	1
95-47-6	ortho-Xylene	u	4.9	1
100-42-5	Styrene	u	4.9	1
98-92-8	Isopropylbenzene	u	4.9	1
75-25-2	Bromoform	u	4.9	1
79-34-5	1,1,2,2-Tetrachloroethane	u	4.9	1
96-18-4	1,2,3-Trichloropropane	u	4.9	1
103-65-1	n-Propylbenzene	u	4.9	1
108-86-1	Bromobenzene	u	4.9	1
108-67-8	1,3,5-Trimethylbenzene	u	4.9	1
95-49-8	2-Chlorotoluene	u	4.9	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/22/00 Matrix: Soil
Method Blank ID: WG6548-1 Date Reported: 09/25/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
106-43-4	4-Chlorotoluene	u	4.9	1
98-06-6	tert-Butylbenzene	u	4.9	1
95-63-6	1,2,4-Trimethylbenzene	u	4.9	1
135-98-8	sec-Butylbenzene	u	4.9	1
99-87-6	p-Isopropyltoluene	u	4.9	1
541-73-1	1,3-Dichlorobenzene	u	4.9	1
106-46-7	1,4-Dichlorobenzene	u	4.9	1
104-51-8	n-Butylbenzene	u	4.9	1
95-50-1	1,2-Dichlorobenzene	u	4.9	1
96-12-8	1,2-Dibromo-3-chloropropane	u	25.	5
120-82-1	1,2,4-Trichlorobenzene	u	25.	10
87-68-3	Hexachlorobutadiene	u	25.	10
91-20-3	Naphthalene	u	25.	10
87-61-6	1,2,3-Trichlorobenzene	u	25.	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	96.2	80-120	80-120	50.0
1,2-Dichloroethane-d4	101.	70-121	70-121	50.0
Toluene-d8	90.5	81-117	81-117	50.0
4-Bromofluorobenzene	81.8	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB1019
Sample ID: M000975-004
Lab Duplicate ID: WG6548-3
Method: EPA 8260

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Analyzed: 09/22/00
Date Reported: 09/25/00

Matrix: Soil
Units: ug/kg
% Solids: 79.3
Analyst: Robert Williams

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
75-71-8	Dichlorodifluoromethane	u	u	NC	25	11
74-87-3	Chloromethane	u	u	NC	25	5.6
75-01-4	Vinyl Chloride	u	u	NC	25	5.6
74-83-9	Bromomethane	u	u	NC	25	5.6
75-00-3	Chloroethane	u	u	NC	25	11
75-69-4	Trichlorofluoromethane	u	u	NC	25	5.6
67-64-1	Acetone	28 J	23 J	17	25	56
75-35-4	1,1-Dichloroethene	u	u	NC	25	5.6
75-09-2	Methylene Chloride	u	u	NC	25	5.6
75-15-0	Carbon Disulfide	u	u	NC	25	5.6
156-60-5	trans-1,2-Dichloroethene	u	u	NC	25	5.6
108-05-4	Vinyl Acetate	u	u	NC	25	56
75-34-3	1,1-Dichloroethane	u	u	NC	25	5.6
78-93-3	2-Butanone	u	u	NC	25	56
594-20-7	2,2-Dichloropropane	u	u	NC	25	5.6
156-59-2	cis-1,2-Dichloroethene	u	u	NC	25	5.6
67-66-3	Chloroform	u	u	NC	25	5.6
74-97-5	Bromochloromethane	u	u	NC	25	5.6
71-55-6	1,1,1-Trichloroethane	u	u	NC	25	5.6
563-58-6	1,1-Dichloropropene	u	u	NC	25	5.6
56-23-5	Carbon Tetrachloride	u	u	NC	25	5.6
107-06-2	1,2-Dichloroethane	u	u	NC	25	5.6
71-43-2	Benzene	u	u	NC	25	5.6
79-01-6	Trichloroethene	u	u	NC	25	5.6
78-87-5	1,2-Dichloropropane	u	u	NC	25	5.6
75-27-4	Bromodichloromethane	u	u	NC	25	5.6
74-95-3	Dibromomethane	u	u	NC	25	5.6
108-10-1	4-Methyl-2-pentanone	u	u	NC	25	56
10061-01-5	cis-1,3-Dichloropropene	u	u	NC	25	5.6
108-88-3	Toluene	8.2	2.9 J	95 *	25	5.6
10061-02-6	trans-1,3-Dichloropropene	u	u	NC	25	5.6
591-78-6	2-Hexanone	u	u	NC	25	56
79-00-5	1,1,2-Trichloroethane	u	u	NC	25	5.6
142-28-9	1,3-Dichloropropane	u	u	NC	25	5.6
127-18-4	Tetrachloroethene	u	u	NC	25	5.6
124-48-1	Dibromochloromethane	u	u	NC	25	5.6
106-93-4	1,2-Dibromoethane	u	u	NC	25	5.6
108-90-7	Chlorobenzene	u	u	NC	25	5.6
100-41-4	Ethylbenzene	u	u	NC	25	5.6
630-20-6	1,1,1,2-Tetrachloroethane	u	u	NC	25	5.6
1330-20-7B	meta-/para-Xylenes	u	u	NC	25	5.6
95-47-6	ortho-Xylene	u	u	NC	25	5.6
100-42-5	Styrene	u	u	NC	25	5.6
98-92-8	Isopropylbenzene	u	u	NC	25	5.6
75-25-2	Bromoform	u	u	NC	25	5.6
79-34-5	1,1,2,2-Tetrachloroethane	u	u	NC	25	5.6
96-18-4	1,2,3-Trichloropropane	u	u	NC	25	5.6
103-65-1	n-Propylbenzene	u	u	NC	25	5.6
108-86-1	Bromobenzene	u	u	NC	25	5.6

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
J: Estimated Concentration below laboratory reporting limit.
*: Indicates the value is outside control limits.

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DEPARTMENT OF THE ARMY
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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB1019
Sample ID: M000975-004
Lab Duplicate ID: WG6548-3
Method: EPA 8260

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Analyzed: 09/22/00
Date Reported: 09/25/00

Matrix: Soil
Units: ug/kg
% Solids: 79.3
Analyst: Robert Williams

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
108-67-8	1,3,5-Trimethylbenzene	u	u	NC	25	5.6
95-49-8	2-Chlorotoluene	u	u	NC	25	5.6
106-43-4	4-Chlorotoluene	u	u	NC	25	5.6
98-06-6	tert-Butylbenzene	u	u	NC	25	5.6
95-63-6	1,2,4-Trimethylbenzene	u	u	NC	25	5.6
135-98-8	sec-Butylbenzene	u	u	NC	25	5.6
99-87-6	p-Isopropyltoluene	u	u	NC	25	5.6
541-73-1	1,3-Dichlorobenzene	u	u	NC	25	5.6
106-46-7	1,4-Dichlorobenzene	u	u	NC	25	5.6
104-51-8	n-Butylbenzene	u	u	NC	25	5.6
95-50-1	1,2-Dichlorobenzene	u	u	NC	25	5.6
96-12-8	1,2-Dibromo-3-chloropropane	u	u	NC	25	28
120-82-1	1,2,4-Trichlorobenzene	u	u	NC	25	28
87-68-3	Hexachlorobutadiene	u	u	NC	25	28
91-20-3	Naphthalene	u	u	NC	25	28
87-61-6	1,2,3-Trichlorobenzene	u	u	NC	25	28

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard Name	Added (ug/kg)	Sample (ug/kg)	Sample Rec (%)	Dup (ug/kg)	Dup Rec (%)	CQAB Lab Performanc Range	Method 8260 Acceptance Range	RPD (%)	CQAB Lab Performance Range
Dibromofluoromethane	50.0	46.7	93.4	47.1	94.2	80-120	80-120	0.80	25
1,2-Dichloroethane-d4	50.0	46.7	93.4	48.1	96.1	70-121	70-121	2.8	25
Toluene-d8	50.0	43.6	87.3	44.6	89.2	81-117	81-117	2.2	25
4-Bromofluorobenzene	50.0	39.4	78.8	41.3	82.6	74-121	74-121	4.7	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/22/00 Matrix: Soil
Sample ID: M000975-004 Date Reported: 09/25/00 Units: ug/kg
MS Sample ID: WG6548-4 % Solids: 79.3
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Sample Result	MS Conc	MS %Rec	QC Limits	MSD Conc	MSD %Rec	RPD (%)	QC Limits
75-71-8	Dichlorodifluoromethane	u	89.1	159 *	50-150	94.8	169 *	5.8	25
74-87-3	Chloromethane	u	67.7	121	50-150	72.9	130	7.0	25
75-01-4	Vinyl Chloride	u	56.1	100	50-150	62.7	112	10.8	25
74-83-9	Bromomethane	u	54.6	97.7	50-150	57.5	103	4.8	25
75-00-3	Chloroethane	u	53.4	95.6	50-150	58.6	105	8.9	25
75-69-4	Trichlorofluoromethane	u	58.9	105	50-150	63.3	113	6.8	25
67-64-1	Acetone	28 J	145	210 *	50-150	143	206 *	2.1	25
75-35-4	1,1-Dichloroethene	u	53.1	95.0	59-172	55.6	99.2	4.2	25
75-09-2	Methylene Chloride	u	51.4	92.0	60-140	54.8	97.7	6.0	25
75-15-0	Carbon Disulfide	u	47.5	85.0	60-140	52.5	93.6	9.6	25
156-60-5	trans-1,2-Dichloroethene	u	51.5	92.2	60-140	53.5	95.4	3.5	25
108-05-4	Vinyl Acetate	u	15.5	27.7 *	50-150	35.1	62.6	77.2 *	25
75-34-3	1,1-Dichloroethane	u	57.4	103	60-140	59.9	107	3.9	25
78-93-3	2-Butanone	u	112	200 *	50-140	119	212 *	5.7	25
594-20-7	2,2-Dichloropropane	u	61.2	110	60-140	63.1	113	2.7	25
156-59-2	cis-1,2-Dichloroethene	u	56.8	102	60-140	58.7	105	2.9	25
67-66-3	Chloroform	u	60.7	109	60-140	62.0	111	1.8	25
74-97-5	Bromochloromethane	u	60.5	108	60-140	62.2	111	2.4	25
71-55-6	1,1,1-Trichloroethane	u	59.6	107	60-140	60.8	108	1.6	25
563-58-6	1,1-Dichloropropene	u	58.0	104	60-140	59.4	106	2.0	25
56-23-5	Carbon Tetrachloride	u	51.6	92.4	60-140	57.4	102	10.3	25
107-06-2	1,2-Dichloroethane	u	60.0	107	60-140	58.4	104	3.1	25
71-43-2	Benzene	u	54.5	97.5	66-142	53.7	95.8	1.8	25
79-01-6	Trichloroethene	u	59.9	107	62-137	59.9	107	0.4	25
78-87-5	1,2-Dichloropropane	u	59.6	107	60-140	56.4	101	5.9	25
75-27-4	Bromodichloromethane	u	60.1	108	60-140	59.8	107	0.9	25
74-95-3	Dibromomethane	u	58.0	104	60-140	54.7	97.6	6.2	25
108-10-1	4-Methyl-2-pentanone	u	89.7	161 *	50-150	91.3	163 *	1.4	25
10061-01-5	cis-1,3-Dichloropropene	u	58.8	105	60-120	58.7	105	0.5	25
108-88-3	Toluene	8.2	64.1	100	59-139	62.5	96.8	3.3	25
10061-02-6	trans-1,3-Dichloropropene	u	57.7	103	50-150	58.7	105	1.4	25
591-78-6	2-Hexanone	u	102	183 *	60-140	103	184 *	0.6	25
79-00-5	1,1,2-Trichloroethane	u	55.6	99.5	60-140	53.4	95.2	4.4	25
142-28-9	1,3-Dichloropropane	u	56.3	101	60-140	54.2	96.7	4.2	25
127-18-4	Tetrachloroethene	u	53.4	95.6	60-140	55.4	98.8	3.3	25
124-48-1	Dibromochloromethane	u	58.6	105	60-140	60.3	108	2.5	25
106-93-4	1,2-Dibromoethane	u	57.9	104	60-140	58.3	104	0.3	25
108-90-7	Chlorobenzene	u	55.1	98.6	60-133	54.2	96.7	2.0	25
100-41-4	Ethylbenzene	u	60.0	107	60-140	57.2	102	5.1	25
630-20-6	1,1,1,2-Tetrachloroethane	u	60.7	109	60-140	56.9	101	6.8	25
1330-20-7B	meta-/para-Xylenes	u	111	99.3	60-140	109	97.2	2.2	25
95-47-6	ortho-Xylene	u	55.8	99.9	60-140	56.3	100	0.5	25
100-42-5	Styrene	u	55.0	98.4	60-140	55.2	98.4	0.	25
98-92-8	Isopropylbenzene	u	56.0	100	60-140	55.6	99.2	1.1	25
75-25-2	Bromoform	u	60.4	108	60-140	60.3	108	0.5	25
79-34-5	1,1,2,2-Tetrachloroethane	u	67.8	121	60-140	65.1	116	4.4	25
96-18-4	1,2,3-Trichloropropane	u	76.7	137	60-140	71.2	127	7.8	25
103-65-1	n-Propylbenzene	u	54.7	97.9	60-140	56.0	99.9	2.0	25
108-86-1	Bromobenzene	u	50.1	89.7	60-140	53.0	94.5	5.3	25
108-67-8	1,3,5-Trimethylbenzene	u	51.6	92.4	60-140	54.4	97.0	4.9	25

*: Indicates the value is outside control limits.
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
%Rec: Percent of the spike recovered from the matrix
J: Estimated Concentration below laboratory reporting limit.

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VOA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/22/00 Matrix: Soil
Sample ID: M000975-004 Date Reported: 09/25/00 Units: ug/kg
MS Sample ID: WG6548-4 % Solids: 79.3
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Sample Result	MS Conc	MS %Rec	QC Limits	MSD Conc	MSD %Rec	RPD (%)	QC Limits
95-49-8	2-Chlorotoluene	u	47.7	85.4	60-140	52.9	94.3	10.	25
106-43-4	4-Chlorotoluene	u	59.3	106	60-140	59.7	106	0.3	25
98-06-6	tert-Butylbenzene	u	55.2	98.8	60-140	56.7	101	2.3	25
95-63-6	1,2,4-Trimethylbenzene	u	53.1	95.0	60-140	53.1	94.7	0.4	25
135-98-8	sec-Butylbenzene	u	50.1	89.7	60-140	51.6	92.0	2.6	25
99-87-6	p-Isopropyltoluene	u	54.2	97.0	60-140	55.1	98.3	1.3	25
541-73-1	1,3-Dichlorobenzene	u	52.0	93.1	60-140	55.2	98.4	5.6	25
106-46-7	1,4-Dichlorobenzene	u	53.6	95.9	60-140	54.9	97.9	2.0	25
104-51-8	n-Butylbenzene	u	53.7	96.1	60-140	55.9	99.7	3.7	25
95-50-1	1,2-Dichlorobenzene	u	52.5	94.0	60-140	54.5	97.2	3.4	25
96-12-8	1,2-Dibromo-3-chloropropane	u	90.9	163 *	60-140	100	178 *	9.2	25
120-82-1	1,2,4-Trichlorobenzene	u	50.5	90.4	60-140	55.6	99.2	9.3	25
87-68-3	Hexachlorobutadiene	u	42.7	76.4	60-140	44.8	79.9	4.4	25
91-20-3	Naphthalene	u	69.3	124	60-140	92.4	165 *	28.2 *	25
87-61-6	1,2,3-Trichlorobenzene	u	52.5	94.0	60-140	60.8	108	14.3	25

%Rec: Percent of the spike recovered from the matrix
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
*: Indicates the value is outside control limits.

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard Name	Added (ug/kg)	MS (ug/kg)	MS Rec (%)	MSD (ug/kg)	MSD Rec (%)	CQAB Lab %Rec Limits	Method 8260 Acceptance Range	RPD (%)	CQAB Lab RPD Limits
Dibromofluoromethane	50.0	51.8	104.	53.5	107.	80-120	80-120	3.2	25
1,2-Dichloroethane-d4	50.0	50.5	101.	50.4	101.	70-121	70-121	0.20	25
Toluene-d8	50.0	48.5	97.0	49.2	98.4	81-117	81-117	1.4	25
4-Bromofluorobenzene	50.0	48.5	97.0	47.8	95.6	74-121	74-121	1.5	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/22/00 Matrix: Soil
LCS ID: WG6548-2 Date Reported: 09/25/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
75-71-8	Dichlorodifluoromethane	78.7	50.0	157 *	50-150
74-87-3	Chloromethane	63.9	50.0	128	50-150
75-01-4	Vinyl Chloride	55.2	50.0	110	50-150
74-83-9	Bromomethane	39.7	50.0	79.3	50-150
75-00-3	Chloroethane	43.3	50.0	86.5	50-150
75-69-4	Trichlorofluoromethane	53.6	50.0	107	50-150
67-64-1	Acetone	82.2	50.0	164 *	50-150
75-35-4	1,1-Dichloroethene	46.6	50.0	93.2	59-172
75-09-2	Methylene Chloride	44.1	50.0	88.1	60-140
75-15-0	Carbon Disulfide	45.3	50.0	90.5	60-140
156-60-5	trans-1,2-Dichloroethene	49.2	50.0	98.5	60-140
108-05-4	Vinyl Acetate	45.2 J	50.0	90.3	50-150
75-34-3	1,1-Dichloroethane	46.9	50.0	93.7	60-140
78-93-3	2-Butanone	74.9	50.0	150 *	50-140
594-20-7	2,2-Dichloropropane	51.5	50.0	103	60-140
156-59-2	cis-1,2-Dichloroethene	45.6	50.0	91.3	60-140
67-66-3	Chloroform	48.5	50.0	97.0	60-140
74-97-5	Bromochloromethane	50.2	50.0	100	60-140
71-55-6	1,1,1-Trichloroethane	49.6	50.0	99.2	60-140
563-58-6	1,1-Dichloropropene	52.3	50.0	105	60-140
56-23-5	Carbon Tetrachloride	51.9	50.0	104	60-140
107-06-2	1,2-Dichloroethane	48.2	50.0	96.4	60-140
71-43-2	Benzene	45.8	50.0	91.6	66-142
79-01-6	Trichloroethene	51.9	50.0	104	62-137
78-87-5	1,2-Dichloropropane	48.3	50.0	96.6	60-140
75-27-4	Bromodichloromethane	51.5	50.0	103	60-140
74-95-3	Dibromomethane	46.0	50.0	91.9	60-140
108-10-1	4-Methyl-2-pentanone	68.2	50.0	136	50-150
10061-01-5	cis-1,3-Dichloropropene	50.6	50.0	101	60-120
108-88-3	Toluene	48.3	50.0	96.5	59-139
10061-02-6	trans-1,3-Dichloropropene	48.4	50.0	96.9	50-150
591-78-6	2-Hexanone	74.3	50.0	149 *	60-140
79-00-5	1,1,2-Trichloroethane	43.0	50.0	86.0	60-140
142-28-9	1,3-Dichloropropane	44.2	50.0	88.3	60-140
127-18-4	Tetrachloroethene	48.4	50.0	96.8	60-140
124-48-1	Dibromochloromethane	50.9	50.0	102	60-140
106-93-4	1,2-Dibromoethane	47.2	50.0	94.3	60-140
108-90-7	Chlorobenzene	44.0	50.0	88.1	60-133
100-41-4	Ethylbenzene	45.3	50.0	90.5	60-140
630-20-6	1,1,1,2-Tetrachloroethane	45.3	50.0	90.5	60-140
1330-20-7B	meta-/para-Xylenes	88.0	100	88.0	60-140
95-47-6	ortho-Xylene	46.9	50.0	93.7	60-140
100-42-5	Styrene	47.6	50.0	95.2	60-140
98-92-8	Isopropylbenzene	47.5	50.0	95.1	60-140
75-25-2	Bromoform	52.3	50.0	105	60-140
79-34-5	1,1,2,2-Tetrachloroethane	43.8	50.0	87.7	60-140
96-18-4	1,2,3-Trichloropropane	46.4	50.0	92.8	60-140
103-65-1	n-Propylbenzene	42.5	50.0	84.9	60-140
108-86-1	Bromobenzene	41.1	50.0	82.2	60-140

*: Indicates the value is outside control limits.
J: Estimated Concentration below laboratory reporting limit.

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/22/00 Matrix: Soil
LCS ID: WG6548-2 Date Reported: 09/25/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
108-67-8	1,3,5-Trimethylbenzene	42.0	50.0	83.9	60-140
95-49-8	2-Chlorotoluene	41.9	50.0	83.8	60-140
106-43-4	4-Chlorotoluene	44.1	50.0	88.2	60-140
98-06-6	tert-Butylbenzene	44.2	50.0	88.4	60-140
95-63-6	1,2,4-Trimethylbenzene	42.3	50.0	84.5	60-140
135-98-8	sec-Butylbenzene	43.1	50.0	86.2	60-140
99-87-6	p-Isopropyltoluene	45.4	50.0	90.8	60-140
541-73-1	1,3-Dichlorobenzene	44.4	50.0	88.9	60-140
106-46-7	1,4-Dichlorobenzene	43.4	50.0	86.9	60-140
104-51-8	n-Butylbenzene	47.6	50.0	95.2	60-140
95-50-1	1,2-Dichlorobenzene	44.1	50.0	88.1	60-140
96-12-8	1,2-Dibromo-3-chloropropane	58.4	50.0	117	60-140
120-82-1	1,2,4-Trichlorobenzene	50.5	50.0	101	60-140
87-68-3	Hexachlorobutadiene	51.3	50.0	103	60-140
91-20-3	Naphthalene	62.6	50.0	125	60-140
87-61-6	1,2,3-Trichlorobenzene	52.7	50.0	105	60-140

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	96.2	80-120	80-120	50.0
1,2-Dichloroethane-d4	96.9	70-121	70-121	50.0
Toluene-d8	91.2	81-117	81-117	50.0
4-Bromofluorobenzene	81.8	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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DEPARTMENT OF THE ARMY
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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: 09262000-TB3
Sample ID: M000992-001
Batch ID: WG6589
Method: EPA 8260
Analyst: Leuschen

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Analyzed: 09/27/00
Date Reported: 10/02/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	1.0 J	2.0	0.5
75-15-0	Carbon Disulfide	u	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25	10
594-20-7	2,2-Dichloropropane	u	10	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
J: Estimated Concentration below laboratory reporting limit.

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DEPARTMENT OF THE ARMY
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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: 09262000-TB3
Sample ID: M000992-001
Batch ID: WG6589
Method: EPA 8260
Analyst: Leuschen

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Analyzed: 09/27/00
Date Reported: 10/02/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1
95-49-8	2-Chlorotoluene	u	5.0	1
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5.0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10	2
120-82-1	1,2,4-Trichlorobenzene	u	25	10
87-68-3	Hexachlorobutadiene	u	25	10
91-20-3	Naphthalene	u	25	10
87-61-6	1,2,3-Trichlorobenzene	u	25	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	99.7	80-120	80-120	50.0
1,2-Dichloroethane-d4	105.	76-114	76-114	50.0
Toluene-d8	96.4	88-110	88-110	50.0
4-Bromofluorobenzene	113.	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6589-1	Laboratory Control Sample:	WG6589-2
Laboratory Matrix Duplicate:	WG6589-3	Dilution:	NA
Matrix Spike:	WG6589-4	Dilution:	NA
Matrix Spike Duplicate:	WG6589-5		

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DEPARTMENT OF THE ARMY
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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AA3012
Sample ID: M000992-003
Batch ID: WG6589
Method: EPA 8260
Analyst: Leuschen

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Analyzed: 09/27/00
Date Reported: 10/02/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	u	2.0	0.5
75-15-0	Carbon Disulfide	u	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25	10
594-20-7	2,2-Dichloropropane	u	10	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AA3012
Sample ID: M000992-003
Batch ID: WG6589
Method: EPA 8260
Analyst: Leuschen

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Analyzed: 09/27/00
Date Reported: 10/02/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
95-49-8	2-Chlorotoluene	u	5.0	1
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5.0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10	2
120-82-1	1,2,4-Trichlorobenzene	u	25	10
87-68-3	Hexachlorobutadiene	u	25	10
91-20-3	Naphthalene	u	25	10
87-61-6	1,2,3-Trichlorobenzene	u	25	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	99.2	80-120	80-120	50.0
1,2-Dichloroethane-d4	106.	76-114	76-114	50.0
Toluene-d8	99.0	88-110	88-110	50.0
4-Bromofluorobenzene	112.	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6589-1	Laboratory Control Sample:	WG6589-2
Laboratory Matrix Duplicate:	WG6589-3	Dilution:	NA
Matrix Spike:	WG6589-4	Dilution:	NA
Matrix Spike Duplicate:	WG6589-5		

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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/27/00 Matrix: Water
Method Blank ID: WG6589-1 Date Reported: 10/02/00 Units: ug/L
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25.	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	u	2.0	0.5
75-15-0	Carbon Disulfide	u	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50.	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25.	10
594-20-7	2,2-Dichloropropane	u	10.	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25.	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25.	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1
95-49-8	2-Chlorotoluene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/27/00 Matrix: Water
Method Blank ID: WG6589-1 Date Reported: 10/02/00 Units: ug/L
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5:0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10.	2
120-82-1	1,2,4-Trichlorobenzene	u	25.	10
87-68-3	Hexachlorobutadiene	u	25.	10
91-20-3	Naphthalene	u	25.	10
87-61-6	1,2,3-Trichlorobenzene	u	25.	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	97.6	80-120	80-120	50.0
1,2-Dichloroethane-d4	109.	76-114	76-114	50.0
Toluene-d8	95.0	88-110	88-110	50.0
4-Bromofluorobenzene	111.	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AA3012
Sample ID: M000992-003
Lab Duplicate ID: WG6589-3
Method: EPA 8260

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Analyzed: 09/27/00
Date Reported: 10/02/00

Matrix: Water
Units: ug/L
Analyst: Leuschen

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
75-71-8	Dichlorodifluoromethane	u	u	NC	25	5
74-87-3	Chloromethane	u	u	NC	25	2
75-01-4	Vinyl Chloride	u	u	NC	25	2
74-83-9	Bromomethane	u	u	NC	25	2
75-00-3	Chloroethane	u	u	NC	25	2
75-69-4	Trichlorofluoromethane	u	u	NC	25	5
67-64-1	Acetone	u	u	NC	25	25
75-35-4	1,1-Dichloroethene	u	u	NC	25	2
75-09-2	Methylene Chloride	u	u	NC	25	2
75-15-0	Carbon Disulfide	u	u	NC	25	2
156-60-5	trans-1,2-Dichloroethene	u	u	NC	25	2
108-05-4	Vinyl Acetate	u	u	NC	25	50
75-34-3	1,1-Dichloroethane	u	u	NC	25	2
78-93-3	2-Butanone	u	u	NC	25	25
594-20-7	2,2-Dichloropropane	u	u	NC	25	10
156-59-2	cis-1,2-Dichloroethene	u	u	NC	25	2
67-66-3	Chloroform	u	u	NC	25	2
74-97-5	Bromochloromethane	u	u	NC	25	5
71-55-6	1,1,1-Trichloroethane	u	u	NC	25	2
563-58-6	1,1-Dichloropropene	u	u	NC	25	5
56-23-5	Carbon Tetrachloride	u	u	NC	25	2
107-06-2	1,2-Dichloroethane	u	u	NC	25	2
71-43-2	Benzene	u	u	NC	25	2
79-01-6	Trichloroethene	u	u	NC	25	2
78-87-5	1,2-Dichloropropane	u	u	NC	25	2
75-27-4	Bromodichloromethane	u	u	NC	25	2
74-95-3	Dibromomethane	u	u	NC	25	5
108-10-1	4-Methyl-2-pentanone	u	u	NC	25	25
10061-01-5	cis-1,3-Dichloropropene	u	u	NC	25	2
108-88-3	Toluene	u	u	NC	25	2
10061-02-6	trans-1,3-Dichloropropene	u	u	NC	25	2
591-78-6	2-Hexanone	u	u	NC	25	25
79-00-5	1,1,2-Trichloroethane	u	u	NC	25	2
142-28-9	1,3-Dichloropropane	u	u	NC	25	5
127-18-4	Tetrachloroethene	u	u	NC	25	2
124-48-1	Dibromochloromethane	u	u	NC	25	2
106-93-4	1,2-Dibromoethane	u	u	NC	25	5
108-90-7	Chlorobenzene	u	u	NC	25	2
100-41-4	Ethylbenzene	u	u	NC	25	2
630-20-6	1,1,1,2-Tetrachloroethane	u	u	NC	25	5
1330-20-7B	meta-/para-Xylenes	u	u	NC	25	2
95-47-6	ortho-Xylene	u	u	NC	25	2
100-42-5	Styrene	u	u	NC	25	2
98-92-8	Isopropylbenzene	u	u	NC	25	5
75-25-2	Bromoform	u	u	NC	25	2
79-34-5	1,1,2,2-Tetrachloroethane	u	u	NC	25	2
96-18-4	1,2,3-Trichloropropane	u	u	NC	25	5
103-65-1	n-Propylbenzene	u	u	NC	25	5
108-86-1	Bromobenzene	u	u	NC	25	5
108-67-8	1,3,5-Trimethylbenzene	u	u	NC	25	5
95-49-8	2-Chlorotoluene	u	u	NC	25	5

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)

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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AA3012
Sample ID: M000992-003
Lab Duplicate ID: WG6589-3
Method: EPA 8260

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Analyzed: 09/27/00
Date Reported: 10/02/00

Matrix: Water
Units: ug/L
Analyst: Leuschen

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
106-43-4	4-Chlorotoluene	u	u	NC	25	5
98-06-6	tert-Butylbenzene	u	u	NC	25	5
95-63-6	1,2,4-Trimethylbenzene	u	u	NC	25	5
135-98-8	sec-Butylbenzene	u	u	NC	25	5
99-87-6	p-Isopropyltoluene	u	u	NC	25	5
541-73-1	1,3-Dichlorobenzene	u	u	NC	25	5
106-46-7	1,4-Dichlorobenzene	u	u	NC	25	5
104-51-8	n-Butylbenzene	u	u	NC	25	5
95-50-1	1,2-Dichlorobenzene	u	u	NC	25	5
96-12-8	1,2-Dibromo-3-chloropropane	u	u	NC	25	10
120-82-1	1,2,4-Trichlorobenzene	u	u	NC	25	25
87-68-3	Hexachlorobutadiene	u	u	NC	25	25
91-20-3	Naphthalene	u	u	NC	25	25
87-61-6	1,2,3-Trichlorobenzene	u	u	NC	25	25

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard Name	Added (ug/L)	Sample (ug/L)	Sample Rec (%)	Dup (ug/L)	Dup Rec (%)	CQAB Lab Performanc Range	Method 8260 Acceptance Range	RPD (%)	CQAB Lab Performance Range
Dibromofluoromethane	50.0	49.6	99.2	50.1	100.	80-120	80-120	1.	25
1,2-Dichloroethane-d4	50.0	53.0	106.	53.3	107.	76-114	76-114	0.50	25
Toluene-d8	50.0	49.5	99.0	49.7	99.5	88-110	88-110	0.40	25
4-Bromofluorobenzene	50.0	56.2	112.	56.8	114.	86-115	86-115	1.2	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/27/00 Matrix: Water
Sample ID: M000992-003 Date Reported: 10/02/00 Units: ug/L
MS Sample ID: WG6589-4
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	Sample Result	MS Conc	MS %Rec	QC Limits	MSD Conc	MSD %Rec	RPD (%)	QC Limits
75-71-8	Dichlorodifluoromethane	u	97.6	97.6	60-140	93.4	93.4	4.4	25
74-87-3	Chloromethane	u	136	136	60-140	135	135	0.7	25
75-01-4	Vinyl Chloride	u	122	122	60-140	124	124	1.6	25
74-83-9	Bromomethane	u	68.1	68.1	60-140	61.4	61.4	10.3	25
75-00-3	Chloroethane	u	94.2	94.2	60-140	85.6	85.6	9.6	25
75-69-4	Trichlorofluoromethane	u	113	113	60-140	108	108	4.5	25
67-64-1	Acetone	u	121	120	60-140	119	118	1.7	25
75-35-4	1,1-Dichloroethene	u	125	125	61-145	123	123	1.6	25
75-09-2	Methylene Chloride	u	117	117	70-130	112	112	4.4	25
75-15-0	Carbon Disulfide	u	111	111	70-130	107	107	3.7	25
156-60-5	trans-1,2-Dichloroethene	u	124	124	70-130	121	121	2.4	25
108-05-4	Vinyl Acetate	u	127	127	60-140	122	122	4.0	25
75-34-3	1,1-Dichloroethane	u	108	108	70-130	105	105	2.8	25
78-93-3	2-Butanone	u	125	125	60-140	124	124	0.8	25
594-20-7	2,2-Dichloropropane	u	118	118	70-130	113	113	4.3	25
156-59-2	cis-1,2-Dichloroethene	u	120	120	70-130	115	115	4.3	25
67-66-3	Chloroform	u	113	113	70-130	107	107	5.5	25
74-97-5	Bromochloromethane	u	119	119	70-130	114	114	4.3	25
71-55-6	1,1,1-Trichloroethane	u	114	114	70-130	108	108	5.4	25
563-58-6	1,1-Dichloropropene	u	119	119	70-130	113	113	5.2	25
56-23-5	Carbon Tetrachloride	u	110	110	70-130	102	102	7.5	25
107-06-2	1,2-Dichloroethane	u	113	113	70-130	108	108	4.5	25
71-43-2	Benzene	u	112	112	76-127	109	109	2.7	25
79-01-6	Trichloroethene	u	114	114	71-120	112	112	1.8	25
78-87-5	1,2-Dichloropropane	u	102	102	70-130	102	102	0.	25
75-27-4	Bromodichloromethane	u	110	110	70-130	107	107	2.8	25
74-95-3	Dibromomethane	u	117	117	70-130	114	114	2.6	25
108-10-1	4-Methyl-2-pentanone	u	155	155 *	60-140	155	155 *	0.	25
10061-01-5	cis-1,3-Dichloropropene	u	117	117	70-130	113	113	3.5	25
108-88-3	Toluene	u	123	123	76-125	118	118	4.2	25
10061-02-6	trans-1,3-Dichloropropene	u	106	106	60-140	104	104	1.9	25
591-78-6	2-Hexanone	u	142	142 *	70-130	143	143 *	0.7	25
79-00-5	1,1,2-Trichloroethane	u	129	129	70-130	125	125	3.1	25
142-28-9	1,3-Dichloropropane	u	123	123	70-130	120	120	2.5	25
127-18-4	Tetrachloroethene	u	120	120	70-130	117	117	2.5	25
124-48-1	Dibromochloromethane	u	117	117	70-130	113	113	3.5	25
106-93-4	1,2-Dibromoethane	u	131	131 *	70-130	129	129	1.5	25
108-90-7	Chlorobenzene	u	111	111	75-130	107	107	3.7	25
100-41-4	Ethylbenzene	u	111	111	70-130	106	106	4.6	25
630-20-6	1,1,1,2-Tetrachloroethane	u	104	104	70-130	99.7	99.7	4.2	25
1330-20-7B	meta-/para-Xylenes	u	222	111	70-130	211	106	5.1	25
95-47-6	ortho-Xylene	u	109	109	70-130	105	105	3.7	25
100-42-5	Styrene	u	110	110	70-130	104	104	5.6	25
98-92-8	Isopropylbenzene	u	109	109	70-130	103	103	5.7	25
75-25-2	Bromoform	u	121	121	70-130	118	118	2.5	25
79-34-5	1,1,2,2-Tetrachloroethane	u	128	128	70-130	128	128	0.	25
96-18-4	1,2,3-Trichloropropane	u	129	129	70-130	129	129	0.	25
103-65-1	n-Propylbenzene	u	108	108	70-130	106	106	1.9	25
108-86-1	Bromobenzene	u	117	117	70-130	117	117	0.	25
108-67-8	1,3,5-Trimethylbenzene	u	118	118	70-130	116	116	1.7	25
95-49-8	2-Chlorotoluene	u	115	115	70-130	114	114	0.9	25

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
%Rec: Percent of the spike recovered from the matrix
*: Indicates the value is outside control limits.

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VOA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/27/00 Matrix: Water
Sample ID: M000992-003 Date Reported: 10/02/00 Units: ug/L
MS Sample ID: WG6589-4
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	Sample Result	MS Conc	MS %Rec	QC Limits	MSD Conc	MSD %Rec	RPD (%)	QC Limits
106-43-4	4-Chlorotoluene	u	119	119	70-130	118	118	0.8	25
98-06-6	tert-Butylbenzene	u	103	103	70-130	102	102	1.0	25
95-63-6	1,2,4-Trimethylbenzene	u	107	107	70-130	106	106	0.9	25
135-98-8	sec-Butylbenzene	u	106	106	70-130	104	104	1.9	25
99-87-6	p-Isopropyltoluene	u	109	109	70-130	107	107	1.9	25
541-73-1	1,3-Dichlorobenzene	u	114	114	70-130	114	114	0.	25
106-46-7	1,4-Dichlorobenzene	u	99.9	99.9	70-130	98.6	98.6	1.3	25
104-51-8	n-Butylbenzene	u	105	105	70-130	103	103	1.9	25
95-50-1	1,2-Dichlorobenzene	u	104	104	70-130	103	103	1.0	25
96-12-8	1,2-Dibromo-3-chloropropane	u	139	139 *	70-130	140	140 *	0.7	25
120-82-1	1,2,4-Trichlorobenzene	u	110	110	70-130	110	110	0.	25
87-68-3	Hexachlorobutadiene	u	104	104	70-130	99.9	99.9	4.0	25
91-20-3	Naphthalene	u	144	144 *	70-130	145	145 *	0.7	25
87-61-6	1,2,3-Trichlorobenzene	u	115	115	70-130	115	115	0.	25

%Rec: Percent of the spike recovered from the matrix
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
*: Indicates the value is outside control limits.

Method Quality Control

Surrogate Standard Name	Added (ug/L)	MS (ug/L)	MS Rec (%)	MSD (ug/L)	MSD Rec (%)	CQAB Lab %Rec Limits	Method 8260 Acceptance Range	RPD (%)	CQAB Lab RPD Limits
Dibromofluoromethane	50.0	49.5	99.0	47.7	95.4	80-120	80-120	3.7	25
1,2-Dichloroethane-d4	50.0	54.2	108.	52.6	105.	76-114	76-114	3.1	25
Toluene-d8	50.0	51.2	102.	50.4	101.	88-110	88-110	1.6	25
4-Bromofluorobenzene	50.0	52.8	106.	53.0	106.	86-115	86-115	0.40	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/27/00 Matrix: Water
LCS ID: WG6589-2 Date Reported: 10/02/00 Units: ug/L
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
75-71-8	Dichlorodifluoromethane	107	100	107	60-140
74-87-3	Chloromethane	132	100	132	60-140
75-01-4	Vinyl Chloride	119	100	119	60-140
74-83-9	Bromomethane	65.0	100	65.0	60-140
75-00-3	Chloroethane	84.7	100	84.7	60-140
75-69-4	Trichlorofluoromethane	101	100	101	60-140
67-64-1	Acetone	105	100	105	60-140
75-35-4	1,1-Dichloroethene	110	100	110	61-145
75-09-2	Methylene Chloride	105	100	105	70-130
75-15-0	Carbon Disulfide	96.7	100	96.7	70-130
156-60-5	trans-1,2-Dichloroethene	110	100	110	70-130
108-05-4	Vinyl Acetate	112	100	112	60-140
75-34-3	1,1-Dichloroethane	99.2	100	99.2	70-130
78-93-3	2-Butanone	110	100	110	60-140
594-20-7	2,2-Dichloropropane	104	100	104	70-130
156-59-2	cis-1,2-Dichloroethene	111	100	111	70-130
67-66-3	Chloroform	102	100	102	70-130
74-97-5	Bromochloromethane	109	100	109	70-130
71-55-6	1,1,1-Trichloroethane	99.2	100	99.2	70-130
563-58-6	1,1-Dichloropropene	106	100	106	70-130
56-23-5	Carbon Tetrachloride	93.1	100	93.1	70-130
107-06-2	1,2-Dichloroethane	103	100	103	70-130
71-43-2	Benzene	104	100	104	76-127
79-01-6	Trichloroethene	104	100	104	71-120
78-87-5	1,2-Dichloropropane	98.6	100	98.6	70-130
75-27-4	Bromodichloromethane	101	100	101	70-130
74-95-3	Dibromomethane	109	100	109	70-130
108-10-1	4-Methyl-2-pentanone	120	100	120	60-140
10061-01-5	cis-1,3-Dichloropropene	110	100	110	70-130
108-88-3	Toluene	110	100	110	76-125
10061-02-6	trans-1,3-Dichloropropene	97.3	100	97.3	60-140
591-78-6	2-Hexanone	103	100	103	70-130
79-00-5	1,1,2-Trichloroethane	113	100	113	70-130
142-28-9	1,3-Dichloropropane	108	100	108	70-130
127-18-4	Tetrachloroethene	105	100	105	70-130
124-48-1	Dibromochloromethane	105	100	105	70-130
106-93-4	1,2-Dibromoethane	118	100	118	70-130
108-90-7	Chlorobenzene	99.1	100	99.1	75-130
100-41-4	Ethylbenzene	98.3	100	98.3	70-130
630-20-6	1,1,1,2-Tetrachloroethane	93.4	100	93.4	70-130
1330-20-7B	meta-/para-Xylenes	195	200	97.4	70-130
95-47-6	ortho-Xylene	97.0	100	97.0	70-130
100-42-5	Styrene	97.1	100	97.1	70-130
98-92-8	Isopropylbenzene	94.9	100	94.9	70-130
75-25-2	Bromoform	107	100	107	70-130
79-34-5	1,1,2,2-Tetrachloroethane	120	100	120	70-130
96-18-4	1,2,3-Trichloropropane	120	100	120	70-130
103-65-1	n-Propylbenzene	103	100	103	70-130
108-86-1	Bromobenzene	115	100	115	70-130
108-67-8	1,3,5-Trimethylbenzene	113	100	113	70-130
95-49-8	2-Chlorotoluene	111	100	111	70-130
106-43-4	4-Chlorotoluene	116	100	116	70-130
98-06-6	tert-Butylbenzene	100	100	100	70-130
95-63-6	1,2,4-Trimethylbenzene	104	100	104	70-130
135-98-8	sec-Butylbenzene	101	100	101	70-130

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/27/00 Matrix: Water
LCS ID: WG6589-2 Date Reported: 10/02/00 Units: ug/L
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
99-87-6	p-Isopropyltoluene	101	100	101	70-130
541-73-1	1,3-Dichlorobenzene	109	100	109	70-130
106-46-7	1,4-Dichlorobenzene	93.8	100	93.8	70-130
104-51-8	n-Butylbenzene	98.3	100	98.3	70-130
95-50-1	1,2-Dichlorobenzene	99.6	100	99.6	70-130
96-12-8	1,2-Dibromo-3-chloropropane	123	100	123	70-130
120-82-1	1,2,4-Trichlorobenzene	108	100	108	70-130
87-68-3	Hexachlorobutadiene	98.8	100	98.8	70-130
91-20-3	Naphthalene	130	100	130	70-130
87-61-6	1,2,3-Trichlorobenzene	110	100	110	70-130

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	94.3	80-120	80-120	50.0
1,2-Dichloroethane-d4	106.	76-114	76-114	50.0
Toluene-d8	99.6	88-110	88-110	50.0
4-Bromofluorobenzene	111.	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0435
Sample ID: M000992-004
Batch ID: WG6573
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Analyzed: 09/27/00
Date Reported: 09/29/00

Matrix: Soil
Units: ug/kg
% Solids: 89.0
Dilution: 1

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	11	1
74-87-3	Chloromethane	u	5.5	1
75-01-4	Vinyl Chloride	u	5.5	1
74-83-9	Bromomethane	u	5.5	1
75-00-3	Chloroethane	u	11	1
75-69-4	Trichlorofluoromethane	u	5.5	1
67-64-1	Acetone	u	55	20
75-35-4	1,1-Dichloroethene	u	5.5	1
75-09-2	Methylene Chloride	u	5.5	1
75-15-0	Carbon Disulfide	u	5.5	1
156-60-5	trans-1,2-Dichloroethene	u	5.5	1
108-05-4	Vinyl Acetate	u	55	10
75-34-3	1,1-Dichloroethane	u	5.5	1
78-93-3	2-Butanone	u	55	20
594-20-7	2,2-Dichloropropane	u	5.5	1
156-59-2	cis-1,2-Dichloroethene	u	5.5	1
67-66-3	Chloroform	u	5.5	1
74-97-5	Bromochloromethane	u	5.5	1
71-55-6	1,1,1-Trichloroethane	u	5.5	1
563-58-6	1,1-Dichloropropene	u	5.5	1
56-23-5	Carbon Tetrachloride	u	5.5	1
107-06-2	1,2-Dichloroethane	u	5.5	1
71-43-2	Benzene	u	5.5	1
79-01-6	Trichloroethene	u	5.5	1
78-87-5	1,2-Dichloropropane	u	5.5	1
75-27-4	Bromodichloromethane	u	5.5	1
74-95-3	Dibromomethane	u	5.5	1
108-10-1	4-Methyl-2-pentanone	u	55	20
10061-01-5	cis-1,3-Dichloropropene	u	5.5	1
108-88-3	Toluene	u	5.5	1
10061-02-6	trans-1,3-Dichloropropene	u	5.5	1
591-78-6	2-Hexanone	u	55	20
79-00-5	1,1,2-Trichloroethane	u	5.5	1
142-28-9	1,3-Dichloropropane	u	5.5	1
127-18-4	Tetrachloroethene	u	5.5	1
124-48-1	Dibromochloromethane	u	5.5	1
106-93-4	1,2-Dibromoethane	u	5.5	1
108-90-7	Chlorobenzene	u	5.5	1
100-41-4	Ethylbenzene	u	5.5	1
630-20-6	1,1,1,2-Tetrachloroethane	u	5.5	1
1330-20-7B	meta-/para-Xylenes	u	5.5	1
95-47-6	ortho-Xylene	u	5.5	1
100-42-5	Styrene	u	5.5	1
98-92-8	Isopropylbenzene	u	5.5	1
75-25-2	Bromoform	u	5.5	1
79-34-5	1,1,2,2-Tetrachloroethane	u	5.5	1
96-18-4	1,2,3-Trichloropropane	u	5.5	1
103-65-1	n-Propylbenzene	u	5.5	1
108-86-1	Bromobenzene	u	5.5	1
108-67-8	1,3,5-Trimethylbenzene	u	5.5	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0435
Sample ID: M000992-004
Batch ID: WG6573
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Analyzed: 09/27/00
Date Reported: 09/29/00

Matrix: Soil
Units: ug/kg
% Solids: 89.0
Dilution: 1

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
95-49-8	2-Chlorotoluene	u	5.5	1
106-43-4	4-Chlorotoluene	u	5.5	1
98-06-6	tert-Butylbenzene	u	5.5	1
95-63-6	1,2,4-Trimethylbenzene	u	5.5	1
135-98-8	sec-Butylbenzene	u	5.5	1
99-87-6	p-Isopropyltoluene	u	5.5	1
541-73-1	1,3-Dichlorobenzene	u	5.5	1
106-46-7	1,4-Dichlorobenzene	u	5.5	1
104-51-8	n-Butylbenzene	u	5.5	1
95-50-1	1,2-Dichlorobenzene	u	5.5	1
96-12-8	1,2-Dibromo-3-chloropropane	u	28	5
120-82-1	1,2,4-Trichlorobenzene	u	28	10
87-68-3	Hexachlorobutadiene	u	28	10
91-20-3	Naphthalene	u	28	10
87-61-6	1,2,3-Trichlorobenzene	u	28	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	115.	80-120	80-120	50.0
1,2-Dichloroethane-d4	106.	70-121	70-121	50.0
Toluene-d8	95.8	81-117	81-117	50.0
4-Bromofluorobenzene	94.7	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6573-1	Laboratory Control Sample:	WG6573-2
Laboratory Matrix Duplicate:	WG6573-3	Dilution:	NA
Matrix Spike:	WG6573-4	Dilution:	NA
Matrix Spike Duplicate:	WG6573-5		

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DEPARTMENT OF THE ARMY
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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/27/00 Matrix: Soil
Method Blank ID: WG6573-1 Date Reported: 09/29/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	9.8	1
74-87-3	Chloromethane	u	4.9	1
75-01-4	Vinyl Chloride	u	4.9	1
74-83-9	Bromomethane	u	4.9	1
75-00-3	Chloroethane	u	9.8	1
75-69-4	Trichlorofluoromethane	u	4.9	1
67-64-1	Acetone	u	49.	20
75-35-4	1,1-Dichloroethene	u	4.9	1
75-09-2	Methylene Chloride	u	4.9	1
75-15-0	Carbon Disulfide	u	4.9	1
156-60-5	trans-1,2-Dichloroethene	u	4.9	1
108-05-4	Vinyl Acetate	u	49.	10
75-34-3	1,1-Dichloroethane	u	4.9	1
78-93-3	2-Butanone	u	49.	20
594-20-7	2,2-Dichloropropane	u	4.9	1
156-59-2	cis-1,2-Dichloroethene	u	4.9	1
67-66-3	Chloroform	u	4.9	1
74-97-5	Bromochloromethane	u	4.9	1
71-55-6	1,1,1-Trichloroethane	u	4.9	1
563-58-6	1,1-Dichloropropene	u	4.9	1
56-23-5	Carbon Tetrachloride	u	4.9	1
107-06-2	1,2-Dichloroethane	u	4.9	1
71-43-2	Benzene	u	4.9	1
79-01-6	Trichloroethene	u	4.9	1
78-87-5	1,2-Dichloropropane	u	4.9	1
75-27-4	Bromodichloromethane	u	4.9	1
74-95-3	Dibromomethane	u	4.9	1
108-10-1	4-Methyl-2-pentanone	u	49.	20
10061-01-5	cis-1,3-Dichloropropene	u	4.9	1
108-88-3	Toluene	u	4.9	1
10061-02-6	trans-1,3-Dichloropropene	u	4.9	1
591-78-6	2-Hexanone	u	49.	20
79-00-5	1,1,2-Trichloroethane	u	4.9	1
142-28-9	1,3-Dichloropropane	u	4.9	1
127-18-4	Tetrachloroethene	u	4.9	1
124-48-1	Dibromochloromethane	u	4.9	1
106-93-4	1,2-Dibromoethane	u	4.9	1
108-90-7	Chlorobenzene	u	4.9	1
100-41-4	Ethylbenzene	u	4.9	1
630-20-6	1,1,1,2-Tetrachloroethane	u	4.9	1
1330-20-7B	meta-/para-Xylenes	u	4.9	1
95-47-6	ortho-Xylene	u	4.9	1
100-42-5	Styrene	u	4.9	1
98-92-8	Isopropylbenzene	u	4.9	1
75-25-2	Bromoform	u	4.9	1
79-34-5	1,1,2,2-Tetrachloroethane	u	4.9	1
96-18-4	1,2,3-Trichloropropane	u	4.9	1
103-65-1	n-Propylbenzene	u	4.9	1
108-86-1	Bromobenzene	u	4.9	1
108-67-8	1,3,5-Trimethylbenzene	u	4.9	1
95-49-8	2-Chlorotoluene	u	4.9	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

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DEPARTMENT OF THE ARMY
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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/27/00 Matrix: Soil
Method Blank ID: WG6573-1 Date Reported: 09/29/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
106-43-4	4-Chlorotoluene	u	4.9	1
98-06-6	tert-Butylbenzene	u	4.9	1
95-63-6	1,2,4-Trimethylbenzene	u	4.9	1
135-98-8	sec-Butylbenzene	u	4.9	1
99-87-6	p-Isopropyltoluene	u	4.9	1
541-73-1	1,3-Dichlorobenzene	u	4.9	1
106-46-7	1,4-Dichlorobenzene	u	4.9	1
104-51-8	n-Butylbenzene	u	4.9	1
95-50-1	1,2-Dichlorobenzene	u	4.9	1
96-12-8	1,2-Dibromo-3-chloropropane	u	25.	5
120-82-1	1,2,4-Trichlorobenzene	u	25.	10
87-68-3	Hexachlorobutadiene	u	25.	10
91-20-3	Naphthalene	u	25.	10
87-61-6	1,2,3-Trichlorobenzene	u	25.	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	103.	80-120	80-120	50.0
1,2-Dichloroethane-d4	98.9	70-121	70-121	50.0
Toluene-d8	90.9	81-117	81-117	50.0
4-Bromofluorobenzene	80.0	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: Batch Specific
Sample ID: M000987-001
Lab Duplicate ID: WG6573-3
Method: EPA 8260

Date Sampled: 09/25/00
Date Received: 09/26/00
Date Analyzed: 09/27/00
Date Reported: 09/29/00

Matrix: Soil
Units: ug/kg
% Solids: 86.1
Analyst: Robert Williams

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
75-71-8	Dichlorodifluoromethane	u	u	NC	25	11
74-87-3	Chloromethane	u	u	NC	25	5.6
75-01-4	Vinyl Chloride	u	u	NC	25	5.6
74-83-9	Bromomethane	u	u	NC	25	5.6
75-00-3	Chloroethane	u	u	NC	25	11
75-69-4	Trichlorofluoromethane	u	u	NC	25	5.6
67-64-1	Acetone	u	21 J	NC	25	56
75-35-4	1,1-Dichloroethene	u	u	NC	25	5.6
75-09-2	Methylene Chloride	u	u	NC	25	5.6
75-15-0	Carbon Disulfide	u	u	NC	25	5.6
156-60-5	trans-1,2-Dichloroethene	u	u	NC	25	5.6
108-05-4	Vinyl Acetate	u	u	NC	25	56
75-34-3	1,1-Dichloroethane	u	u	NC	25	5.6
78-93-3	2-Butanone	u	u	NC	25	56
594-20-7	2,2-Dichloropropane	u	u	NC	25	5.6
156-59-2	cis-1,2-Dichloroethene	u	u	NC	25	5.6
67-66-3	Chloroform	u	u	NC	25	5.6
74-97-5	Bromochloromethane	u	u	NC	25	5.6
71-55-6	1,1,1-Trichloroethane	u	u	NC	25	5.6
563-58-6	1,1-Dichloropropene	u	u	NC	25	5.6
56-23-5	Carbon Tetrachloride	u	u	NC	25	5.6
107-06-2	1,2-Dichloroethane	u	u	NC	25	5.6
71-43-2	Benzene	u	u	NC	25	5.6
79-01-6	Trichloroethene	u	u	NC	25	5.6
78-87-5	1,2-Dichloropropane	u	u	NC	25	5.6
75-27-4	Bromodichloromethane	u	u	NC	25	5.6
74-95-3	Dibromomethane	u	u	NC	25	5.6
108-10-1	4-Methyl-2-pentanone	u	u	NC	25	56
10061-01-5	cis-1,3-Dichloropropene	u	u	NC	25	5.6
108-88-3	Toluene	u	u	NC	25	5.6
10061-02-6	trans-1,3-Dichloropropene	u	u	NC	25	5.6
591-78-6	2-Hexanone	u	u	NC	25	56
79-00-5	1,1,2-Trichloroethane	u	u	NC	25	5.6
142-28-9	1,3-Dichloropropane	u	u	NC	25	5.6
127-18-4	Tetrachloroethene	u	u	NC	25	5.6
124-48-1	Dibromochloromethane	u	u	NC	25	5.6
106-93-4	1,2-Dibromoethane	u	u	NC	25	5.6
108-90-7	Chlorobenzene	u	u	NC	25	5.6
100-41-4	Ethylbenzene	u	u	NC	25	5.6
630-20-6	1,1,1,2-Tetrachloroethane	u	u	NC	25	5.6
1330-20-7B	meta-/para-Xylenes	u	u	NC	25	5.6
95-47-6	ortho-Xylene	u	u	NC	25	5.6
100-42-5	Styrene	u	u	NC	25	5.6
98-92-8	Isopropylbenzene	u	u	NC	25	5.6
75-25-2	Bromoform	u	u	NC	25	5.6
79-34-5	1,1,2,2-Tetrachloroethane	u	u	NC	25	5.6
96-18-4	1,2,3-Trichloropropane	u	u	NC	25	5.6
103-65-1	n-Propylbenzene	u	u	NC	25	5.6
108-86-1	Bromobenzene	u	u	NC	25	5.6

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
Batch Specific: The sample used for batch QC was from another project within this work group.
J: Estimated Concentration below laboratory reporting limit.

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DEPARTMENT OF THE ARMY
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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: Batch Specific
Sample ID: M000987-001
Lab Duplicate ID: WG6573-3
Method: EPA 8260

Date Sampled: 09/25/00
Date Received: 09/26/00
Date Analyzed: 09/27/00
Date Reported: 09/29/00

Matrix: Soil
Units: ug/kg
% Solids: 86.1
Analyst: Robert Williams

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
108-67-8	1,3,5-Trimethylbenzene	u	u	NC	25	5.6
95-49-8	2-Chlorotoluene	u	u	NC	25	5.6
106-43-4	4-Chlorotoluene	u	u	NC	25	5.6
98-06-6	tert-Butylbenzene	u	u	NC	25	5.6
95-63-6	1,2,4-Trimethylbenzene	u	u	NC	25	5.6
135-98-8	sec-Butylbenzene	u	u	NC	25	5.6
99-87-6	p-Isopropyltoluene	u	u	NC	25	5.6
541-73-1	1,3-Dichlorobenzene	u	u	NC	25	5.6
106-46-7	1,4-Dichlorobenzene	u	u	NC	25	5.6
104-51-8	n-Butylbenzene	u	u	NC	25	5.6
95-50-1	1,2-Dichlorobenzene	u	u	NC	25	5.6
96-12-8	1,2-Dibromo-3-chloropropane	u	u	NC	25	28
120-82-1	1,2,4-Trichlorobenzene	u	u	NC	25	28
87-68-3	Hexachlorobutadiene	u	u	NC	25	28
91-20-3	Naphthalene	u	u	NC	25	28
87-61-6	1,2,3-Trichlorobenzene	u	u	NC	25	28

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
Batch Specific: The sample used for batch QC was from another project within this work group.

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard Name	Added (ug/kg)	Sample (ug/kg)	Sample Rec (%)	Dup (ug/kg)	Dup Rec (%)	CQAB Lab Performanc Range	Method 8260 Acceptance Range	RPD (%)	CQAB Lab Performance Range
Dibromofluoromethane	50.0	53.4	107.	56.0	112.	80-120	80-120	4.7	25
1,2-Dichloroethane-d4	50.0	50.2	100.	53.3	107.	70-121	70-121	6.	25
Toluene-d8	50.0	45.0	90.0	45.4	90.7	81-117	81-117	0.80	25
4-Bromofluorobenzene	50.0	39.8	79.5	39.9	79.8	74-121	74-121	0.40	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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DEPARTMENT OF THE ARMY
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VOA Sample QC Exception Report

Sample ID:	WG6573-4, WG6573-5			Matrix:	Soil
Batch ID:	WG6573	Date Analyzed:	NA	Units:	ug/kg
Method:	EPA 8260B	Date Reported:	09/29/00	% Solids:	NA

Exception Noted: Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples were NOT reported in work group WG6573

Report: Work group, WG6573, was run with the following quality control samples - Method Blank (MB), Laboratory Matrix Duplicate (LD) and a Laboratory Control Sample (LCS). The MS and MSD were not run as there was insufficient sample provided by the EnCore samplers to provide sample to spike. The LD and its original sample can provide method reproducibility information.

Approved: 10/03/00, R. Meyer, QA Officer

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Chemistry Quality Assurance Branch

VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/27/00 Matrix: Soil
LCS ID: WG6573-2 Date Reported: 09/29/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
75-71-8	Dichlorodifluoromethane	71.8	50.0	144	50-150
74-87-3	Chloromethane	58.8	50.0	118	50-150
75-01-4	Vinyl Chloride	53.7	50.0	107	50-150
74-83-9	Bromomethane	45.7	50.0	91.4	50-150
75-00-3	Chloroethane	46.4	50.0	92.8	50-150
75-69-4	Trichlorofluoromethane	50.5	50.0	101	50-150
67-64-1	Acetone	49.1 J	50.0	98.3	50-150
75-35-4	1,1-Dichloroethene	46.9	50.0	93.7	59-172
75-09-2	Methylene Chloride	45.6	50.0	91.2	60-140
75-15-0	Carbon Disulfide	44.1	50.0	88.1	60-140
156-60-5	trans-1,2-Dichloroethene	45.7	50.0	91.3	60-140
108-05-4	Vinyl Acetate	50.6	50.0	101	50-150
75-34-3	1,1-Dichloroethane	49.7	50.0	99.4	60-140
78-93-3	2-Butanone	47.7 J	50.0	95.4	50-140
594-20-7	2,2-Dichloropropane	53.1	50.0	106	60-140
156-59-2	cis-1,2-Dichloroethene	48.5	50.0	97.0	60-140
67-66-3	Chloroform	52.1	50.0	104	60-140
74-97-5	Bromochloromethane	51.1	50.0	102	60-140
71-55-6	1,1,1-Trichloroethane	52.9	50.0	106	60-140
563-58-6	1,1-Dichloropropene	54.4	50.0	109	60-140
56-23-5	Carbon Tetrachloride	53.3	50.0	107	60-140
107-06-2	1,2-Dichloroethane	52.2	50.0	104	60-140
71-43-2	Benzene	47.3	50.0	94.5	66-142
79-01-6	Trichloroethene	54.0	50.0	108	62-137
78-87-5	1,2-Dichloropropane	48.9	50.0	97.8	60-140
75-27-4	Bromodichloromethane	53.7	50.0	107	60-140
74-95-3	Dibromomethane	47.7	50.0	95.4	60-140
108-10-1	4-Methyl-2-pentanone	55.0	50.0	110	50-150
10061-01-5	cis-1,3-Dichloropropene	53.6	50.0	107	60-120
108-88-3	Toluene	48.6	50.0	97.3	59-139
10061-02-6	trans-1,3-Dichloropropene	50.4	50.0	101	50-150
591-78-6	2-Hexanone	50.2	50.0	100	60-140
79-00-5	1,1,2-Trichloroethane	44.6	50.0	89.1	60-140
142-28-9	1,3-Dichloropropane	46.8	50.0	93.5	60-140
127-18-4	Tetrachloroethene	48.8	50.0	97.5	60-140
124-48-1	Dibromochloromethane	52.5	50.0	105	60-140
106-93-4	1,2-Dibromoethane	49.4	50.0	98.7	60-140
108-90-7	Chlorobenzene	46.7	50.0	93.4	60-133
100-41-4	Ethylbenzene	50.7	50.0	101	60-140
630-20-6	1,1,1,2-Tetrachloroethane	48.4	50.0	96.8	60-140
1330-20-7B	meta-/para-Xylenes	92.0	100	92.0	60-140
95-47-6	ortho-Xylene	47.1	50.0	94.2	60-140
100-42-5	Styrene	47.5	50.0	95.1	60-140
98-92-8	Isopropylbenzene	47.8	50.0	95.5	60-140
75-25-2	Bromoform	52.7	50.0	105	60-140
79-34-5	1,1,2,2-Tetrachloroethane	49.3	50.0	98.6	60-140
96-18-4	1,2,3-Trichloropropane	56.2	50.0	112	60-140
103-65-1	n-Propylbenzene	44.3	50.0	88.5	60-140
108-86-1	Bromobenzene	41.0	50.0	82.0	60-140
108-67-8	1,3,5-Trimethylbenzene	42.2	50.0	84.4	60-140

J: Estimated Concentration below laboratory reporting limit.

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/27/00 Matrix: Soil
LCS ID: WG6573-2 Date Reported: 09/29/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
95-49-8	2-Chlorotoluene	43.7	50.0	87.4	60-140
106-43-4	4-Chlorotoluene	45.0	50.0	90.1	60-140
98-06-6	tert-Butylbenzene	44.3	50.0	88.5	60-140
95-63-6	1,2,4-Trimethylbenzene	41.9	50.0	83.9	60-140
135-98-8	sec-Butylbenzene	42.3	50.0	84.5	60-140
99-87-6	p-Isopropyltoluene	46.0	50.0	91.9	60-140
541-73-1	1,3-Dichlorobenzene	44.2	50.0	88.4	60-140
106-46-7	1,4-Dichlorobenzene	44.7	50.0	89.3	60-140
104-51-8	n-Butylbenzene	47.7	50.0	95.4	60-140
95-50-1	1,2-Dichlorobenzene	45.6	50.0	91.2	60-140
96-12-8	1,2-Dibromo-3-chloropropane	79.1	50.0	158 *	60-140
120-82-1	1,2,4-Trichlorobenzene	53.6	50.0	107	60-140
87-68-3	Hexachlorobutadiene	50.7	50.0	101	60-140
91-20-3	Naphthalene	78.6	50.0	157 *	60-140
87-61-6	1,2,3-Trichlorobenzene	57.8	50.0	116	60-140

*: Indicates the value is outside control limits.

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	106.	80-120	80-120	50.0
1,2-Dichloroethane-d4	108.	70-121	70-121	50.0
Toluene-d8	95.2	81-117	81-117	50.0
4-Bromofluorobenzene	82.0	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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DEPARTMENT OF THE ARMY
Corps of Engineers
Chemistry Quality Assurance Branch

VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: 09272000-TB3
Sample ID: M000997-001
Batch ID: WG6601
Method: EPA 8260
Analyst: Leuschen

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Analyzed: 09/29/00
Date Reported: 12/15/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	0.6 J	2.0	0.5
75-15-0	Carbon Disulfide	u	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25	10
594-20-7	2,2-Dichloropropane	u	10	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
J: Estimated Concentration below laboratory reporting limit.

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DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: 09272000-TB3
Sample ID: M000997-001
Batch ID: WG6601
Method: EPA 8260
Analyst: Leuschen

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Analyzed: 09/29/00
Date Reported: 12/15/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1
95-49-8	2-Chlorotoluene	u	5.0	1
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5.0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10	2
120-82-1	1,2,4-Trichlorobenzene	u	25	10
87-68-3	Hexachlorobutadiene	u	25	10
91-20-3	Naphthalene	u	25	10
87-61-6	1,2,3-Trichlorobenzene	u	25	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	101.	80-120	80-120	50.0
1,2-Dichloroethane-d4	104.	76-114	76-114	50.0
Toluene-d8	100.	88-110	88-110	50.0
4-Bromofluorobenzene	114.	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6601-1	Laboratory Control Sample:	WG6601-2
Laboratory Matrix Duplicate:	WG6601-3	Dilution:	NA
Matrix Spike:	WG6601-4	Dilution:	NA
Matrix Spike Duplicate:	WG6601-5		

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DEPARTMENT OF THE ARMY
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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB3012
Sample ID: M000997-003
Batch ID: WG6601
Method: EPA 8260
Analyst: Leuschen

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Analyzed: 09/29/00
Date Reported: 12/15/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	u	2.0	0.5
75-15-0	Carbon Disulfide	u	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25	10
594-20-7	2,2-Dichloropropane	u	10	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

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DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB3012
Sample ID: M000997-003
Batch ID: WG6601
Method: EPA 8260
Analyst: Leuschen

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Analyzed: 09/29/00
Date Reported: 12/15/00

Matrix: Water
Units: ug/L
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
95-49-8	2-Chlorotoluene	u	5.0	1
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5.0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10	2
120-82-1	1,2,4-Trichlorobenzene	u	25	10
87-68-3	Hexachlorobutadiene	u	25	10
91-20-3	Naphthalene	u	25	10
87-61-6	1,2,3-Trichlorobenzene	u	25	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	102.	80-120	80-120	50.0
1,2-Dichloroethane-d4	103.	76-114	76-114	50.0
Toluene-d8	99.5	88-110	88-110	50.0
4-Bromofluorobenzene	112.	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6601-1	Laboratory Control Sample:	WG6601-2
Laboratory Matrix Duplicate:	WG6601-3	Dilution:	NA
Matrix Spike:	WG6601-4	Dilution:	NA
Matrix Spike Duplicate:	WG6601-5		

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DEPARTMENT OF THE ARMY
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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/28/00 Matrix: Water
Method Blank ID: WG6601-1 Date Reported: 12/15/00 Units: ug/L
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	5.0	1
74-87-3	Chloromethane	u	2.0	0.5
75-01-4	Vinyl Chloride	u	2.0	0.5
74-83-9	Bromomethane	u	2.0	0.5
75-00-3	Chloroethane	u	2.0	0.5
75-69-4	Trichlorofluoromethane	u	5.0	1
67-64-1	Acetone	u	25.	10
75-35-4	1,1-Dichloroethene	u	2.0	0.5
75-09-2	Methylene Chloride	u	2.0	0.5
75-15-0	Carbon Disulfide	u	2.0	0.5
156-60-5	trans-1,2-Dichloroethene	u	2.0	0.5
108-05-4	Vinyl Acetate	u	50.	10
75-34-3	1,1-Dichloroethane	u	2.0	0.5
78-93-3	2-Butanone	u	25.	10
594-20-7	2,2-Dichloropropane	u	10.	2
156-59-2	cis-1,2-Dichloroethene	u	2.0	0.5
67-66-3	Chloroform	u	2.0	0.5
74-97-5	Bromochloromethane	u	5.0	1
71-55-6	1,1,1-Trichloroethane	u	2.0	0.5
563-58-6	1,1-Dichloropropene	u	5.0	1
56-23-5	Carbon Tetrachloride	u	2.0	0.5
107-06-2	1,2-Dichloroethane	u	2.0	0.5
71-43-2	Benzene	u	2.0	0.5
79-01-6	Trichloroethene	u	2.0	0.5
78-87-5	1,2-Dichloropropane	u	2.0	0.5
75-27-4	Bromodichloromethane	u	2.0	0.5
74-95-3	Dibromomethane	u	5.0	1
108-10-1	4-Methyl-2-pentanone	u	25.	10
10061-01-5	cis-1,3-Dichloropropene	u	2.0	0.5
108-88-3	Toluene	u	2.0	0.5
10061-02-6	trans-1,3-Dichloropropene	u	2.0	0.5
591-78-6	2-Hexanone	u	25.	10
79-00-5	1,1,2-Trichloroethane	u	2.0	0.5
142-28-9	1,3-Dichloropropane	u	5.0	1
127-18-4	Tetrachloroethene	u	2.0	0.5
124-48-1	Dibromochloromethane	u	2.0	0.5
106-93-4	1,2-Dibromoethane	u	5.0	1
108-90-7	Chlorobenzene	u	2.0	0.5
100-41-4	Ethylbenzene	u	2.0	0.5
630-20-6	1,1,1,2-Tetrachloroethane	u	5.0	1
1330-20-7B	meta-/para-Xylenes	u	2.0	0.5
95-47-6	ortho-Xylene	u	2.0	0.5
100-42-5	Styrene	u	2.0	0.5
98-92-8	Isopropylbenzene	u	5.0	1
75-25-2	Bromoform	u	2.0	0.5
79-34-5	1,1,2,2-Tetrachloroethane	u	2.0	1
96-18-4	1,2,3-Trichloropropane	u	5.0	1
103-65-1	n-Propylbenzene	u	5.0	1
108-86-1	Bromobenzene	u	5.0	1
108-67-8	1,3,5-Trimethylbenzene	u	5.0	1
95-49-8	2-Chlorotoluene	u	5.0	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

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DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/28/00 Matrix: Water
Method Blank ID: WG6601-1 Date Reported: 12/15/00 Units: ug/L
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
106-43-4	4-Chlorotoluene	u	5.0	1
98-06-6	tert-Butylbenzene	u	5.0	1
95-63-6	1,2,4-Trimethylbenzene	u	5.0	1
135-98-8	sec-Butylbenzene	u	5.0	1
99-87-6	p-Isopropyltoluene	u	5.0	1
541-73-1	1,3-Dichlorobenzene	u	5.0	1
106-46-7	1,4-Dichlorobenzene	u	5.0	1
104-51-8	n-Butylbenzene	u	5.0	1
95-50-1	1,2-Dichlorobenzene	u	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	u	10.	2
120-82-1	1,2,4-Trichlorobenzene	u	25.	10
87-68-3	Hexachlorobutadiene	u	25.	10
91-20-3	Naphthalene	u	25.	10
87-61-6	1,2,3-Trichlorobenzene	u	25.	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	91.7	80-120	80-120	50.0
1,2-Dichloroethane-d4	104.	76-114	76-114	50.0
Toluene-d8	93.0	88-110	88-110	50.0
4-Bromofluorobenzene	114.	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: Batch Specific
Sample ID: M000993-002
Lab Duplicate ID: WG6601-3
Method: EPA 8260

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Analyzed: 09/28/00
Date Reported: 12/15/00

Matrix: Water
Units: ug/L
Analyst: Leuschen

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
75-71-8	Dichlorodifluoromethane	u	u	NC	25	5
74-87-3	Chloromethane	u	u	NC	25	2
75-01-4	Vinyl Chloride	u	u	NC	25	2
74-83-9	Bromomethane	u	u	NC	25	2
75-00-3	Chloroethane	u	u	NC	25	2
75-69-4	Trichlorofluoromethane	u	u	NC	25	5
67-64-1	Acetone	u	u	NC	25	25
75-35-4	1,1-Dichloroethene	u	u	NC	25	2
75-09-2	Methylene Chloride	u	u	NC	25	2
75-15-0	Carbon Disulfide	u	u	NC	25	2
156-60-5	trans-1,2-Dichloroethene	u	u	NC	25	2
108-05-4	Vinyl Acetate	u	u	NC	25	50
75-34-3	1,1-Dichloroethane	u	u	NC	25	2
78-93-3	2-Butanone	u	u	NC	25	25
594-20-7	2,2-Dichloropropane	u	u	NC	25	10
156-59-2	cis-1,2-Dichloroethene	u	u	NC	25	2
67-66-3	Chloroform	u	u	NC	25	2
74-97-5	Bromochloromethane	u	u	NC	25	5
71-55-6	1,1,1-Trichloroethane	u	u	NC	25	2
563-58-6	1,1-Dichloropropene	u	u	NC	25	5
56-23-5	Carbon Tetrachloride	u	u	NC	25	2
107-06-2	1,2-Dichloroethane	u	u	NC	25	2
71-43-2	Benzene	11.3	10.9	3.1	25	2
79-01-6	Trichloroethene	u	u	NC	25	2
78-87-5	1,2-Dichloropropane	u	u	NC	25	2
75-27-4	Bromodichloromethane	u	u	NC	25	2
74-95-3	Dibromomethane	u	u	NC	25	5
108-10-1	4-Methyl-2-pentanone	u	u	NC	25	25
10061-01-5	cis-1,3-Dichloropropene	u	u	NC	25	2
108-88-3	Toluene	u	u	NC	25	2
10061-02-6	trans-1,3-Dichloropropene	u	u	NC	25	2
591-78-6	2-Hexanone	u	u	NC	25	25
79-00-5	1,1,2-Trichloroethane	u	u	NC	25	2
142-28-9	1,3-Dichloropropane	u	u	NC	25	5
127-18-4	Tetrachloroethene	u	u	NC	25	2
124-48-1	Dibromochloromethane	u	u	NC	25	2
106-93-4	1,2-Dibromoethane	u	u	NC	25	5
108-90-7	Chlorobenzene	u	u	NC	25	2
100-41-4	Ethylbenzene	16.5	15.4	6.4	25	2
630-20-6	1,1,1,2-Tetrachloroethane	u	u	NC	25	5
1330-20-7B	meta-/para-Xylenes	0.9 J	u	NC	25	2
95-47-6	ortho-Xylene	u	u	NC	25	2
100-42-5	Styrene	u	u	NC	25	2
98-92-8	Isopropylbenzene	10.7	9.7	9.4	25	5
75-25-2	Bromoform	u	u	NC	25	2
79-34-5	1,1,2,2-Tetrachloroethane	u	u	NC	25	2
96-18-4	1,2,3-Trichloropropane	u	u	NC	25	5
103-65-1	n-Propylbenzene	8.7	8.0	8.1	25	5
108-86-1	Bromobenzene	u	u	NC	25	5

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
Batch Specific: The sample used for batch QC was from another project within this work group.
J: Estimated Concentration below laboratory reporting limit.

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DEPARTMENT OF THE ARMY
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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: Batch Specific
Sample ID: M000993-002
Lab Duplicate ID: WG6601-3
Method: EPA 8260

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Analyzed: 09/28/00
Date Reported: 12/15/00

Matrix: Water
Units: ug/L
Analyst: Leuschen

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
108-67-8	1,3,5-Trimethylbenzene	u	u	NC	25	5
95-49-8	2-Chlorotoluene	u	u	NC	25	5
106-43-4	4-Chlorotoluene	u	u	NC	25	5
98-06-6	tert-Butylbenzene	4.3 J	4.1 J	4.3	25	5
95-63-6	1,2,4-Trimethylbenzene	3.2 J	3.1 J	2.5	25	5
135-98-8	sec-Butylbenzene	3.5 J	3.2 J	6.3	25	5
99-87-6	p-Isopropyltoluene	u	u	NC	25	5
541-73-1	1,3-Dichlorobenzene	u	u	NC	25	5
106-46-7	1,4-Dichlorobenzene	u	u	NC	25	5
104-51-8	n-Butylbenzene	2.5 J	2.4 J	4.5	25	5
95-50-1	1,2-Dichlorobenzene	u	u	NC	25	5
96-12-8	1,2-Dibromo-3-chloropropane	u	u	NC	25	10
120-82-1	1,2,4-Trichlorobenzene	u	u	NC	25	25
87-68-3	Hexachlorobutadiene	u	u	NC	25	25
91-20-3	Naphthalene	76.1	77.3	1.4	25	25
87-61-6	1,2,3-Trichlorobenzene	u	u	NC	25	25

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
Batch Specific: The sample used for batch QC was from another project within this work group.
J: Estimated Concentration below laboratory reporting limit.

Method Quality Control

Surrogate Standard Name	Added (ug/L)	Sample (ug/L)	Sample Rec (%)	Dup (ug/L)	Dup Rec (%)	CQAB Lab Performanc Range	Method 8260 Acceptance Range	RPD (%)	CQAB Lab Performance Range
Dibromofluoromethane	50.0	46.9	93.8	49.8	99.5	80-120	80-120	5.9	25
1,2-Dichloroethane-d4	50.0	51.6	103.	53.3	107.	76-114	76-114	3.2	25
Toluene-d8	50.0	45.1	90.2	45.6	91.3	88-110	88-110	1.2	25
4-Bromofluorobenzene	50.0	55.9	112.	56.1	112.	86-115	86-115	0.30	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/28/00 Matrix: Water
Sample ID: M000993-002 Batch Specific Date Reported: 12/15/00 Units: ug/L
MS Sample ID: WG6601-4
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	Sample Result	MS Conc	MS %Rec	QC Limits	MSD Conc	MSD %Rec	RPD (%)	QC Limits
75-71-8	Dichlorodifluoromethane	u	91.9	91.9	60-140	83.4	83.4	9.7	25
74-87-3	Chloromethane	u	122	122	60-140	111	111	9.4	25
75-01-4	Vinyl Chloride	u	122	122	60-140	112	112	8.5	25
74-83-9	Bromomethane	u	71.1	71.1	60-140	64.9	64.9	9.1	25
75-00-3	Chloroethane	u	81.8	81.8	60-140	77.7	77.7	5.1	25
75-69-4	Trichlorofluoromethane	u	109	109	60-140	103	103	5.7	25
67-64-1	Acetone	u	96.0	91.0	60-140	95.8	90.8	0.2	25
75-35-4	1,1-Dichloroethene	u	122	122	61-145	116	116	5.0	25
75-09-2	Methylene Chloride	u	108	108	70-130	104	104	3.8	25
75-15-0	Carbon Disulfide	u	105	105	70-130	99.1	98.8	5.8	25
156-60-5	trans-1,2-Dichloroethene	u	117	117	70-130	114	114	2.6	25
108-05-4	Vinyl Acetate	u	111	111	60-140	112	112	0.9	25
75-34-3	1,1-Dichloroethane	u	103	103	70-130	99.7	99.7	3.3	25
78-93-3	2-Butanone	u	99.9	98.9	60-140	101	100	1.1	25
594-20-7	2,2-Dichloropropane	u	115	115	70-130	109	109	5.4	25
156-59-2	cis-1,2-Dichloroethene	u	115	115	70-130	110	110	4.4	25
67-66-3	Chloroform	u	105	105	70-130	101	101	3.9	25
74-97-5	Bromochloromethane	u	110	110	70-130	106	106	3.7	25
71-55-6	1,1,1-Trichloroethane	u	108	108	70-130	103	103	4.7	25
563-58-6	1,1-Dichloropropene	u	114	114	70-130	110	110	3.6	25
56-23-5	Carbon Tetrachloride	u	102	102	70-130	96.8	96.8	5.2	25
107-06-2	1,2-Dichloroethane	u	99.5	99.2	70-130	97.7	97.4	1.8	25
71-43-2	Benzene	11.3	110	98.7	76-127	106	94.7	4.1	25
79-01-6	Trichloroethene	u	110	110	71-120	108	108	1.8	25
78-87-5	1,2-Dichloropropane	u	99.1	99.1	70-130	97.3	97.3	1.8	25
75-27-4	Bromodichloromethane	u	104	104	70-130	98.6	98.6	5.3	25
74-95-3	Dibromomethane	u	106	106	70-130	105	105	0.9	25
108-10-1	4-Methyl-2-pentanone	u	112	112	60-140	120	120	6.9	25
10061-01-5	cis-1,3-Dichloropropene	u	110	110	70-130	107	107	2.8	25
108-88-3	Toluene	u	117	117	76-125	106	106	9.9	25
10061-02-6	trans-1,3-Dichloropropene	u	97.4	97.4	60-140	91.5	91.5	6.2	25
591-78-6	2-Hexanone	u	103	103	70-130	106	106	2.9	25
79-00-5	1,1,2-Trichloroethane	u	113	113	70-130	108	108	4.5	25
142-28-9	1,3-Dichloropropane	u	107	107	70-130	104	104	2.8	25
127-18-4	Tetrachloroethene	u	117	117	70-130	111	111	5.3	25
124-48-1	Dibromochloromethane	u	104	104	70-130	99.7	99.7	4.2	25
106-93-4	1,2-Dibromoethane	u	115	115	70-130	112	112	2.6	25
108-90-7	Chlorobenzene	u	102	102	75-130	99.1	99.1	2.9	25
100-41-4	Ethylbenzene	16.5	115	98.5	70-130	108	91.5	7.4	25
630-20-6	1,1,1,2-Tetrachloroethane	u	98.9	98.9	70-130	92.6	92.6	6.6	25
1330-20-7B	meta-/para-Xylenes	0.9 J	211	105	70-130	195	97.0	7.9	25
95-47-6	ortho-Xylene	u	104	104	70-130	96.9	96.9	7.1	25
100-42-5	Styrene	u	103	103	70-130	95.9	95.9	7.1	25
98-92-8	Isopropylbenzene	10.7	108	97.3	70-130	101	90.3	7.5	25
75-25-2	Bromoform	u	107	107	70-130	103	103	3.8	25
79-34-5	1,1,2,2-Tetrachloroethane	u	118	118	70-130	122	122	3.3	25
96-18-4	1,2,3-Trichloropropane	u	116	116	70-130	120	120	3.4	25
103-65-1	n-Propylbenzene	8.7	114	105	70-130	112	103	1.9	25
108-86-1	Bromobenzene	u	120	120	70-130	119	119	0.8	25
108-67-8	1,3,5-Trimethylbenzene	u	120	120	70-130	114	114	5.1	25

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
Batch Specific: The sample used for batch QC was from another project within this work group.
%Rec: Percent of the spike recovered from the matrix
J: Estimated Concentration below laboratory reporting limit.

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VOA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/28/00 Matrix: Water
Sample ID: M000993-002 Batch Specific Date Reported: 12/15/00 Units: ug/L
MS Sample ID: WG6601-4
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	Sample Result	MS Conc	MS %Rec	QC Limits	MSD Conc	MSD %Rec	RPD (%)	QC Limits
95-49-8	2-Chlorotoluene	u	118	118	70-130	114	114	3.4	25
106-43-4	4-Chlorotoluene	u	122	122	70-130	115	115	5.9	25
98-06-6	tert-Butylbenzene	4.3 J	106	102	70-130	102	97.7	4.0	25
95-63-6	1,2,4-Trimethylbenzene	3.2 J	106	103	70-130	104	101	2.0	25
135-98-8	sec-Butylbenzene	3.5 J	107	104	70-130	105	102	2.0	25
99-87-6	p-Isopropyltoluene	u	108	108	70-130	105	105	2.8	25
541-73-1	1,3-Dichlorobenzene	u	114	114	70-130	112	112	1.8	25
106-46-7	1,4-Dichlorobenzene	u	97.6	97.5	70-130	95.4	95.3	2.3	25
104-51-8	n-Butylbenzene	2.5 J	104	101	70-130	101	98.5	3.0	25
95-50-1	1,2-Dichlorobenzene	u	104	104	70-130	103	103	1.0	25
96-12-8	1,2-Dibromo-3-chloropropane	u	131	131 *	70-130	136	136 *	3.7	25
120-82-1	1,2,4-Trichlorobenzene	u	119	119	70-130	118	118	0.8	25
87-68-3	Hexachlorobutadiene	u	111	111	70-130	105	105	5.6	25
91-20-3	Naphthalene	76.1	194	118	70-130	199	123	4.2	25
87-61-6	1,2,3-Trichlorobenzene	u	125	125	70-130	127	127	1.6	25

%Rec: Percent of the spike recovered from the matrix
u: Below Sample Detection Limit (SDL >= MDL x Dilution)
Batch Specific: The sample used for batch QC was from another project within this work group.
J: Estimated Concentration below laboratory reporting limit.
*: Indicates the value is outside control limits.

Method Quality Control

Surrogate Standard Name	Added (ug/L)	MS (ug/L)	MS Rec (%)	MSD (ug/L)	MSD Rec (%)	CQAB Lab %Rec Limits	Method 8260 Acceptance Range	RPD (%)	CQAB Lab RPD Limits
Dibromofluoromethane	50.0	46.7	93.5	45.6	91.2	80-120	80-120	2.5	25
1,2-Dichloroethane-d4	50.0	51.1	102.	50.6	101.	76-114	76-114	1.	25
Toluene-d8	50.0	48.6	97.3	46.9	93.8	88-110	88-110	3.6	25
4-Bromofluorobenzene	50.0	55.1	110.	55.8	112.	86-115	86-115	1.2	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/28/00 Matrix: Water
LCS ID: WG6601-2 Date Reported: 12/15/00 Units: ug/L
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
75-71-8	Dichlorodifluoromethane	95.1	100	95.1	60-140
74-87-3	Chloromethane	125	100	125	60-140
75-01-4	Vinyl Chloride	116	100	116	60-140
74-83-9	Bromomethane	75.0	100	75.0	60-140
75-00-3	Chloroethane	85.8	100	85.8	60-140
75-69-4	Trichlorofluoromethane	103	100	103	60-140
67-64-1	Acetone	102	100	102	60-140
75-35-4	1,1-Dichloroethene	115	100	115	61-145
75-09-2	Methylene Chloride	109	100	109	70-130
75-15-0	Carbon Disulfide	98.8	100	98.8	70-130
156-60-5	trans-1,2-Dichloroethene	113	100	113	70-130
108-05-4	Vinyl Acetate	111	100	111	60-140
75-34-3	1,1-Dichloroethane	102	100	102	70-130
78-93-3	2-Butanone	103	100	103	60-140
594-20-7	2,2-Dichloropropane	107	100	107	70-130
156-59-2	cis-1,2-Dichloroethene	113	100	113	70-130
67-66-3	Chloroform	105	100	105	70-130
74-97-5	Bromochloromethane	112	100	112	70-130
71-55-6	1,1,1-Trichloroethane	102	100	102	70-130
563-58-6	1,1-Dichloropropene	107	100	107	70-130
56-23-5	Carbon Tetrachloride	95.4	100	95.4	70-130
107-06-2	1,2-Dichloroethane	102	100	102	70-130
71-43-2	Benzene	104	100	104	76-127
79-01-6	Trichloroethene	105	100	105	71-120
78-87-5	1,2-Dichloropropane	99.1	100	99.1	70-130
75-27-4	Bromodichloromethane	105	100	105	70-130
74-95-3	Dibromomethane	109	100	109	70-130
108-10-1	4-Methyl-2-pentanone	109	100	109	60-140
10061-01-5	cis-1,3-Dichloropropene	108	100	108	70-130
108-88-3	Toluene	109	100	109	76-125
10061-02-6	trans-1,3-Dichloropropene	96.2	100	96.2	60-140
591-78-6	2-Hexanone	97.1	100	97.1	70-130
79-00-5	1,1,2-Trichloroethane	115	100	115	70-130
142-28-9	1,3-Dichloropropane	109	100	109	70-130
127-18-4	Tetrachloroethene	106	100	106	70-130
124-48-1	Dibromochloromethane	107	100	107	70-130
106-93-4	1,2-Dibromoethane	117	100	117	70-130
108-90-7	Chlorobenzene	102	100	102	75-130
100-41-4	Ethylbenzene	101	100	101	70-130
630-20-6	1,1,1,2-Tetrachloroethane	97.1	100	97.1	70-130
1330-20-7B	meta-/para-Xylenes	201	200	101	70-130
95-47-6	ortho-Xylene	99.8	100	99.8	70-130
100-42-5	Styrene	99.4	100	99.4	70-130
98-92-8	Isopropylbenzene	94.3	100	94.3	70-130
75-25-2	Bromoform	109	100	109	70-130
79-34-5	1,1,2,2-Tetrachloroethane	116	100	116	70-130
96-18-4	1,2,3-Trichloropropane	117	100	117	70-130
103-65-1	n-Propylbenzene	102	100	102	70-130
108-86-1	Bromobenzene	115	100	115	70-130
108-67-8	1,3,5-Trimethylbenzene	113	100	113	70-130
95-49-8	2-Chlorotoluene	112	100	112	70-130
106-43-4	4-Chlorotoluene	115	100	115	70-130
98-06-6	tert-Butylbenzene	98.8	100	98.8	70-130
95-63-6	1,2,4-Trimethylbenzene	104	100	104	70-130
135-98-8	sec-Butylbenzene	101	100	101	70-130

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/28/00 Matrix: Water
LCS ID: WG6601-2 Date Reported: 12/15/00 Units: ug/L
Method: EPA 8260
Analyst: Leuschen

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
99-87-6	p-Isopropyltoluene	104	100	104	70-130
541-73-1	1,3-Dichlorobenzene	112	100	112	70-130
106-46-7	1,4-Dichlorobenzene	96.9	100	96.9	70-130
104-51-8	n-Butylbenzene	98.8	100	98.8	70-130
95-50-1	1,2-Dichlorobenzene	102	100	102	70-130
96-12-8	1,2-Dibromo-3-chloropropane	122	100	122	70-130
120-82-1	1,2,4-Trichlorobenzene	107	100	107	70-130
87-68-3	Hexachlorobutadiene	100	100	100	70-130
91-20-3	Naphthalene	129	100	129	70-130
87-61-6	1,2,3-Trichlorobenzene	111	100	111	70-130

Method Quality Control

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/L)
Dibromofluoromethane	95.6	80-120	80-120	50.0
1,2-Dichloroethane-d4	104.	76-114	76-114	50.0
Toluene-d8	96.0	88-110	88-110	50.0
4-Bromofluorobenzene	107.	86-115	86-115	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0428
Sample ID: M000997-004
Batch ID: WG6591
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Analyzed: 09/28/00
Date Reported: 10/02/00

Matrix: Soil
Units: ug/kg
% Solids: 76.7
Dilution: 1.1

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	14	1
74-87-3	Chloromethane	u	6.9	1
75-01-4	Vinyl Chloride	u	6.9	1
74-83-9	Bromomethane	u	6.9	1
75-00-3	Chloroethane	u	14	1
75-69-4	Trichlorofluoromethane	u	6.9	1
67-64-1	Acetone	u	69	20
75-35-4	1,1-Dichloroethene	u	6.9	1
75-09-2	Methylene Chloride	u	6.9	1
75-15-0	Carbon Disulfide	u	6.9	1
156-60-5	trans-1,2-Dichloroethene	u	6.9	1
108-05-4	Vinyl Acetate	u	69	10
75-34-3	1,1-Dichloroethane	u	6.9	1
78-93-3	2-Butanone	u	69	20
594-20-7	2,2-Dichloropropane	u	6.9	1
156-59-2	cis-1,2-Dichloroethene	u	6.9	1
67-66-3	Chloroform	u	6.9	1
74-97-5	Bromochloromethane	u	6.9	1
71-55-6	1,1,1-Trichloroethane	u	6.9	1
563-58-6	1,1-Dichloropropene	u	6.9	1
56-23-5	Carbon Tetrachloride	u	6.9	1
107-06-2	1,2-Dichloroethane	u	6.9	1
71-43-2	Benzene	u	6.9	1
79-01-6	Trichloroethene	u	6.9	1
78-87-5	1,2-Dichloropropane	u	6.9	1
75-27-4	Bromodichloromethane	u	6.9	1
74-95-3	Dibromomethane	u	6.9	1
108-10-1	4-Methyl-2-pentanone	u	69	20
10061-01-5	cis-1,3-Dichloropropene	u	6.9	1
108-88-3	Toluene	u	6.9	1
10061-02-6	trans-1,3-Dichloropropene	u	6.9	1
591-78-6	2-Hexanone	u	69	20
79-00-5	1,1,2-Trichloroethane	u	6.9	1
142-28-9	1,3-Dichloropropane	u	6.9	1
127-18-4	Tetrachloroethene	u	6.9	1
124-48-1	Dibromochloromethane	u	6.9	1
106-93-4	1,2-Dibromoethane	u	6.9	1
108-90-7	Chlorobenzene	u	6.9	1
100-41-4	Ethylbenzene	u	6.9	1
630-20-6	1,1,1,2-Tetrachloroethane	u	6.9	1
1330-20-7B	meta-/para-Xylenes	u	6.9	1
95-47-6	ortho-Xylene	u	6.9	1
100-42-5	Styrene	u	6.9	1
98-92-8	Isopropylbenzene	u	6.9	1
75-25-2	Bromoform	u	6.9	1
79-34-5	1,1,2,2-Tetrachloroethane	u	6.9	1
96-18-4	1,2,3-Trichloropropane	u	6.9	1
103-65-1	n-Propylbenzene	u	6.9	1
108-86-1	Bromobenzene	u	6.9	1
108-67-8	1,3,5-Trimethylbenzene	u	6.9	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

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VOA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/27/00	Matrix:	Soil
Client Sample ID:	AB0428	Date Received:	09/28/00	Units:	ug/kg
Sample ID:	M000997-004	Date Analyzed:	09/28/00	% Solids:	76.7
Batch ID:	WG6591	Date Reported:	10/02/00	Dilution:	1.1
Method:	EPA 8260				
Analyst:	Robert Williams				

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
95-49-8	2-Chlorotoluene	u	6.9	1
106-43-4	4-Chlorotoluene	u	6.9	1
98-06-6	tert-Butylbenzene	u	6.9	1
95-63-6	1,2,4-Trimethylbenzene	u	6.9	1
135-98-8	sec-Butylbenzene	u	6.9	1
99-87-6	p-Isopropyltoluene	u	6.9	1
541-73-1	1,3-Dichlorobenzene	u	6.9	1
106-46-7	1,4-Dichlorobenzene	u	6.9	1
104-51-8	n-Butylbenzene	u	6.9	1
95-50-1	1,2-Dichlorobenzene	u	6.9	1
96-12-8	1,2-Dibromo-3-chloropropane	u	35	6
120-82-1	1,2,4-Trichlorobenzene	u	35	10
87-68-3	Hexachlorobutadiene	u	35	10
91-20-3	Naphthalene	u	35	10
87-61-6	1,2,3-Trichlorobenzene	u	35	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	117.	80-120	80-120	50.0
1,2-Dichloroethane-d4	106.	70-121	70-121	50.0
Toluene-d8	103.	81-117	81-117	50.0
4-Bromofluorobenzene	95.8	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6591-1	Laboratory Control Sample:	WG6591-2
Laboratory Matrix Duplicate:	WG6591-3	Dilution:	NA
Matrix Spike:	WG6591-4	Dilution:	NA
Matrix Spike Duplicate:	WG6591-5		

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0450
Sample ID: M000997-005
Batch ID: WG6591
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Analyzed: 09/28/00
Date Reported: 10/02/00

Matrix: Soil
Units: ug/kg
% Solids: 87.4
Dilution: 0.9

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	11	0.9
74-87-3	Chloromethane	u	5.3	0.9
75-01-4	Vinyl Chloride	u	5.3	0.9
74-83-9	Bromomethane	u	5.3	0.9
75-00-3	Chloroethane	u	11	0.9
75-69-4	Trichlorofluoromethane	u	5.3	0.9
67-64-1	Acetone	u	53	20
75-35-4	1,1-Dichloroethene	u	5.3	0.9
75-09-2	Methylene Chloride	1.7 J	5.3	0.9
75-15-0	Carbon Disulfide	u	5.3	0.9
156-60-5	trans-1,2-Dichloroethene	u	5.3	0.9
108-05-4	Vinyl Acetate	u	53	9
75-34-3	1,1-Dichloroethane	u	5.3	0.9
78-93-3	2-Butanone	u	53	20
594-20-7	2,2-Dichloropropane	u	5.3	0.9
156-59-2	cis-1,2-Dichloroethene	u	5.3	0.9
67-66-3	Chloroform	u	5.3	0.9
74-97-5	Bromochloromethane	u	5.3	0.9
71-55-6	1,1,1-Trichloroethane	u	5.3	0.9
563-58-6	1,1-Dichloropropene	u	5.3	0.9
56-23-5	Carbon Tetrachloride	u	5.3	0.9
107-06-2	1,2-Dichloroethane	u	5.3	0.9
71-43-2	Benzene	u	5.3	0.9
79-01-6	Trichloroethene	u	5.3	0.9
78-87-5	1,2-Dichloropropane	u	5.3	0.9
75-27-4	Bromodichloromethane	u	5.3	0.9
74-95-3	Dibromomethane	u	5.3	0.9
108-10-1	4-Methyl-2-pentanone	u	53	20
10061-01-5	cis-1,3-Dichloropropene	u	5.3	0.9
108-88-3	Toluene	u	5.3	0.9
10061-02-6	trans-1,3-Dichloropropene	u	5.3	0.9
591-78-6	2-Hexanone	u	53	20
79-00-5	1,1,2-Trichloroethane	u	5.3	0.9
142-28-9	1,3-Dichloropropane	u	5.3	0.9
127-18-4	Tetrachloroethene	u	5.3	0.9
124-48-1	Dibromochloromethane	u	5.3	0.9
106-93-4	1,2-Dibromoethane	u	5.3	0.9
108-90-7	Chlorobenzene	u	5.3	0.9
100-41-4	Ethylbenzene	u	5.3	0.9
630-20-6	1,1,1,2-Tetrachloroethane	u	5.3	0.9
1330-20-7B	meta-/para-Xylenes	u	5.3	0.9
95-47-6	ortho-Xylene	u	5.3	0.9
100-42-5	Styrene	u	5.3	0.9
98-92-8	Isopropylbenzene	u	5.3	0.9
75-25-2	Bromoform	u	5.3	0.9
79-34-5	1,1,2,2-Tetrachloroethane	u	5.3	0.9
96-18-4	1,2,3-Trichloropropane	u	5.3	0.9
103-65-1	n-Propylbenzene	u	5.3	0.9
108-86-1	Bromobenzene	u	5.3	0.9

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
J: Estimated Concentration below laboratory reporting limit.

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0450
Sample ID: M000997-005
Batch ID: WG6591
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Analyzed: 09/28/00
Date Reported: 10/02/00

Matrix: Soil
Units: ug/kg
% Solids: 87.4
Dilution: 0.9

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
108-67-8	1,3,5-Trimethylbenzene	u	5.3	0.9
95-49-8	2-Chlorotoluene	u	5.3	0.9
106-43-4	4-Chlorotoluene	u	5.3	0.9
98-06-6	tert-Butylbenzene	u	5.3	0.9
95-63-6	1,2,4-Trimethylbenzene	u	5.3	0.9
135-98-8	sec-Butylbenzene	u	5.3	0.9
99-87-6	p-Isopropyltoluene	u	5.3	0.9
541-73-1	1,3-Dichlorobenzene	u	5.3	0.9
106-46-7	1,4-Dichlorobenzene	u	5.3	0.9
104-51-8	n-Butylbenzene	u	5.3	0.9
95-50-1	1,2-Dichlorobenzene	u	5.3	0.9
96-12-8	1,2-Dibromo-3-chloropropane	u	26	5
120-82-1	1,2,4-Trichlorobenzene	u	26	9
87-68-3	Hexachlorobutadiene	u	26	9
91-20-3	Naphthalene	u	26	9
87-61-6	1,2,3-Trichlorobenzene	u	26	9

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	110.	80-120	80-120	50.0
1,2-Dichloroethane-d4	107.	70-121	70-121	50.0
Toluene-d8	98.2	81-117	81-117	50.0
4-Bromofluorobenzene	93.7	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank: WG6591-1
Laboratory Matrix Duplicate: WG6591-3
Matrix Spike: WG6591-4
Matrix Spike Duplicate: WG6591-5

Laboratory Control Sample: WG6591-2
Dilution: NA
Dilution: NA

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VOA Sample Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0453
Sample ID: M000997-006
Batch ID: WG6591
Method: EPA 8260
Analyst: Robert Williams

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Analyzed: 09/28/00
Date Reported: 10/02/00

Matrix: Soil
Units: ug/kg
% Solids: 85.8
Dilution: 1.0

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	12	1
74-87-3	Chloromethane	u	6.1	1
75-01-4	Vinyl Chloride	u	6.1	1
74-83-9	Bromomethane	u	6.1	1
75-00-3	Chloroethane	u	12	1
75-69-4	Trichlorofluoromethane	u	6.1	1
67-64-1	Acetone	u	61	20
75-35-4	1,1-Dichloroethene	u	6.1	1
75-09-2	Methylene Chloride	3.1 J	6.1	1
75-15-0	Carbon Disulfide	u	6.1	1
156-60-5	trans-1,2-Dichloroethene	u	6.1	1
108-05-4	Vinyl Acetate	u	61	10
75-34-3	1,1-Dichloroethane	u	6.1	1
78-93-3	2-Butanone	u	61	20
594-20-7	2,2-Dichloropropane	u	6.1	1
156-59-2	cis-1,2-Dichloroethene	u	6.1	1
67-66-3	Chloroform	u	6.1	1
74-97-5	Bromochloromethane	u	6.1	1
71-55-6	1,1,1-Trichloroethane	u	6.1	1
563-58-6	1,1-Dichloropropene	u	6.1	1
56-23-5	Carbon Tetrachloride	u	6.1	1
107-06-2	1,2-Dichloroethane	u	6.1	1
71-43-2	Benzene	u	6.1	1
79-01-6	Trichloroethene	u	6.1	1
78-87-5	1,2-Dichloropropane	u	6.1	1
75-27-4	Bromodichloromethane	u	6.1	1
74-95-3	Dibromomethane	u	6.1	1
108-10-1	4-Methyl-2-pentanone	u	61	20
10061-01-5	cis-1,3-Dichloropropene	u	6.1	1
108-88-3	Toluene	u	6.1	1
10061-02-6	trans-1,3-Dichloropropene	u	6.1	1
591-78-6	2-Hexanone	u	61	20
79-00-5	1,1,2-Trichloroethane	u	6.1	1
142-28-9	1,3-Dichloropropane	u	6.1	1
127-18-4	Tetrachloroethene	u	6.1	1
124-48-1	Dibromochloromethane	u	6.1	1
106-93-4	1,2-Dibromoethane	u	6.1	1
108-90-7	Chlorobenzene	u	6.1	1
100-41-4	Ethylbenzene	u	6.1	1
630-20-6	1,1,1,2-Tetrachloroethane	u	6.1	1
1330-20-7B	meta-/para-Xylenes	u	6.1	1
95-47-6	ortho-Xylene	u	6.1	1
100-42-5	Styrene	u	6.1	1
98-92-8	Isopropylbenzene	u	6.1	1
75-25-2	Bromoform	u	6.1	1
79-34-5	1,1,2,2-Tetrachloroethane	u	6.1	1
96-18-4	1,2,3-Trichloropropane	u	6.1	1
103-65-1	n-Propylbenzene	u	6.1	1
108-86-1	Bromobenzene	u	6.1	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)
J: Estimated Concentration below laboratory reporting limit.

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VOA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/27/00	Matrix:	Soil
Client Sample ID:	AB0453	Date Received:	09/28/00	Units:	ug/kg
Sample ID:	M000997-006	Date Analyzed:	09/28/00	% Solids:	85.8
Batch ID:	WG6591	Date Reported:	10/02/00	Dilution:	1.0
Method:	EPA 8260				
Analyst:	Robert Williams				

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
108-67-8	1,3,5-Trimethylbenzene	u	6.1	1
95-49-8	2-Chlorotoluene	u	6.1	1
106-43-4	4-Chlorotoluene	u	6.1	1
98-06-6	tert-Butylbenzene	u	6.1	1
95-63-6	1,2,4-Trimethylbenzene	u	6.1	1
135-98-8	sec-Butylbenzene	u	6.1	1
99-87-6	p-Isopropyltoluene	u	6.1	1
541-73-1	1,3-Dichlorobenzene	u	6.1	1
106-46-7	1,4-Dichlorobenzene	u	6.1	1
104-51-8	n-Butylbenzene	u	6.1	1
95-50-1	1,2-Dichlorobenzene	u	6.1	1
96-12-8	1,2-Dibromo-3-chloropropane	u	30	5
120-82-1	1,2,4-Trichlorobenzene	u	30	10
87-68-3	Hexachlorobutadiene	u	30	10
91-20-3	Naphthalene	u	30	10
87-61-6	1,2,3-Trichlorobenzene	u	30	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	111.	80-120	80-120	50.0
1,2-Dichloroethane-d4	109.	70-121	70-121	50.0
Toluene-d8	101.	81-117	81-117	50.0
4-Bromofluorobenzene	96.4	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

Quality Assurance / Quality Control

Method Blank:	WG6591-1	Laboratory Control Sample:	WG6591-2
Laboratory Matrix Duplicate:	WG6591-3	Dilution:	NA
Matrix Spike:	WG6591-4	Dilution:	NA
Matrix Spike Duplicate:	WG6591-5		

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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/28/00 Matrix: Soil
Method Blank ID: WG6591-1 Date Reported: 10/02/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
75-71-8	Dichlorodifluoromethane	u	9.7	1
74-87-3	Chloromethane	u	4.9	1
75-01-4	Vinyl Chloride	u	4.9	1
74-83-9	Bromomethane	u	4.9	1
75-00-3	Chloroethane	u	9.7	1
75-69-4	Trichlorofluoromethane	u	4.9	1
67-64-1	Acetone	u	49.	20
75-35-4	1,1-Dichloroethene	u	4.9	1
75-09-2	Methylene Chloride	u	4.9	1
75-15-0	Carbon Disulfide	u	4.9	1
156-60-5	trans-1,2-Dichloroethene	u	4.9	1
108-05-4	Vinyl Acetate	u	49.	10
75-34-3	1,1-Dichloroethane	u	4.9	1
78-93-3	2-Butanone	u	49.	20
594-20-7	2,2-Dichloropropane	u	4.9	1
156-59-2	cis-1,2-Dichloroethene	u	4.9	1
67-66-3	Chloroform	u	4.9	1
74-97-5	Bromochloromethane	u	4.9	1
71-55-6	1,1,1-Trichloroethane	u	4.9	1
563-58-6	1,1-Dichloropropene	u	4.9	1
56-23-5	Carbon Tetrachloride	u	4.9	1
107-06-2	1,2-Dichloroethane	u	4.9	1
71-43-2	Benzene	u	4.9	1
79-01-6	Trichloroethene	u	4.9	1
78-87-5	1,2-Dichloropropane	u	4.9	1
75-27-4	Bromodichloromethane	u	4.9	1
74-95-3	Dibromomethane	u	4.9	1
108-10-1	4-Methyl-2-pentanone	u	49.	20
10061-01-5	cis-1,3-Dichloropropene	u	4.9	1
108-88-3	Toluene	u	4.9	1
10061-02-6	trans-1,3-Dichloropropene	u	4.9	1
591-78-6	2-Hexanone	u	49.	20
79-00-5	1,1,2-Trichloroethane	u	4.9	1
142-28-9	1,3-Dichloropropane	u	4.9	1
127-18-4	Tetrachloroethene	u	4.9	1
124-48-1	Dibromochloromethane	u	4.9	1
106-93-4	1,2-Dibromoethane	u	4.9	1
108-90-7	Chlorobenzene	u	4.9	1
100-41-4	Ethylbenzene	u	4.9	1
630-20-6	1,1,1,2-Tetrachloroethane	u	4.9	1
1330-20-7B	meta-/para-Xylenes	u	4.9	1
95-47-6	ortho-Xylene	u	4.9	1
100-42-5	Styrene	u	4.9	1
98-92-8	Isopropylbenzene	u	4.9	1
75-25-2	Bromoform	u	4.9	1
79-34-5	1,1,2,2-Tetrachloroethane	u	4.9	1
96-18-4	1,2,3-Trichloropropane	u	4.9	1
103-65-1	n-Propylbenzene	u	4.9	1
108-86-1	Bromobenzene	u	4.9	1
108-67-8	1,3,5-Trimethylbenzene	u	4.9	1
95-49-8	2-Chlorotoluene	u	4.9	1

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

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VOA (Method Blank) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/28/00 Matrix: Soil
Method Blank ID: WG6591-1 Date Reported: 10/02/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	Result	Sample Quant Limit	Sample Det Limit
106-43-4	4-Chlorotoluene	u	4.9	1
98-06-6	tert-Butylbenzene	u	4.9	1
95-63-6	1,2,4-Trimethylbenzene	u	4.9	1
135-98-8	sec-Butylbenzene	u	4.9	1
99-87-6	p-Isopropyltoluene	u	4.9	1
541-73-1	1,3-Dichlorobenzene	u	4.9	1
106-46-7	1,4-Dichlorobenzene	u	4.9	1
104-51-8	n-Butylbenzene	u	4.9	1
95-50-1	1,2-Dichlorobenzene	u	4.9	1
96-12-8	1,2-Dibromo-3-chloropropane	u	24.	5
120-82-1	1,2,4-Trichlorobenzene	u	24.	10
87-68-3	Hexachlorobutadiene	u	24.	10
91-20-3	Naphthalene	u	24.	10
87-61-6	1,2,3-Trichlorobenzene	u	24.	10

u: Below Sample Detection Limit (SDL >= MDL x Dilution)

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	106.	80-120	80-120	50.0
1,2-Dichloroethane-d4	106.	70-121	70-121	50.0
Toluene-d8	95.5	81-117	81-117	50.0
4-Bromofluorobenzene	84.1	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0428
Sample ID: M000997-004
Lab Duplicate ID: WG6591-3
Method: EPA 8260

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Analyzed: 09/28/00
Date Reported: 10/02/00

Matrix: Soil
Units: ug/kg
% Solids: 76.7
Analyst: Robert Williams

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
75-71-8	Dichlorodifluoromethane	u	u	NC	25	12
74-87-3	Chloromethane	u	u	NC	25	6.1
75-01-4	Vinyl Chloride	u	u	NC	25	6.1
74-83-9	Bromomethane	u	u	NC	25	6.1
75-00-3	Chloroethane	u	u	NC	25	12
75-69-4	Trichlorofluoromethane	u	u	NC	25	6.1
67-64-1	Acetone	u	u	NC	25	61
75-35-4	1,1-Dichloroethene	u	u	NC	25	6.1
75-09-2	Methylene Chloride	u	u	NC	25	6.1
75-15-0	Carbon Disulfide	u	u	NC	25	6.1
156-60-5	trans-1,2-Dichloroethene	u	u	NC	25	6.1
108-05-4	Vinyl Acetate	u	u	NC	25	61
75-34-3	1,1-Dichloroethane	u	u	NC	25	6.1
78-93-3	2-Butanone	u	u	NC	25	61
594-20-7	2,2-Dichloropropane	u	u	NC	25	6.1
156-59-2	cis-1,2-Dichloroethene	u	u	NC	25	6.1
67-66-3	Chloroform	u	u	NC	25	6.1
74-97-5	Bromochloromethane	u	u	NC	25	6.1
71-55-6	1,1,1-Trichloroethane	u	u	NC	25	6.1
563-58-6	1,1-Dichloropropene	u	u	NC	25	6.1
56-23-5	Carbon Tetrachloride	u	u	NC	25	6.1
107-06-2	1,2-Dichloroethane	u	u	NC	25	6.1
71-43-2	Benzene	u	u	NC	25	6.1
79-01-6	Trichloroethene	u	u	NC	25	6.1
78-87-5	1,2-Dichloropropane	u	u	NC	25	6.1
75-27-4	Bromodichloromethane	u	u	NC	25	6.1
74-95-3	Dibromomethane	u	u	NC	25	6.1
108-10-1	4-Methyl-2-pentanone	u	u	NC	25	61
10061-01-5	cis-1,3-Dichloropropene	u	u	NC	25	6.1
108-88-3	Toluene	u	u	NC	25	6.1
10061-02-6	trans-1,3-Dichloropropene	u	u	NC	25	6.1
591-78-6	2-Hexanone	u	u	NC	25	61
79-00-5	1,1,2-Trichloroethane	u	u	NC	25	6.1
142-28-9	1,3-Dichloropropane	u	u	NC	25	6.1
127-18-4	Tetrachloroethene	u	u	NC	25	6.1
124-48-1	Dibromochloromethane	u	u	NC	25	6.1
106-93-4	1,2-Dibromoethane	u	u	NC	25	6.1
108-90-7	Chlorobenzene	u	u	NC	25	6.1
100-41-4	Ethylbenzene	u	u	NC	25	6.1
630-20-6	1,1,1,2-Tetrachloroethane	u	u	NC	25	6.1
1330-20-7B	meta-/para-Xylenes	u	u	NC	25	6.1
95-47-6	ortho-Xylene	u	u	NC	25	6.1
100-42-5	Styrene	u	u	NC	25	6.1
98-92-8	Isopropylbenzene	u	u	NC	25	6.1
75-25-2	Bromoform	u	u	NC	25	6.1
79-34-5	1,1,2,2-Tetrachloroethane	u	u	NC	25	6.1
96-18-4	1,2,3-Trichloropropane	u	u	NC	25	6.1
103-65-1	n-Propylbenzene	u	u	NC	25	6.1
108-86-1	Bromobenzene	u	u	NC	25	6.1
108-67-8	1,3,5-Trimethylbenzene	u	u	NC	25	6.1
95-49-8	2-Chlorotoluene	u	u	NC	25	6.1

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)

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DEPARTMENT OF THE ARMY
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VOA (Laboratory Matrix Duplicate) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0428
Sample ID: M000997-004
Lab Duplicate ID: WG6591-3
Method: EPA 8260

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Analyzed: 09/28/00
Date Reported: 10/02/00

Matrix: Soil
Units: ug/kg
% Solids: 76.7
Analyst: Robert Williams

CAS Number	Compound	Sample Result	Dup Result	RPD (%)	QC Limits	Sample Quant Limit
106-43-4	4-Chlorotoluene	u	u	NC	25	6.1
98-06-6	tert-Butylbenzene	u	u	NC	25	6.1
95-63-6	1,2,4-Trimethylbenzene	u	u	NC	25	6.1
135-98-8	sec-Butylbenzene	u	u	NC	25	6.1
99-87-6	p-Isopropyltoluene	u	u	NC	25	6.1
541-73-1	1,3-Dichlorobenzene	u	u	NC	25	6.1
106-46-7	1,4-Dichlorobenzene	u	u	NC	25	6.1
104-51-8	n-Butylbenzene	u	u	NC	25	6.1
95-50-1	1,2-Dichlorobenzene	u	u	NC	25	6.1
96-12-8	1,2-Dibromo-3-chloropropane	u	u	NC	25	30
120-82-1	1,2,4-Trichlorobenzene	u	u	NC	25	30
87-68-3	Hexachlorobutadiene	u	u	NC	25	30
91-20-3	Naphthalene	u	u	NC	25	30
87-61-6	1,2,3-Trichlorobenzene	u	u	NC	25	30

NC: Parameter is Not Calculable
u: Below Sample Detection Limit (SDL >= MDL x Dilution)

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard Name	Added (ug/kg)	Sample (ug/kg)	Sample Rec (%)	Dup (ug/kg)	Dup Rec (%)	CQAB Lab Performanc Range	Method 8260 Acceptance Range	RPD (%)	CQAB Lab Performance Range
Dibromofluoromethane	50.0	58.3	117.	57.9	116.	80-120	80-120	0.70	25
1,2-Dichloroethane-d4	50.0	52.8	106.	52.7	105.	70-121	70-121	0.10	25
Toluene-d8	50.0	51.3	103.	50.0	100.	81-117	81-117	2.6	25
4-Bromofluorobenzene	50.0	47.9	95.8	47.6	95.3	74-121	74-121	0.60	25

(CQAB Laboratory performance ranges are based on in-house testing.)

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VOA Sample QC Exception Report

Sample ID:	WG6591-4, WG6591-5			Matrix:	Soil
Batch ID:	WG6591	Date Analyzed:	NA	Units:	ug/kg
Method:	EPA 8260B	Date Reported:	10/02/00	% Solids:	NA

Exception Noted: Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples were NOT reported in work group WG6591.

Report: Work group, WG6591, was run with the following quality control samples - Method Blank (MB), Laboratory Matrix Duplicate (LD) and a Laboratory Control Sample (LCS). The MS and MSD were not run as there was insufficient sample provided by the EnCore samplers to provide sample to spike. The LD and its original sample can provide method reproducibility information.

Approved: 10/03/00, R. Meyer, QA Officer

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DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/28/00 Matrix: Soil
LCS ID: WG6591-2 Date Reported: 10/02/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
75-71-8	Dichlorodifluoromethane	67.5	50.0	135	50-150
74-87-3	Chloromethane	57.4	50.0	115	50-150
75-01-4	Vinyl Chloride	58.2	50.0	116	50-150
74-83-9	Bromomethane	46.4	50.0	92.9	50-150
75-00-3	Chloroethane	46.6	50.0	93.2	50-150
75-69-4	Trichlorofluoromethane	54.6	50.0	109	50-150
67-64-1	Acetone	50.1	50.0	100	50-150
75-35-4	1,1-Dichloroethene	45.5	50.0	90.9	59-172
75-09-2	Methylene Chloride	47.3	50.0	94.7	60-140
75-15-0	Carbon Disulfide	44.7	50.0	89.5	60-140
156-60-5	trans-1,2-Dichloroethene	48.5	50.0	97.0	60-140
108-05-4	Vinyl Acetate	32.4 J	50.0	64.7	50-150
75-34-3	1,1-Dichloroethane	49.6	50.0	99.2	60-140
78-93-3	2-Butanone	45.2 J	50.0	90.4	50-140
594-20-7	2,2-Dichloropropane	55.1	50.0	110	60-140
156-59-2	cis-1,2-Dichloroethene	49.1	50.0	98.2	60-140
67-66-3	Chloroform	52.1	50.0	104	60-140
74-97-5	Bromochloromethane	50.7	50.0	101	60-140
71-55-6	1,1,1-Trichloroethane	52.4	50.0	105	60-140
563-58-6	1,1-Dichloropropene	52.0	50.0	104	60-140
56-23-5	Carbon Tetrachloride	52.9	50.0	106	60-140
107-06-2	1,2-Dichloroethane	51.4	50.0	103	60-140
71-43-2	Benzene	46.9	50.0	93.8	66-142
79-01-6	Trichloroethene	52.5	50.0	105	62-137
78-87-5	1,2-Dichloropropane	46.7	50.0	93.3	60-140
75-27-4	Bromodichloromethane	54.0	50.0	108	60-140
74-95-3	Dibromomethane	48.0	50.0	96.0	60-140
108-10-1	4-Methyl-2-pentanone	50.7	50.0	101	50-150
10061-01-5	cis-1,3-Dichloropropene	51.0	50.0	102	60-120
108-88-3	Toluene	48.9	50.0	97.8	59-139
10061-02-6	trans-1,3-Dichloropropene	52.3	50.0	105	50-150
591-78-6	2-Hexanone	46.0 J	50.0	92.0	60-140
79-00-5	1,1,2-Trichloroethane	44.2	50.0	88.3	60-140
142-28-9	1,3-Dichloropropane	45.6	50.0	91.2	60-140
127-18-4	Tetrachloroethene	47.7	50.0	95.4	60-140
124-48-1	Dibromochloromethane	53.2	50.0	106	60-140
106-93-4	1,2-Dibromoethane	48.6	50.0	97.2	60-140
108-90-7	Chlorobenzene	45.0	50.0	90.0	60-133
100-41-4	Ethylbenzene	47.6	50.0	95.2	60-140
630-20-6	1,1,1,2-Tetrachloroethane	47.5	50.0	94.9	60-140
1330-20-7B	meta-/para-Xylenes	89.4	100	89.4	60-140
95-47-6	ortho-Xylene	47.0	50.0	94.1	60-140
100-42-5	Styrene	47.3	50.0	94.7	60-140
98-92-8	Isopropylbenzene	47.9	50.0	95.8	60-140
75-25-2	Bromoform	51.3	50.0	103	60-140
79-34-5	1,1,2,2-Tetrachloroethane	48.5	50.0	97.0	60-140
96-18-4	1,2,3-Trichloropropane	55.3	50.0	111	60-140
103-65-1	n-Propylbenzene	44.6	50.0	89.3	60-140
108-86-1	Bromobenzene	41.0	50.0	82.0	60-140
108-67-8	1,3,5-Trimethylbenzene	42.9	50.0	85.8	60-140

J: Estimated Concentration below laboratory reporting limit.

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VOA (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008 Date Analyzed: 09/28/00 Matrix: Soil
LCS ID: WG6591-2 Date Reported: 10/02/00 Units: ug/kg
Method: EPA 8260
Analyst: Robert Williams

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Acceptance Range
95-49-8	2-Chlorotoluene	46.4	50.0	92.8	60-140
106-43-4	4-Chlorotoluene	48.2	50.0	96.3	60-140
98-06-6	tert-Butylbenzene	43.6	50.0	87.2	60-140
95-63-6	1,2,4-Trimethylbenzene	42.9	50.0	85.8	60-140
135-98-8	sec-Butylbenzene	41.0	50.0	82.0	60-140
99-87-6	p-Isopropyltoluene	43.0	50.0	86.0	60-140
541-73-1	1,3-Dichlorobenzene	44.7	50.0	89.3	60-140
106-46-7	1,4-Dichlorobenzene	44.5	50.0	89.0	60-140
104-51-8	n-Butylbenzene	45.8	50.0	91.5	60-140
95-50-1	1,2-Dichlorobenzene	45.5	50.0	90.9	60-140
96-12-8	1,2-Dibromo-3-chloropropane	72.9	50.0	146 *	60-140
120-82-1	1,2,4-Trichlorobenzene	48.9	50.0	97.9	60-140
87-68-3	Hexachlorobutadiene	39.4	50.0	78.8	60-140
91-20-3	Naphthalene	68.9	50.0	138	60-140
87-61-6	1,2,3-Trichlorobenzene	51.5	50.0	103	60-140

*: Indicates the value is outside control limits.

Method Quality Control (Surrogate recoveries unadjusted for percent solids)

Surrogate Standard	Recovery (%)	CQAB Lab Perfomance Range	Method 8260 Acceptance Range	Spike (ug/kg)
Dibromofluoromethane	107.	80-120	80-120	50.0
1,2-Dichloroethane-d4	102.	70-121	70-121	50.0
Toluene-d8	93.2	81-117	81-117	50.0
4-Bromofluorobenzene	83.1	74-121	74-121	50.0

(CQAB Laboratory performance ranges are based on in-house testing.)

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BNA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/18/00	Matrix:	Water
Client Sample ID:	AB2017	Date Received:	09/20/00	Units:	ug/L
CQAB Sample ID:	M000975-003	Date Logged:	09/21/00	Amount (L):	1.02
Prep Method:	SW-846 3520 C	Date Extracted:	09/21/00	Vial Vol. (mL):	1
Analysis Method:	SW-846 8270 C	Date Analyzed:	10/18/00	Final Vol.(mL):	1
Work Group:	WG6578	Date Reported:	10/27/00	Dilution:	1
Analytical Batch:	001018ew1	Instrument ID:	gcmsb		
Analyst:	Greg O. Shearer	Data File ID:	bna0501006		

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	4.9	0.5	99-09-2	3-Nitroaniline	u	49	5
111-44-4	Bis(2-chloroethyl) ether	u	4.9	0.5	83-32-9	Acenaphthene	u	4.9	0.5
95-57-8	2-Chlorophenol	u	4.9	0.5	51-28-5	2,4-Dinitrophenol	u	49	5
541-73-1	1,3-Dichlorobenzene	u	4.9	0.5	132-64-9	Dibenzofuran	u	4.9	0.5
106-46-7	1,4-Dichlorobenzene	u	4.9	0.5	100-02-7	4-Nitrophenol	u	49	5
95-50-1	1,2-Dichlorobenzene	u	4.9	0.5	121-14-2	2,4-Dinitrotoluene	u	4.9	0.5
100-51-6	Benzyl alcohol	u	49	5	86-73-7	Fluorene	u	4.9	0.5
95-48-7	2-Methylphenol	u	4.9	0.5	84-66-2	Diethyl phthalate	u	4.9	0.5
108-60-1	2,2'-Oxybis(1-chloropropane)	u	4.9	0.5	7005-72-3	4-Chlorophenyl phenyl ether	u	4.9	0.5
621-64-7	N-Nitroso-di-n-propylamine	u	4.9	0.5	100-01-6	4-Nitroaniline 62 %	u	49	5
67-72-1	Hexachloroethane	u	4.9	0.5	534-52-1	4,6-Dinitro-2-methylphenol	u	49	5
106-44-5	4-Methylphenol	u	4.9	0.5	86-30-6	N-Nitrosodiphenylamine (1)	u	4.9	0.5
98-95-3	Nitrobenzene	u	4.9	0.5	118-74-1	Hexachlorobenzene	u	4.9	0.5
78-59-1	Isophorone	u	4.9	0.5	101-55-3	4-Bromophenyl phenyl ether	u	4.9	0.5
88-75-5	2-Nitrophenol	u	9.8	1	87-86-5	Pentachlorophenol	u	49	5
105-67-9	2,4-Dimethylphenol	u	9.8	1	85-01-8	Phenanthrene	u	4.9	0.5
111-91-1	Bis(2-chloroethoxy)methane	u	4.9	0.5	120-12-7	Anthracene	u	4.9	0.5
120-83-2	2,4-Dichlorophenol	u	4.9	0.5	84-74-2	Di-n-butyl phthalate	u	4.9	0.5
65-85-0	Benzoic acid	u	49	5	206-44-0	Fluoranthene	u	4.9	0.5
120-82-1	1,2,4-Trichlorobenzene	u	4.9	0.5	129-00-0	Pyrene	u	4.9	0.5
91-20-3	Naphthalene	u	4.9	0.5	85-68-7	Butyl benzyl phthalate	u	4.9	0.5
106-47-8	4-Chloroaniline	u	9.8	1	56-55-3	Benzo(a)anthracene	u	4.9	0.5
87-68-3	Hexachlorobutadiene	u	4.9	0.5	91-94-1	3,3'-Dichlorobenzidine	u	20	2
59-50-7	4-Chloro-3-methylphenol	u	9.8	1	218-01-9	Chrysene	u	4.9	0.5
91-57-6	2-Methylnaphthalene	u	4.9	0.5	117-81-7	Bis(2-ethylhexyl) phthalate	1 JB	4.9	0.5
77-47-4	Hexachlorocyclopentadiene	u	20	2	117-84-0	Di-n-octyl phthalate	u	4.9	0.5
88-06-2	2,4,6-Trichlorophenol	u	4.9	0.5	205-99-2	Benzo(b)fluoranthene	u	4.9	0.5
95-95-4	2,4,5-Trichlorophenol	u	4.9	0.5	207-08-9	Benzo(k)fluoranthene	u	4.9	0.5
91-58-7	2-Chloronaphthalene	u	4.9	0.5	50-32-8	Benzo(a)pyrene	u	4.9	0.5
88-74-4	2-Nitroaniline	u	49	5	193-39-5	Indeno(1,2,3-cd)pyrene	u	4.9	0.5
208-96-8	Acenaphthylene	u	4.9	0.5	53-70-3	Dibenzo(a,h)anthracene	u	4.9	0.5
131-11-3	Dimethyl phthalate	u	4.9	0.5	191-24-2	Benzo(g,h,i)perylene	u	4.9	0.5
606-20-2	2,6-Dinitrotoluene	u	4.9	0.5					

MDL determined according to procedures in 40CFR Appendix B to part 136
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.
J: Estimated Concentration above MDL but below LRL.
B: Compound also present in the method blank.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/L)
4165-60-0	Nitrobenzene-d5	77	35-114	43-120	49.0
321-60-8	2-Fluorobiphenyl	76	43-116	50-104	49.0
98904-43-9	Terphenyl-d14	81	33-141	44-113	49.0
4165-62-2	Phenol-d5	68	10-110	52-103	73.5
367-12-4	2-Fluorophenol	67	21-110	45-100	73.5
118-79-6	2,4,6-Tribromophenol	72	10-123	53-120	73.5

Quality Assurance / Quality Control

Method Blank:	WG6578-1	Matrix Spike:	WG6578-4	Dilution:	NA
Lab Control Sample:	WG6578-2	Matrix Spike Duplicate:	NA	Re-analysis:	NA
Lab Matrix Duplicate:	WG6578-3	Dilution:	NA	Re-extraction:	NA

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BNA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/19/00	Matrix:	Water
Client Sample ID:	AB2019	Date Received:	09/21/00	Units:	ug/L
CQAB Sample ID:	M000975-006	Date Logged:	09/21/00	Amount (L):	0.950
Prep Method:	SW-846 3520 C	Date Extracted:	09/21/00	Vial Vol. (mL):	1
Analysis Method:	SW-846 8270 C	Date Analyzed:	10/18/00	Final Vol.(mL):	1
Work Group:	WG6578	Date Reported:	10/27/00	Dilution:	1
Analytical Batch:	001018ew1	Instrument ID:	gcmsb		
Analyst:	Greg O. Shearer	Data File ID:	bna0701008		

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	5.3	0.5	99-09-2	3-Nitroaniline	u	53	5
111-44-4	Bis(2-chloroethyl) ether	u	5.3	0.5	83-32-9	Acenaphthene	u	5.3	0.5
95-57-8	2-Chlorophenol	u	5.3	0.5	51-28-5	2,4-Dinitrophenol	u	53	5
541-73-1	1,3-Dichlorobenzene	u	5.3	0.5	132-64-9	Dibenzofuran	u	5.3	0.5
106-46-7	1,4-Dichlorobenzene	u	5.3	0.5	100-02-7	4-Nitrophenol	u	53	5
95-50-1	1,2-Dichlorobenzene	u	5.3	0.5	121-14-2	2,4-Dinitrotoluene	u	5.3	0.5
100-51-6	Benzyl alcohol	u	53	5	86-73-7	Fluorene	u	5.3	0.5
95-48-7	2-Methylphenol	u	5.3	0.5	84-66-2	Diethyl phthalate	u	5.3	0.5
108-60-1	2,2'-Oxybis(1-chloropropane)	u	5.3	0.5	7005-72-3	4-Chlorophenyl phenyl ether	u	5.3	0.5
621-64-7	N-Nitroso-di-n-propylamine	u	5.3	0.5	100-01-6	4-Nitroaniline 61%	u	53	5
67-72-1	Hexachloroethane	u	5.3	0.5	534-52-1	4,6-Dinitro-2-methylphenol	u	53	5
106-44-5	4-Methylphenol	u	5.3	0.5	86-30-6	N-Nitrosodiphenylamine (1)	u	5.3	0.5
98-95-3	Nitrobenzene	u	5.3	0.5	118-74-1	Hexachlorobenzene	u	5.3	0.5
78-59-1	Isophorone	u	5.3	0.5	101-55-3	4-Bromophenyl phenyl ether	u	5.3	0.5
88-75-5	2-Nitrophenol	u	11	1	87-86-5	Pentachlorophenol	u	53	5
105-67-9	2,4-Dimethylphenol	u	11	1	85-01-8	Phenanthrene	u	5.3	0.5
111-91-1	Bis(2-chloroethoxy)methane	u	5.3	0.5	120-12-7	Anthracene	u	5.3	0.5
120-83-2	2,4-Dichlorophenol	u	5.3	0.5	84-74-2	Di-n-butyl phthalate	u	5.3	0.5
65-85-0	Benzoic acid	u	53	5	206-44-0	Fluoranthene	u	5.3	0.5
120-82-1	1,2,4-Trichlorobenzene	u	5.3	0.5	129-00-0	Pyrene	u	5.3	0.5
91-20-3	Naphthalene	u	5.3	0.5	85-68-7	Butyl benzyl phthalate	u	5.3	0.5
106-47-8	4-Chloroaniline	u	11	1	56-55-3	Benzo(a)anthracene	u	5.3	0.5
87-68-3	Hexachlorobutadiene	u	5.3	0.5	91-94-1	3,3'-Dichlorobenzidine	u	21	2
59-50-7	4-Chloro-3-methylphenol	u	11	1	218-01-9	Chrysene	u	5.3	0.5
91-57-6	2-Methylnaphthalene	u	5.3	0.5	117-81-7	Bis(2-ethylhexyl) phthalate	20 B	5.3	0.5
77-47-4	Hexachlorocyclopentadiene	u	21	2	117-84-0	Di-n-octyl phthalate	1 JB	5.3	0.5
88-06-2	2,4,6-Trichlorophenol	u	5.3	0.5	205-99-2	Benzo(b)fluoranthene	u	5.3	0.5
95-95-4	2,4,5-Trichlorophenol	u	5.3	0.5	207-08-9	Benzo(k)fluoranthene	u	5.3	0.5
91-58-7	2-Chloronaphthalene	u	5.3	0.5	50-32-8	Benzo(a)pyrene	u	5.3	0.5
88-74-4	2-Nitroaniline	u	53	5	193-39-5	Indeno(1,2,3-cd)pyrene	u	5.3	0.5
208-96-8	Acenaphthylene	u	5.3	0.5	53-70-3	Dibenzo(a,h)anthracene	u	5.3	0.5
131-11-3	Dimethyl phthalate	u	5.3	0.5	191-24-2	Benzo(g,h,i)perylene	u	5.3	0.5
606-20-2	2,6-Dinitrotoluene	u	5.3	0.5					

MDL determined according to procedures in 40CFR Appendix B to part 136
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.
B: Compound also present in the method blank.
J: Estimated Concentration above MDL but below LRL.
NOTE: Please see the attached Batch Narrative.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/L)
4165-60-0	Nitrobenzene-d5	78	35-114	43-120	52.6
321-60-8	2-Fluorobiphenyl	77	43-116	50-104	52.6
98904-43-9	Terphenyl-d14	86	33-141	44-113	52.6
4165-62-2	Phenol-d5	69	10-110	52-103	78.9
367-12-4	2-Fluorophenol	71	21-110	45-100	78.9
118-79-6	2,4,6-Tribromophenol	77	10-123	53-120	78.9

Quality Assurance / Quality Control

Method Blank:	WG6578-1	Matrix Spike:	WG6578-4	Dilution:	NA
Lab Control Sample:	WG6578-2	Matrix Spike Duplicate:	NA	Re-analysis:	NA
Lab Matrix Duplicate:	WG6578-3	Dilution:	NA	Re-extraction:	NA

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Batch Narrative

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Workgroup Number: WG6578
Determinative Method: 8270C

1. The method blank for WG6578, which includes samples from the Former Plumbrook Ordnance Works - TNT Area C project, gave detections at concentrations near the method detection limit for several target analytes due to laboratory contamination. All analyte concentrations were below the laboratory reporting limits (LRL) for the target analytes with the exception of bis(2-ethylhexyl) phthalate which was observed at a concentration slightly above the LRL.

2. Bis(2-ethylhexyl) phthalate was observed above the laboratory reporting limit in the method blank (5 ug/L) and in field sample AB2019 (20 ug/L) (CQAB No. M000975-006). The typical corrective action for such an occurrence is re-extraction of the field sample. Due to insufficient sample volume, the sample could not be re-extracted.

3. Due to an error during the extraction of WG6578, most of the laboratory control sample (LCS) extract was lost. As a result, all target analyte and surrogate recoveries in the LCS were below 15%. The typical corrective action for this error would be re-extraction of the entire workgroup. As most of the samples did not have sufficient remaining sample volume for re-extraction, this corrective action was not possible. The extraction error was not observed for any other sample in the workgroup, however. Note the generally acceptable target analyte recoveries in the Matrix Spike sample and the acceptable surrogate recoveries for the field samples. The error that occurred during the extraction for the LCS does not appear to have occurred in or impacted the other samples in the workgroup.

Denise MacMillan
CQAB QA Officer

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BNA (Method Blank) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/21/00	Matrix:	Water
CQAB Sample ID:	WG6578-1	Date Analyzed:	10/18/00	Units:	ug/L
Prep Method:	SW-846 3520 C	Date Reported:	10/27/00	Amount (L):	1.0
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001018ew1	Data File ID:	bna0101002	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	1 J	5.0	0.5	99-09-2	3-Nitroaniline	u	50	5
111-44-4	Bis(2-chloroethyl) ether	u	5.0	0.5	83-32-9	Acenaphthene	1 J	5.0	0.5
95-57-8	2-Chlorophenol	u	5.0	0.5	51-28-5	2,4-Dinitrophenol	u	50	5
541-73-1	1,3-Dichlorobenzene	u	5.0	0.5	132-64-9	Dibenzofuran	1 J	5.0	0.5
106-46-7	1,4-Dichlorobenzene	u	5.0	0.5	100-02-7	4-Nitrophenol	u	50	5
95-50-1	1,2-Dichlorobenzene	u	5.0	0.5	121-14-2	2,4-Dinitrotoluene	u	5.0	0.5
100-51-6	Benzyl alcohol	u	50	5	86-73-7	Fluorene	1 J	5.0	0.5
95-48-7	2-Methylphenol	1 J	5.0	0.5	84-66-2	Diethyl phthalate	1 J	5.0	0.5
108-60-1	2,2'-Oxybis(1-chloropropane)	u	5.0	0.5	7005-72-3	4-Chlorophenyl phenyl ether	1 J	5.0	0.5
621-64-7	N-Nitroso-di-n-propylamine	u	5.0	0.5	100-01-6	4-Nitroaniline	u	50	5
67-72-1	Hexachloroethane	u	5.0	0.5	534-52-1	4,6-Dinitro-2-methylphenol	u	50	5
106-44-5	4-Methylphenol	u	5.0	0.5	86-30-6	N-Nitrosodiphenylamine (1)	1 J	5.0	0.5
98-95-3	Nitrobenzene	u	5.0	0.5	118-74-1	Hexachlorobenzene	1 J	5.0	0.5
78-59-1	Isophorone	1 J	5.0	0.5	101-55-3	4-Bromophenyl phenyl ether	1 J	5.0	0.5
88-75-5	2-Nitrophenol	u	10	1	87-86-5	Pentachlorophenol	u	50	5
105-67-9	2,4-Dimethylphenol	u	10	1	85-01-8	Phenanthrene	1 J	5.0	0.5
111-91-1	Bis(2-chloroethoxy)methane	u	5.0	0.5	120-12-7	Anthracene	1 J	5.0	0.5
120-83-2	2,4-Dichlorophenol	u	5.0	0.5	84-74-2	Di-n-butyl phthalate	2 J	5.0	0.5
65-85-0	Benzoic acid	u	50	5	206-44-0	Fluoranthene	1 J	5.0	0.5
120-82-1	1,2,4-Trichlorobenzene	u	5.0	0.5	129-00-0	Pyrene	1 J	5.0	0.5
91-20-3	Naphthalene	u	5.0	0.5	85-68-7	Butyl benzyl phthalate	2 J	5.0	0.5
106-47-8	4-Chloroaniline	u	10	1	56-55-3	Benzo(a)anthracene	1 J	5.0	0.5
87-68-3	Hexachlorobutadiene	u	5.0	0.5	91-94-1	3,3'-Dichlorobenzidine	u	20	2
59-50-7	4-Chloro-3-methylphenol	u	10	1	218-01-9	Chrysene	1 J	5.0	0.5
91-57-6	2-Methylnaphthalene	u	5.0	0.5	117-81-7	Bis(2-ethylhexyl) phthalate	5	5.0	0.5
77-47-4	Hexachlorocyclopentadiene	u	20	2	117-84-0	Di-n-octyl phthalate	2 J	5.0	0.5
88-06-2	2,4,6-Trichlorophenol	u	5.0	0.5	205-99-2	Benzo(b)fluoranthene	1 J	5.0	0.5
95-95-4	2,4,5-Trichlorophenol	u	5.0	0.5	207-08-9	Benzo(k)fluoranthene	1 J	5.0	0.5
91-58-7	2-Chloronaphthalene	u	5.0	0.5	50-32-8	Benzo(a)pyrene	1 J	5.0	0.5
88-74-4	2-Nitroaniline	u	50	5	193-39-5	Indeno(1,2,3-cd)pyrene	1 J	5.0	0.5
208-96-8	Acenaphthylene	1 J	5.0	0.5	53-70-3	Dibenzo(a,h)anthracene	1 J	5.0	0.5
131-11-3	Dimethyl phthalate	1 J	5.0	0.5	191-24-2	Benzo(g,h,i)perylene	1 J	5.0	0.5
606-20-2	2,6-Dinitrotoluene	u	5.0	0.5					

NOTE: Please see the attached Batch Narrative.
J: Estimated Concentration above MDL but below LRL.
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/L)
4165-60-0	Nitrobenzene-d5	76	35-114	43-120	50.0
321-60-8	2-Fluorobiphenyl	76	43-116	50-104	50.0
98904-43-9	Terphenyl-d14	83	33-141	44-113	50.0
4165-62-2	Phenol-d5	72	10-110	52-103	75.0
367-12-4	2-Fluorophenol	72	21-110	45-100	75.0
118-79-6	2,4,6-Tribromophenol	75	10-123	53-120	75.0

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BNA (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	09/21/00	Sample ID:	Sample	LD
Client Sample ID:	AB2017	Date Analyzed:	10/18/00	CQAB No.:	M000975-003	WG6578-3
Prep Method:	SW-846 3520 C	Date Reported:	10/27/00	Data File ID:	bna0501006	bna0601007
Analysis Method:	SW-846 8270 C	Matrix:	Water	Amount(L):	1.02	0.950
Instrument ID:	gcmsb	Units:	ug/L	Vial Vol.(mL):	1	1
Analytical Batch:	001018ew1			Final Vol.(mL):	1	1
Analyst:	Greg O. Shearer			Dilution Factor:	1	1

CAS Number	Compound	Sample Result	LD Result	LRL	MDL	RPD (%)	CQAB Lab RPD Limit
108-95-2	Phenol	u	u	4.9	0.5	NC	30
111-44-4	Bis(2-chloroethyl) ether	u	u	4.9	0.5	NC	30
95-57-8	2-Chlorophenol	u	u	4.9	0.5	NC	30
541-73-1	1,3-Dichlorobenzene	u	u	4.9	0.5	NC	30
106-46-7	1,4-Dichlorobenzene	u	u	4.9	0.5	NC	30
95-50-1	1,2-Dichlorobenzene	u	u	4.9	0.5	NC	30
100-51-6	Benzyl alcohol	u	u	49	5	NC	30
95-48-7	2-Methylphenol	u	u	4.9	0.5	NC	30
108-60-1	2,2'-Oxybis(1-chloropropane)	u	u	4.9	0.5	NC	30
621-64-7	N-Nitroso-di-n-propylamine	u	u	4.9	0.5	NC	30
67-72-1	Hexachloroethane	u	u	4.9	0.5	NC	30
106-44-5	4-Methylphenol	u	u	4.9	0.5	NC	30
98-95-3	Nitrobenzene	u	u	4.9	0.5	NC	30
78-59-1	Isophorone	u	u	4.9	0.5	NC	30
88-75-5	2-Nitrophenol	u	u	9.8	1	NC	60
105-67-9	2,4-Dimethylphenol	u	u	9.8	1	NC	60
111-91-1	Bis(2-chloroethoxy)methane	u	u	4.9	0.5	NC	30
120-83-2	2,4-Dichlorophenol	u	u	4.9	0.5	NC	30
65-85-0	Benzoic acid	u	u	49	5	NC	60
120-82-1	1,2,4-Trichlorobenzene	u	u	4.9	0.5	NC	30
91-20-3	Naphthalene	u	u	4.9	0.5	NC	30
106-47-8	4-Chloroaniline	u	u	9.8	1	NC	60
87-68-3	Hexachlorobutadiene	u	u	4.9	0.5	NC	30
59-50-7	4-Chloro-3-methylphenol	u	u	9.8	1	NC	30
91-57-6	2-Methylnaphthalene	u	u	4.9	0.5	NC	30
77-47-4	Hexachlorocyclopentadiene	u	u	20	2	NC	60
88-06-2	2,4,6-Trichlorophenol	u	u	4.9	0.5	NC	30
95-95-4	2,4,5-Trichlorophenol	u	u	4.9	0.5	NC	30
91-58-7	2-Chloronaphthalene	u	u	4.9	0.5	NC	30
88-74-4	2-Nitroaniline	u	u	49	5	NC	60
208-96-8	Acenaphthylene	u	u	4.9	0.5	NC	30
131-11-3	Dimethyl phthalate	u	u	4.9	0.5	NC	30
606-20-2	2,6-Dinitrotoluene	u	u	4.9	0.5	NC	30
99-09-2	3-Nitroaniline	u	u	49	5	NC	60
83-32-9	Acenaphthene	u	u	4.9	0.5	NC	30
51-28-5	2,4-Dinitrophenol	u	u	49	5	NC	60
132-64-9	Dibenzofuran	u	u	4.9	0.5	NC	30
100-02-7	4-Nitrophenol	u	u	49	5	NC	60
121-14-2	2,4-Dinitrotoluene	u	u	4.9	0.5	NC	60
86-73-7	Fluorene	u	u	4.9	0.5	NC	30
84-66-2	Diethyl phthalate	u	u	4.9	0.5	NC	30
7005-72-3	4-Chlorophenyl phenyl ether	u	u	4.9	0.5	NC	30
100-01-6	4-Nitroaniline	u	u	49	5	NC	30
534-52-1	4,6-Dinitro-2-methylphenol	u	u	49	5	NC	60
86-30-6	N-Nitrosodiphenylamine (1)	u	u	4.9	0.5	NC	30
118-74-1	Hexachlorobenzene	u	u	4.9	0.5	NC	30
101-55-3	4-Bromophenyl phenyl ether	u	u	4.9	0.5	NC	30
87-86-5	Pentachlorophenol	u	u	49	5	NC	60

NC: Parameter is Not Calculable.
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.

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BNA (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	09/21/00	Sample ID:	Sample	LD
Client Sample ID:	AB2017	Date Analyzed:	10/18/00	CQAB No.:	M000975-003	WG6578-3
Prep Method:	SW-846 3520 C	Date Reported:	10/27/00	Data File ID:	bna0501006	bna0601007
Analysis Method:	SW-846 8270 C	Matrix:	Water	Amount(L):	1.02	0.950
Instrument ID:	gcmsb	Units:	ug/L	Vial Vol.(mL):	1	1
Analytical Batch:	001018ew1			Final Vol.(mL):	1	1
Analyst:	Greg O. Shearer			Dilution Factor:	1	1

CAS Number	Compound	Sample Result	LD Result	LRL	MDL	RPD (%)	CQAB Lab RPD Limit
85-01-8	Phenanthrene	u	u	4.9	0.5	NC	30
120-12-7	Anthracene	u	u	4.9	0.5	NC	30
84-74-2	Di-n-butyl phthalate	u	u	4.9	0.5	NC	30
206-44-0	Fluoranthene	u	u	4.9	0.5	NC	30
129-00-0	Pyrene	u	u	4.9	0.5	NC	30
85-68-7	Butyl benzyl phthalate	u	u	4.9	0.5	NC	30
56-55-3	Benzo(a)anthracene	u	u	4.9	0.5	NC	30
91-94-1	3,3'-Dichlorobenzidine	u	u	20	2	NC	60
218-01-9	Chrysene	u	u	4.9	0.5	NC	30
117-81-7	Bis(2-ethylhexyl) phthalate	1 JB	2 JB	4.9	0.5	X	30
117-84-0	Di-n-octyl phthalate	u	u	4.9	0.5	NC	30
205-99-2	Benzo(b)fluoranthene	u	u	4.9	0.5	NC	30
207-08-9	Benzo(k)fluoranthene	u	u	4.9	0.5	NC	30
50-32-8	Benzo(a)pyrene	u	u	4.9	0.5	NC	30
193-39-5	Indeno(1,2,3-cd)pyrene	u	u	4.9	0.5	NC	30
53-70-3	Dibenzo(a,h)anthracene	u	u	4.9	0.5	NC	30
191-24-2	Benzo(g,h,i)perylene	u	u	4.9	0.5	NC	30

NC: Parameter is Not Calculable.
u: Below Method Detection Limit
J: Estimated Concentration above MDL but below LRL.
B: Compound also present in the method blank.
X: RPD not calculated due to the uncertainty associated with estimated concentrations.

Method Quality Control

CAS Number	Surrogate Standard Name	Added (ug/L)	Sample (ug/L)	Sample Rec (%)	Added Dup (ug/L)	Dup (ug/L)	Dup Rec (%)	Method % Rec Limits	CQAB % Rec Limits	RPD (%)	CQAB Lab RPD Limit
4165-60-0	Nitrobenzene-d5	49.0	37.9	77	52.6	43.8	83	35-114	43-120	7	30
321-60-8	2-Fluorobiphenyl	49.0	37.5	76	52.6	42.0	80	43-116	50-104	4	30
98904-43-9	Terphenyl-d14	49.0	39.7	81	52.6	43.6	83	33-141	44-113	2	30
4165-62-2	Phenol-d5	73.5	50.0	68	78.9	59.9	76	10-110	52-103	11	30
367-12-4	2-Fluorophenol	73.5	49.3	67	78.9	65.5	83	21-110	45-100	21	30
118-79-6	2,4,6-Tribromophenol	73.5	53.0	72	78.9	60.9	77	10-123	53-120	7	30

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BNA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	09/21/00	Sample ID:	MS	MSD
Client Sample ID:	AB2019	Date Analyzed:	10/18/00	CQAB No.:	WG6578-4	-
CQAB Sample ID:	M000975-006	Date Reported:	10/27/00	Data File ID:	bna0801009	-
Prep Method:	SW-846 3520 C	Matrix:	Water	Amount(L):	0.920	-
Analysis Method:	SW-846 8270 C	Units:	ug/L	Vial Vol.(mL):	1	-
Analytical Batch:	001018ew1			Final Vol.(mL):	1	-
Analyst:	Greg O. Shearer	Instrument ID:	gcmsb	Dilution Factor:	1	-

CAS Number	Compound	## Sample Result	MS Spike	MS Conc	MS %Rec	MSD Spike	MSD Conc	MSD %Rec	RPD (%)	Method Limits RPD	Method Limits %Rec	Lab Limits RPD	Lab Limits %Rec
108-95-2	Phenol	u	87	70	81	-	-	-	-	42	12-110	30	50-105
111-44-4	Bis(2-chloroethyl) ether	u	54	43	80	-	-	-	-			30	44-110
95-57-8	2-Chlorophenol	u	87	72	82	-	-	-	-	40	27-123	30	47-102
541-73-1	1,3-Dichlorobenzene	u	54	38	70	-	-	-	-			30	32-86
106-46-7	1,4-Dichlorobenzene	u	54	40	75	-	-	-	-	28	36-97	30	33-87
95-50-1	1,2-Dichlorobenzene	u	54	41	76	-	-	-	-			30	34-91
100-51-6	Benzyl alcohol	u	54	46	85	-	-	-	-			30	55-100
95-48-7	2-Methylphenol	u	87	45	51 ^	-	-	-	-			30	55-101
108-60-1	2,2'-Oxybis(1-chloropropane)	u	54	49	91	-	-	-	-			30	51-102
621-64-7	N-Nitroso-di-n-propylamine	u	54	47	88	-	-	-	-	38	41-116	30	52-111
67-72-1	Hexachloroethane	u	54	38	69	-	-	-	-			30	29-83
106-44-5	4-Methylphenol	u	87	70	80	-	-	-	-			30	34-91
98-95-3	Nitrobenzene	u	54	49	91	-	-	-	-			30	46-121
78-59-1	Isophorone	u	54	43	80	-	-	-	-			30	42-123
88-75-5	2-Nitrophenol	u	87	72	82	-	-	-	-			60	43-117
105-67-9	2,4-Dimethylphenol	u	87	69	79	-	-	-	-			60	51-100
111-91-1	Bis(2-chloroethoxy)methane	u	54	47	86	-	-	-	-			30	45-117
120-83-2	2,4-Dichlorophenol	u	87	69	80	-	-	-	-			30	51-108
65-85-0	Benzoic acid	u	174	135	77	-	-	-	-			60	10-150
120-82-1	1,2,4-Trichlorobenzene	u	54	42	77	-	-	-	-	28	39-98	30	38-94
91-20-3	Naphthalene	u	54	46	86	-	-	-	-			30	47-99
106-47-8	4-Chloroaniline	u	54	37	69	-	-	-	-			60	10-101
87-68-3	Hexachlorobutadiene	u	54	41	77	-	-	-	-			30	30-94
59-50-7	4-Chloro-3-methylphenol	u	87	75	86	-	-	-	-	42	23-97	30	53-110
91-57-6	2-Methylnaphthalene	u	54	67	125 ^	-	-	-	-			30	49-100
77-47-4	Hexachlorocyclopentadiene	u	54	14	26	-	-	-	-			60	10-53
88-06-2	2,4,6-Trichlorophenol	u	87	74	85	-	-	-	-			30	55-110
95-95-4	2,4,5-Trichlorophenol	u	87	73	84	-	-	-	-			30	57-111
91-58-7	2-Chloronaphthalene	u	54	47	88	-	-	-	-			30	50-104
88-74-4	2-Nitroaniline	u	54	48	88	-	-	-	-			60	42-147
208-96-8	Acenaphthylene	u	54	47	88	-	-	-	-			30	54-101
131-11-3	Dimethyl phthalate	u	54	48	89	-	-	-	-			30	57-106
606-20-2	2,6-Dinitrotoluene	u	54	47	87	-	-	-	-			30	50-126
99-09-2	3-Nitroaniline	u	54	35	65	-	-	-	-			60	10-94
83-32-9	Acenaphthene	u	54	47	87	-	-	-	-	31	46-118	30	55-105
51-28-5	2,4-Dinitrophenol	u	87	68	78	-	-	-	-			60	10-140
132-64-9	Dibenzofuran	u	54	48	89	-	-	-	-			30	54-107
100-02-7	4-Nitrophenol	u	87	62	71	-	-	-	-	50	10-80	60	49-115
121-14-2	2,4-Dinitrotoluene	u	54	46	85	-	-	-	-	38	24-96	60	52-123
86-73-7	Fluorene	u	54	47	87	-	-	-	-			30	54-110
84-66-2	Diethyl phthalate	u	54	48	88	-	-	-	-			30	54-107
7005-72-3	4-Chlorophenyl phenyl ether	u	54	50	92	-	-	-	-			30	53-110
100-01-6	4-Nitroaniline	u	54	30	55	-	-	-	-			30	10-149
534-52-1	4,6-Dinitro-2-methylphenol	u	87	80	92	-	-	-	-			60	27-136
86-30-6	N-Nitrosodiphenylamine (1)	u	54	45	84	-	-	-	-			30	52-111
118-74-1	Hexachlorobenzene	u	54	46	86	-	-	-	-			30	55-115
101-55-3	4-Bromophenyl phenyl ether	u	54	50	93	-	-	-	-			30	54-115
87-86-5	Pentachlorophenol	u	87	74	85	-	-	-	-	50	9-103	60	58-111
85-01-8	Phenanthrene	u	54	49	90	-	-	-	-			30	52-108

u: Below Method Detection Limit
##: Sample result used for spike recovery calculation is adjusted for the amount of sample used for the MS/MSD.
%Rec: Percent of the spike recovered from the matrix
^: Indicates the result is outside CQAB laboratory limits which are based on historical in-house LCS data.
(1): Cannot be distinguished from Diphenylamine by this method.

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DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

BNA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	09/21/00	Sample ID:	MS	MSD
Client Sample ID:	AB2019	Date Analyzed:	10/18/00	CQAB No.:	WG6578-4	-
CQAB Sample ID:	M000975-006	Date Reported:	10/27/00	Data File ID:	bna0801009	-
Prep Method:	SW-846 3520 C	Matrix:	Water	Amount(L):	0.920	-
Analysis Method:	SW-846 8270 C	Units:	ug/L	Vial Vol.(mL):	1	-
Analytical Batch:	001018ew1			Final Vol.(mL):	1	-
Analyst:	Greg O. Shearer	Instrument ID:	gcmsb	Dilution Factor:	1	-

CAS Number	Compound	## Sample Result	MS Spike	MS Conc	MS %Rec	MSD Spike	MSD Conc	MSD %Rec	RPD (%)	Method Limits RPD	Method Limits %Rec	Lab Limits RPD	Lab Limits %Rec
120-12-7	Anthracene	u	54	47	86	-	-	-	-			30	52-105
84-74-2	Di-n-butyl phthalate	u	54	49	90	-	-	-	-			30	50-109
206-44-0	Fluoranthene	u	54	48	89	-	-	-	-			30	58-110
129-00-0	Pyrene	u	54	44	82	-	-	-	-	31	26-127	30	49-108
85-68-7	Butyl benzyl phthalate	u	54	47	87	-	-	-	-			30	42-114
56-55-3	Benzo(a)anthracene	u	54	46	85	-	-	-	-			30	51-110
91-94-1	3,3'-Dichlorobenzidine	u	54	11	20	-	-	-	-			60	10-78
218-01-9	Chrysene	u	54	47	87	-	-	-	-			30	52-107
117-81-7	Bis(2-ethylhexyl) phthalate	20 B	54	46	47	-	-	-	-			30	16-153
117-84-0	Di-n-octyl phthalate	1 JB	54	52	95	-	-	-	-			30	36-125
205-99-2	Benzo(b)fluoranthene	u	54	43	79	-	-	-	-			30	55-109
207-08-9	Benzo(k)fluoranthene	u	54	43	80	-	-	-	-			30	54-106
50-32-8	Benzo(a)pyrene	u	54	40	74	-	-	-	-			30	53-101
193-39-5	Indeno(1,2,3-cd)pyrene	u	54	40	74	-	-	-	-			30	51-106
53-70-3	Dibenzo(a,h)anthracene	u	54	39	72	-	-	-	-			30	52-109
191-24-2	Benzo(g,h,i)perylene	u	54	36	66	-	-	-	-			30	49-108

##: Sample result used for spike recovery calculation is adjusted for the amount of sample used for the MS/MSD.
%Rec: Percent of the spike recovered from the matrix
u: Below Method Detection Limit
B: Compound also present in the method blank.
J: Estimated Concentration above MDL but below LRL.

Method Quality Control

CAS Number	Surrogate Standard Name	Added (ug/L)	MS (ug/L)	MS Rec (%)	Added MSD (ug/L)	MSD (ug/L)	MSD Rec (%)	Method %Rec Limits	CQAB %Rec Limits	RPD (%)	CQAB Lab RPD Limit
4165-60-0	Nitrobenzene-d5	54.3	41.2	76	-	-	-	35-114	43-120	-	30
321-60-8	2-Fluorobiphenyl	54.3	43.8	81	-	-	-	43-116	50-104	-	30
98904-43-9	Terphenyl-d14	54.3	40.9	75	-	-	-	33-141	44-113	-	30
4165-62-2	Phenol-d5	81.5	61.6	76	-	-	-	10-110	52-103	-	30
367-12-4	2-Fluorophenol	81.5	59.2	73	-	-	-	21-110	45-100	-	30
118-79-6	2,4,6-Tribromophenol	81.5	62.7	77	-	-	-	10-123	53-120	-	30

Note: Due to insufficient sample volume, a matrix spike duplicate could not be extracted with this workgroup.

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BNA (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/21/00	Matrix:	Water
CQAB Sample ID:	WG6578-2	Date Analyzed:	10/18/00	Units:	ug/L
Prep Method:	SW-846 3520 C	Date Reported:	10/27/00	Amount(L):	1.0
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001018ew1	Data File ID:	bna0201003	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Method Range	CQAB Range
108-95-2	Phenol	8 B	80.0	10 ^	5-112	50-105
111-44-4	Bis(2-chloroethyl) ether	5 J	50.0	9 ^^	12-158	44-110
95-57-8	2-Chlorophenol	8	80.0	10 ^^	23-134	47-102
541-73-1	1,3-Dichlorobenzene	5 J	50.0	10 ^	D-172	32-86
106-46-7	1,4-Dichlorobenzene	5 J	50.0	10 ^^	20-124	33-87
95-50-1	1,2-Dichlorobenzene	5 J	50.0	10 ^^	32-129	34-91
100-51-6	Benzyl alcohol	u	50.0	NC		55-100
95-48-7	2-Methylphenol	8 B	80.0	10 ^		55-101
108-60-1	2,2'-Oxybis(1-chloropropane)	6	50.0	11 ^		51-102
621-64-7	N-Nitroso-di-n-propylamine	5	50.0	11 ^	D-230	52-111
67-72-1	Hexachloroethane	5 J	50.0	9 ^^	40-113	29-83
106-44-5	4-Methylphenol	8	80.0	10 ^		34-91
98-95-3	Nitrobenzene	5	50.0	10 ^^	35-180	46-121
78-59-1	Isophorone	5 B	50.0	11 ^^	21-196	42-123
88-75-5	2-Nitrophenol	8 J	80.0	10 ^^	29-182	43-117
105-67-9	2,4-Dimethylphenol	8 J	80.0	11 ^^	32-119	51-100
111-91-1	Bis(2-chloroethoxy)methane	6	50.0	11 ^^	33-184	45-117
120-83-2	2,4-Dichlorophenol	8	80.0	10 ^		51-108
65-85-0	Benzoic acid	10 J	160.	6 ^		10-150
120-82-1	1,2,4-Trichlorobenzene	5 J	50.0	10 ^^	44-142	38-94
91-20-3	Naphthalene	6	50.0	11 ^^	21-133	47-99
106-47-8	4-Chloroaniline	6 J	50.0	12		10-101
87-68-3	Hexachlorobutadiene	5 J	50.0	10 ^^	24-116	30-94
59-50-7	4-Chloro-3-methylphenol	9 J	80.0	12 ^^	22-147	53-110
91-57-6	2-Methylnaphthalene	6	50.0	12 ^		49-100
77-47-4	Hexachlorocyclopentadiene	u	50.0	NC		10-53
88-06-2	2,4,6-Trichlorophenol	8	80.0	10 ^^	37-144	55-110
95-95-4	2,4,5-Trichlorophenol	9	80.0	11 ^		57-111
91-58-7	2-Chloronaphthalene	6	50.0	12 ^		50-104
88-74-4	2-Nitroaniline	5 J	50.0	10 ^		42-147
208-96-8	Acenaphthylene	6 B	50.0	12 ^^	33-145	54-101
131-11-3	Dimethyl phthalate	6 B	50.0	12 ^	D-112	57-106
606-20-2	2,6-Dinitrotoluene	5	50.0	10 ^^	50-158	50-126
99-09-2	3-Nitroaniline	u	50.0	NC		10-94
83-32-9	Acenaphthene	6 B	50.0	12 ^^	47-145	55-105
51-28-5	2,4-Dinitrophenol	u	80.0	NC	D-191	10-140
132-64-9	Dibenzofuran	6 B	50.0	12 ^		54-107
100-02-7	4-Nitrophenol	u	80.0	NC	D-132	49-115
121-14-2	2,4-Dinitrotoluene	5 J	50.0	10 ^^	39-139	52-123
86-73-7	Fluorene	6 B	50.0	12 ^^	59-121	54-110
84-66-2	Diethyl phthalate	6 B	50.0	12 ^	D-114	54-107
7005-72-3	4-Chlorophenyl phenyl ether	6 B	50.0	12 ^^	25-158	53-110
100-01-6	4-Nitroaniline	5 J	50.0	11		10-149
534-52-1	4,6-Dinitro-2-methylphenol	6 J	80.0	8 ^		27-136

NOTE: Please see the attached Batch Narrative.
^: Indicates the result is outside CQAB laboratory limits which are based on historical in-house LCS data.
B: Compound also present in the method blank.
^^: The result is outside method limits and outside CQAB laboratory limits which are based on historical in-house LCS data.
J: Estimated Concentration above MDL but below LRL.
D: SW-846 term to indicate that the analyte is expected to be detectable.
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.

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DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

BNA (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/21/00	Matrix:	Water
CQAB Sample ID:	WG6578-2	Date Analyzed:	10/18/00	Units:	ug/L
Prep Method:	SW-846 3520 C	Date Reported:	10/27/00	Amount(L):	1.0
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001018ew1	Data File ID:	bna0201003	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Method Range	CQAB Range
86-30-6	N-Nitrosodiphenylamine (1)	6 B	50.0	12 ^		52-111
118-74-1	Hexachlorobenzene	6 B	50.0	12 ^	D-152	55-115
101-55-3	4-Bromophenyl phenyl ether	6 B	50.0	12 ^^	53-127	54-115
87-86-5	Pentachlorophenol	u	80.0	NC	14-176	58-111
85-01-8	Phenanthrene	6 B	50.0	12 ^^	54-120	52-108
120-12-7	Anthracene	6 B	50.0	12 ^^	27-133	52-105
84-74-2	Di-n-butyl phthalate	6 B	50.0	13 ^		50-109
206-44-0	Fluoranthene	6 B	50.0	12 ^^	26-137	58-110
129-00-0	Pyrene	6 B	50.0	12 ^^	52-115	49-108
85-68-7	Butyl benzyl phthalate	6 B	50.0	12 ^	D-157	42-114
56-55-3	Benzo(a)anthracene	6 B	50.0	11 ^^	33-143	51-110
91-94-1	3,3'-Dichlorobenzidine	4 J	50.0	8 ^	D-262	10-78
218-01-9	Chrysene	6 B	50.0	11 ^^	17-168	52-107
117-81-7	Bis(2-ethylhexyl) phthalate	6 B	50.0	13 ^	8-158	16-153
117-84-0	Di-n-octyl phthalate	7 B	50.0	14 ^	4-146	36-125
205-99-2	Benzo(b)fluoranthene	5 B	50.0	10 ^^	24-159	55-109
207-08-9	Benzo(k)fluoranthene	6 B	50.0	12 ^	11-162	54-106
50-32-8	Benzo(a)pyrene	5 JB	50.0	10 ^^	17-163	53-101
193-39-5	Indeno(1,2,3-cd)pyrene	4 JB	50.0	8 ^	D-171	51-106
53-70-3	Dibenzo(a,h)anthracene	4 JB	50.0	8 ^	D-227	52-109
191-24-2	Benzo(g,h,i)perylene	4 JB	50.0	8 ^	D-219	49-108

NOTE: Please see the attached Batch Narrative.
D: SW-846 term to indicate that the analyte is expected to be detectable.
^: Indicates the result is outside CQAB laboratory limits which are based on historical in-house LCS data.
B: Compound also present in the method blank.
^^: The result is outside method limits and outside CQAB laboratory limits which are based on historical in-house LCS data.
u: Below Method Detection Limit
J: Estimated Concentration above MDL but below LRL.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/L)
4165-60-0	Nitrobenzene-d5	10 ^^	35-114	43-120	50.0
321-60-8	2-Fluorobiphenyl	11 ^^	43-116	50-104	50.0
98904-43-9	Terphenyl-d14	11 ^^	33-141	44-113	50.0
4165-62-2	Phenol-d5	9.9 ^^	10-110	52-103	75.0
367-12-4	2-Fluorophenol	8.9 ^^	21-110	45-100	75.0
118-79-6	2,4,6-Tribromophenol	9.2 ^^	10-123	53-120	75.0

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DEPARTMENT OF THE ARMY
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BNA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/26/00	Matrix:	Soil
Client Sample ID:	AB0435	Date Received:	09/27/00	Units:	ug/kg
CQAB Sample ID:	M000992-004	Date Logged:	09/27/00	Amount (kg):	0.0252
Prep Method:	SW-846 3540 C	Date Extracted:	10/04/00	Vial Vol. (mL):	1
Analysis Method:	SW-846 8270 C	Date Analyzed:	10/30/00	Final Vol.(mL):	1
Work Group:	WG6690	Date Reported:	11/21/00	Dilution:	1
Analytical Batch:	001030es1	Instrument ID:	gcmsb	% Solids:	89.2
Analyst:	Greg O. Shearer	Data File ID:	bna1101012		

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	40 JB	220	20	99-09-2	3-Nitroaniline	u	2200	200
111-44-4	Bis(2-chloroethyl) ether	u	220	20	83-32-9	Acenaphthene	u	220	20
95-57-8	2-Chlorophenol	u	220	20	51-28-5	2,4-Dinitrophenol	u	2200	200
541-73-1	1,3-Dichlorobenzene	u	220	20	132-64-9	Dibenzofuran	u	220	20
106-46-7	1,4-Dichlorobenzene	u	220	20	100-02-7	4-Nitrophenol	u	2200	200
95-50-1	1,2-Dichlorobenzene	u	220	20	121-14-2	2,4-Dinitrotoluene	390	220	20
100-51-6	Benzyl alcohol	u	2200	200	86-73-7	Fluorene	u	220	20
95-48-7	2-Methylphenol	u	220	20	84-66-2	Diethyl phthalate	u	220	20
108-60-1	2,2'-Oxybis(1-chloropropane)	u	220	20	7005-72-3	4-Chlorophenyl phenyl ether	u	440	20
621-64-7	N-Nitroso-di-n-propylamine	u	220	20	100-01-6	4-Nitroaniline 89 %	u	2200	200
67-72-1	Hexachloroethane	u	220	20	534-52-1	4,6-Dinitro-2-methylphenol	u	2200	200
106-44-5	4-Methylphenol	u	220	20	86-30-6	N-Nitrosodiphenylamine (1)	u	440	20
98-95-3	Nitrobenzene	u	220	20	118-74-1	Hexachlorobenzene	u	220	20
78-59-1	Isophorone	u	220	20	101-55-3	4-Bromophenyl phenyl ether	u	220	20
88-75-5	2-Nitrophenol	u	440	40	87-86-5	Pentachlorophenol	u	2200	200
105-67-9	2,4-Dimethylphenol	u	440	40	85-01-8	Phenanthrene	u	220	20
111-91-1	Bis(2-chloroethoxy)methane	u	220	20	120-12-7	Anthracene	u	220	20
120-83-2	2,4-Dichlorophenol	u	220	20	84-74-2	Di-n-butyl phthalate	u	220	20
65-85-0	Benzoic acid	u	2200	200	206-44-0	Fluoranthene	u	220	20
120-82-1	1,2,4-Trichlorobenzene	u	220	20	129-00-0	Pyrene	u	220	20
91-20-3	Naphthalene	u	220	20	85-68-7	Butyl benzyl phthalate	u	220	20
106-47-8	4-Chloroaniline	u	440	40	56-55-3	Benzo(a)anthracene	u	220	20
87-68-3	Hexachlorobutadiene	u	220	20	91-94-1	3,3'-Dichlorobenzidine	u	890	80
59-50-7	4-Chloro-3-methylphenol	u	440	40	218-01-9	Chrysene	u	220	20
91-57-6	2-Methylnaphthalene	u	220	20	117-81-7	Bis(2-ethylhexyl) phthalate	60 JB	220	20
77-47-4	Hexachlorocyclopentadiene	u	890	80	117-84-0	Di-n-octyl phthalate	u	220	20
88-06-2	2,4,6-Trichlorophenol	u	220	20	205-99-2	Benzo(b)fluoranthene	u	440	20
95-95-4	2,4,5-Trichlorophenol	u	220	20	207-08-9	Benzo(k)fluoranthene	u	440	20
91-58-7	2-Chloronaphthalene	u	220	20	50-32-8	Benzo(a)pyrene	u	220	20
88-74-4	2-Nitroaniline	u	2200	200	193-39-5	Indeno(1,2,3-cd)pyrene	u	220	20
208-96-8	Acenaphthylene	u	220	20	53-70-3	Dibenzo(a,h)anthracene	u	220	20
131-11-3	Dimethyl phthalate	u	220	20	191-24-2	Benzo(g,h,i)perylene	u	220	20
606-20-2	2,6-Dinitrotoluene	u	440	20					

MDL determined according to procedures in 40CFR Appendix B to part 136
J: Estimated Concentration above MDL but below LRL.
B: Compound also present in the method blank.
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	77	25-121	59-104	6700
4165-62-2	Phenol-d5	73	24-113	61-101	6700
4165-60-0	Nitrobenzene-d5	81	23-120	61-102	4400
321-60-8	2-Fluorobiphenyl	84	30-115	60-110	4400
118-79-6	2,4,6-Tribromophenol	81	19-122	61-117	6700
98904-43-9	Terphenyl-d14	88	18-137	55-108	4400

Quality Assurance / Quality Control

Method Blank:	WG6690-1	Matrix Spike:	WG6690-4	Dilution:	NA
Lab Control Sample:	WG6690-2	Matrix Spike Duplicate:	WG6690-5	Re-analysis:	NA
Lab Matrix Duplicate:	WG6690-3	Dilution:	NA	Re-extraction:	NA

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DEPARTMENT OF THE ARMY
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BNA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/27/00	Matrix:	Soil
Client Sample ID:	AB0428	Date Received:	09/28/00	Units:	ug/kg
CQAB Sample ID:	M000997-004	Date Logged:	09/28/00	Amount (kg):	0.0251
Prep Method:	SW-846 3540 C	Date Extracted:	10/04/00	Vial Vol. (mL):	1
Analysis Method:	SW-846 8270 C	Date Analyzed:	10/30/00	Final Vol.(mL):	1
Work Group:	WG6690	Date Reported:	11/21/00	Dilution:	1
Analytical Batch:	001030es1	Instrument ID:	gcmsb	% Solids:	80.1
Analyst:	Greg O. Shearer	Data File ID:	bna1201013		

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	30 JB	250	20	99-09-2	3-Nitroaniline	u	2500	200
111-44-4	Bis(2-chloroethyl) ether	u	250	20	83-32-9	Acenaphthene	u	250	20
95-57-8	2-Chlorophenol	u	250	20	51-28-5	2,4-Dinitrophenol	u	2500	200
541-73-1	1,3-Dichlorobenzene	u	250	20	132-64-9	Dibenzofuran	u	250	20
106-46-7	1,4-Dichlorobenzene	u	250	20	100-02-7	4-Nitrophenol	u	2500	200
95-50-1	1,2-Dichlorobenzene	u	250	20	121-14-2	2,4-Dinitrotoluene	790	250	20
100-51-6	Benzyl alcohol	u	2500	200	86-73-7	Fluorene	u	250	20
95-48-7	2-Methylphenol	u	250	20	84-66-2	Diethyl phthalate	u	250	20
108-60-1	2,2'-Oxybis(1-chloropropane)	u	250	20	7005-72-3	4-Chlorophenyl phenyl ether	u	250	20
621-64-7	N-Nitroso-di-n-propylamine	u	250	20	100-01-6	4-Nitroaniline 91%	u	2500	200
67-72-1	Hexachloroethane	u	250	20	534-52-1	4,6-Dinitro-2-methylphenol	u	2500	200
106-44-5	4-Methylphenol	u	250	20	86-30-6	N-Nitrosodiphenylamine (1)	u	250	20
98-95-3	Nitrobenzene	u	250	20	118-74-1	Hexachlorobenzene	u	250	20
78-59-1	Isophorone	u	250	20	101-55-3	4-Bromophenyl phenyl ether	u	250	20
88-75-5	2-Nitrophenol	u	500	40	87-86-5	Pentachlorophenol	u	2500	200
105-67-9	2,4-Dimethylphenol	u	500	40	85-01-8	Phenanthrene	110 J	250	20
111-91-1	Bis(2-chloroethoxy)methane	u	250	20	120-12-7	Anthracene	50 J	250	20
120-83-2	2,4-Dichlorophenol	u	250	20	84-74-2	Di-n-butyl phthalate	40 JB	250	20
65-85-0	Benzoic acid	u	2500	200	206-44-0	Fluoranthene	360	250	20
120-82-1	1,2,4-Trichlorobenzene	u	250	20	129-00-0	Pyrene	290	250	20
91-20-3	Naphthalene	u	250	20	85-68-7	Butyl benzyl phthalate	u	250	20
106-47-8	4-Chloroaniline	u	500	40	56-55-3	Benzo(a)anthracene	200 J	250	20
87-68-3	Hexachlorobutadiene	u	250	20	91-94-1	3,3'-Dichlorobenzidine	u	2000	80
59-50-7	4-Chloro-3-methylphenol	u	500	40	218-01-9	Chrysene	210 J	250	20
91-57-6	2-Methylnaphthalene	u	250	20	117-81-7	Bis(2-ethylhexyl) phthalate	80 JB	250	20
77-47-4	Hexachlorocyclopentadiene	u	990	80	117-84-0	Di-n-octyl phthalate	u	250	20
88-06-2	2,4,6-Trichlorophenol	u	250	20	205-99-2	Benzo(b)fluoranthene	340 I	250	20
95-95-4	2,4,5-Trichlorophenol	u	250	20	207-08-9	Benzo(k)fluoranthene	I	250	20
91-58-7	2-Chloronaphthalene	u	250	20	50-32-8	Benzo(a)pyrene	170 J	250	20
88-74-4	2-Nitroaniline	u	2500	200	193-39-5	Indeno(1,2,3-cd)pyrene	120 J	250	20
208-96-8	Acenaphthylene	40 J	250	20	53-70-3	Dibenzo(a,h)anthracene	30 J	250	20
131-11-3	Dimethyl phthalate	u	250	20	191-24-2	Benzo(g,h,i)perylene	100 J	250	20
606-20-2	2,6-Dinitrotoluene	160 J	250	20					

MDL determined according to procedures in 40CFR Appendix B to part 136
J: Estimated Concentration above MDL but below LRL.
B: Compound also present in the method blank.
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.
I: Analytes reported as an isomeric pair due to insufficient baseline resolution.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	76	25-121	59-104	7500
4165-62-2	Phenol-d5	72	24-113	61-101	7500
4165-60-0	Nitrobenzene-d5	77	23-120	61-102	5000
321-60-8	2-Fluorobiphenyl	82	30-115	60-110	5000
118-79-6	2,4,6-Tribromophenol	93	19-122	61-117	7500
98904-43-9	Terphenyl-d14	88	18-137	55-108	5000

Quality Assurance / Quality Control

Method Blank:	WG6690-1	Matrix Spike:	WG6690-4	Dilution:	NA
Lab Control Sample:	WG6690-2	Matrix Spike Duplicate:	WG6690-5	Re-analysis:	NA
Lab Matrix Duplicate:	WG6690-3	Dilution:	NA	Re-extraction:	NA

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BNA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/27/00	Matrix:	Soil
Client Sample ID:	AB0450	Date Received:	09/28/00	Units:	ug/kg
CQAB Sample ID:	M000997-005	Date Logged:	09/28/00	Amount (kg):	0.0254
Prep Method:	SW-846 3540 C	Date Extracted:	10/04/00	Vial Vol. (mL):	1
Analysis Method:	SW-846 8270 C	Date Analyzed:	10/30/00	Final Vol.(mL):	1
Work Group:	WG6690	Date Reported:	11/21/00	Dilution:	1
Analytical Batch:	001030es1	Instrument ID:	gcmsb	% Solids:	84.0
Analyst:	Greg O. Shearer	Data File ID:	bna1301014		

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	230	20	99-09-2	3-Nitroaniline	u	2300	200
111-44-4	Bis(2-chloroethyl) ether	u	230	20	83-32-9	Acenaphthene	u	230	20
95-57-8	2-Chlorophenol	u	230	20	51-28-5	2,4-Dinitrophenol	u	2300	200
541-73-1	1,3-Dichlorobenzene	u	230	20	132-64-9	Dibenzofuran	u	230	20
106-46-7	1,4-Dichlorobenzene	u	230	20	100-02-7	4-Nitrophenol	u	2300	200
95-50-1	1,2-Dichlorobenzene	u	230	20	121-14-2	2,4-Dinitrotoluene	620	230	20
100-51-6	Benzyl alcohol	u	2300	200	86-73-7	Fluorene	u	230	20
95-48-7	2-Methylphenol	u	230	20	84-66-2	Diethyl phthalate	u	230	20
108-60-1	2,2'-Oxybis(1-chloropropane)	u	230	20	7005-72-3	4-Chlorophenyl phenyl ether	u	230	20
621-64-7	N-Nitroso-di-n-propylamine	u	230	20	100-01-6	4-Nitroaniline	u	2300	200
67-72-1	Hexachloroethane	u	230	20	534-52-1	4,6-Dinitro-2-methylphenol	u	2300	200
106-44-5	4-Methylphenol	u	230	20	86-30-6	N-Nitrosodiphenylamine (1)	u	230	20
98-95-3	Nitrobenzene	u	230	20	118-74-1	Hexachlorobenzene	u	470	20
78-59-1	Isophorone	u	230	20	101-55-3	4-Bromophenyl phenyl ether	u	470	20
88-75-5	2-Nitrophenol	u	470	40	87-86-5	Pentachlorophenol	u	4700	200
105-67-9	2,4-Dimethylphenol	u	470	40	85-01-8	Phenanthrene	u	470	20
111-91-1	Bis(2-chloroethoxy)methane	u	230	20	120-12-7	Anthracene	30 J	230	20
120-83-2	2,4-Dichlorophenol	u	230	20	84-74-2	Di-n-butyl phthalate	50 JB	230	20
65-85-0	Benzoic acid	u	2300	200	206-44-0	Fluoranthene	100 J	230	20
120-82-1	1,2,4-Trichlorobenzene	u	230	20	129-00-0	Pyrene	100 J	230	20
91-20-3	Naphthalene	u	230	20	85-68-7	Butyl benzyl phthalate	u	230	20
106-47-8	4-Chloroaniline	u	470	40	56-55-3	Benzo(a)anthracene	30 J	230	20
87-68-3	Hexachlorobutadiene	u	230	20	91-94-1	3,3'-Dichlorobenzidine	u	940	80
59-50-7	4-Chloro-3-methylphenol	u	470	40	218-01-9	Chrysene	60 J	230	20
91-57-6	2-Methylnaphthalene	u	230	20	117-81-7	Bis(2-ethylhexyl) phthalate	130 JB	230	20
77-47-4	Hexachlorocyclopentadiene	u	940	80	117-84-0	Di-n-octyl phthalate	u	230	20
88-06-2	2,4,6-Trichlorophenol	u	230	20	205-99-2	Benzo(b)fluoranthene	110 JI	230	20
95-95-4	2,4,5-Trichlorophenol	u	230	20	207-08-9	Benzo(k)fluoranthene	I	230	20
91-58-7	2-Chloronaphthalene	u	230	20	50-32-8	Benzo(a)pyrene	60 J	230	20
88-74-4	2-Nitroaniline	u	2300	200	193-39-5	Indeno(1,2,3-cd)pyrene	50 J	230	20
208-96-8	Acenaphthylene	u	230	20	53-70-3	Dibenzo(a,h)anthracene	u	230	20
131-11-3	Dimethyl phthalate	u	230	20	191-24-2	Benzo(g,h,i)perylene	40 J	230	20
606-20-2	2,6-Dinitrotoluene	120 J	230	20					

MDL determined according to procedures in 40CFR Appendix B to part 136
u: Below Method Detection Limit
J: Estimated Concentration above MDL but below LRL.
(1): Cannot be distinguished from Diphenylamine by this method.
B: Compound also present in the method blank.
I: Analytes reported as an isomeric pair due to insufficient baseline resolution.
NOTE: A large TNT peak caused difficulties with quantitation of analytes with similar retention times (hexachlorobenzene to phenanthrene). LRLs were adjusted upward because of this problem.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	76	25-121	59-104	7000
4165-62-2	Phenol-d5	68	24-113	61-101	7000
4165-60-0	Nitrobenzene-d5	75	23-120	61-102	4700
321-60-8	2-Fluorobiphenyl	80	30-115	60-110	4700
118-79-6	2,4,6-Tribromophenol	85	19-122	61-117	7000
98904-43-9	Terphenyl-d14	89	18-137	55-108	4700

Quality Assurance / Quality Control

Method Blank:	WG6690-1	Matrix Spike:	WG6690-4	Dilution:	NA
Lab Control Sample:	WG6690-2	Matrix Spike Duplicate:	WG6690-5	Re-analysis:	NA
Lab Matrix Duplicate:	WG6690-3	Dilution:	NA	Re-extraction:	NA

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DEPARTMENT OF THE ARMY
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BNA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/27/00	Matrix:	Soil
Client Sample ID:	AB0453	Date Received:	09/28/00	Units:	ug/kg
CQAB Sample ID:	M000997-006	Date Logged:	09/28/00	Amount (kg):	0.0252
Prep Method:	SW-846 3540 C	Date Extracted:	10/04/00	Vial Vol. (mL):	1
Analysis Method:	SW-846 8270 C	Date Analyzed:	11/02/00	Final Vol.(mL):	1
Work Group:	WG6690	Date Reported:	11/21/00	Dilution:	10
Analytical Batch:	001102es1	Instrument ID:	gcmsb	% Solids:	86.9
Analyst:	Greg O. Shearer	Data File ID:	bna1201013		

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	2300	20	99-09-2	3-Nitroaniline	u	23000	200
111-44-4	Bis(2-chloroethyl) ether	u	2300	20	83-32-9	Acenaphthene	u	2300	20
95-57-8	2-Chlorophenol	u	2300	20	51-28-5	2,4-Dinitrophenol	u	23000	200
541-73-1	1,3-Dichlorobenzene	u	2300	20	132-64-9	Dibenzofuran	u	2300	20
106-46-7	1,4-Dichlorobenzene	u	2300	20	100-02-7	4-Nitrophenol	u	23000	200
95-50-1	1,2-Dichlorobenzene	u	2300	20	121-14-2	2,4-Dinitrotoluene	14200	2300	20
100-51-6	Benzyl alcohol	u	23000	200	86-73-7	Fluorene	u	2300	20
95-48-7	2-Methylphenol	u	2300	20	84-66-2	Diethyl phthalate	u	2300	20
108-60-1	2,2'-Oxybis(1-chloropropane)	u	2300	20	7005-72-3	4-Chlorophenyl phenyl ether	u	2300	20
621-64-7	N-Nitroso-di-n-propylamine	u	2300	20	100-01-6	4-Nitroaniline	u	23000	200
67-72-1	Hexachloroethane	u	2300	20	534-52-1	4,6-Dinitro-2-methylphenol	u	36000	200
106-44-5	4-Methylphenol	u	2300	20	86-30-6	N-Nitrosodiphenylamine (1)	u	2300	20
98-95-3	Nitrobenzene	u	2300	20	118-74-1	Hexachlorobenzene	u	4600	20
78-59-1	Isophorone	u	2300	20	101-55-3	4-Bromophenyl phenyl ether	u	4600	20
88-75-5	2-Nitrophenol	u	4600	40	87-86-5	Pentachlorophenol	u	46000	200
105-67-9	2,4-Dimethylphenol	u	4600	40	85-01-8	Phenanthrene	u	4600	20
111-91-1	Bis(2-chloroethoxy)methane	u	2300	20	120-12-7	Anthracene	u	4600	20
120-83-2	2,4-Dichlorophenol	u	2300	20	84-74-2	Di-n-butyl phthalate	u	2300	20
65-85-0	Benzoic acid	u	23000	200	206-44-0	Fluoranthene	800 J	2300	20
120-82-1	1,2,4-Trichlorobenzene	u	2300	20	129-00-0	Pyrene	400 J	2300	20
91-20-3	Naphthalene	u	2300	20	85-68-7	Butyl benzyl phthalate	u	2300	20
106-47-8	4-Chloroaniline	u	4600	40	56-55-3	Benzo(a)anthracene	300 J	2300	20
87-68-3	Hexachlorobutadiene	u	2300	20	91-94-1	3,3'-Dichlorobenzidine	u	9100	80
59-50-7	4-Chloro-3-methylphenol	u	4600	40	218-01-9	Chrysene	600 J	2300	20
91-57-6	2-Methylnaphthalene	u	2300	20	117-81-7	Bis(2-ethylhexyl) phthalate	u	2300	20
77-47-4	Hexachlorocyclopentadiene	u	9100	80	117-84-0	Di-n-octyl phthalate	u	2300	20
88-06-2	2,4,6-Trichlorophenol	u	2300	20	205-99-2	Benzo(b)fluoranthene	1200 JI	2300	20
95-95-4	2,4,5-Trichlorophenol	u	2300	20	207-08-9	Benzo(k)fluoranthene	I	2300	20
91-58-7	2-Chloronaphthalene	u	2300	20	50-32-8	Benzo(a)pyrene	200 J	2300	20
88-74-4	2-Nitroaniline	u	23000	200	193-39-5	Indeno(1,2,3-cd)pyrene	300 J	2300	20
208-96-8	Acenaphthylene	u	2300	20	53-70-3	Dibenzo(a,h)anthracene	u	2300	20
131-11-3	Dimethyl phthalate	u	2300	20	191-24-2	Benzo(g,h,i)perylene	u	2300	20
606-20-2	2,6-Dinitrotoluene	6530	2300	20					

MDL determined according to procedures in 40CFR Appendix B to part 136
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.
J: Estimated Concentration above MDL but below LRL.
I: Analytes reported as an isomeric pair due to insufficient baseline resolution.
NOTE: Due to a huge TNT peak in the concentrated extract, the extract had to be diluted 1:10 before acceptable internal standard areas could be achieved. Even with this dilution, the TNT peak still interfered with quantitation of analytes with similar retention times (hexachlorobenzene to anthracene). LRLs were adjusted upward because of this problem.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	74	25-121	59-104	6900
4165-62-2	Phenol-d5	63	24-113	61-101	6900
4165-60-0	Nitrobenzene-d5	81	23-120	61-102	4600
321-60-8	2-Fluorobiphenyl	86	30-115	60-110	4600
118-79-6	2,4,6-Tribromophenol	71	19-122	61-117	6900
98904-43-9	Terphenyl-d14	92	18-137	55-108	4600

Quality Assurance / Quality Control

Method Blank:	WG6690-1	Matrix Spike:	WG6690-4	Dilution:	NA
Lab Control Sample:	WG6690-2	Matrix Spike Duplicate:	WG6690-5	Re-analysis:	NA
Lab Matrix Duplicate:	WG6690-3	Dilution:	NA	Re-extraction:	NA

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BNA (Method Blank) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	10/04/00	Matrix:	Soil
CQAB Sample ID:	WG6690-1	Date Analyzed:	10/30/00	Units:	ug/kg
Prep Method:	SW-846 3540 C	Date Reported:	11/21/00	Amount (kg):	0.025
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001030es1	Data File ID:	bna0101002	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	20 J	200	20	99-09-2	3-Nitroaniline	u	2000	200
111-44-4	Bis(2-chloroethyl) ether	u	200	20	83-32-9	Acenaphthene	u	200	20
95-57-8	2-Chlorophenol	u	200	20	51-28-5	2,4-Dinitrophenol	u	2000	200
541-73-1	1,3-Dichlorobenzene	u	200	20	132-64-9	Dibenzofuran	u	200	20
106-46-7	1,4-Dichlorobenzene	u	200	20	100-02-7	4-Nitrophenol	u	2000	200
95-50-1	1,2-Dichlorobenzene	u	200	20	121-14-2	2,4-Dinitrotoluene	u	200	20
100-51-6	Benzyl alcohol	u	2000	200	86-73-7	Fluorene	u	200	20
95-48-7	2-Methylphenol	u	200	20	84-66-2	Diethyl phthalate	u	200	20
108-60-1	2,2'-Oxybis(1-chloropropane)	u	200	20	7005-72-3	4-Chlorophenyl phenyl ether	u	200	20
621-64-7	N-Nitroso-di-n-propylamine	u	200	20	100-01-6	4-Nitroaniline	u	2000	200
67-72-1	Hexachloroethane	u	200	20	534-52-1	4,6-Dinitro-2-methylphenol	u	2000	200
106-44-5	4-Methylphenol	u	200	20	86-30-6	N-Nitrosodiphenylamine (1)	u	200	20
98-95-3	Nitrobenzene	u	200	20	118-74-1	Hexachlorobenzene	u	200	20
78-59-1	Isophorone	u	200	20	101-55-3	4-Bromophenyl phenyl ether	u	200	20
88-75-5	2-Nitrophenol	u	400	40	87-86-5	Pentachlorophenol	u	2000	200
105-67-9	2,4-Dimethylphenol	u	400	40	85-01-8	Phenanthrene	u	200	20
111-91-1	Bis(2-chloroethoxy)methane	u	200	20	120-12-7	Anthracene	u	200	20
120-83-2	2,4-Dichlorophenol	u	200	20	84-74-2	Di-n-butyl phthalate	20 J	200	20
65-85-0	Benzoic acid	u	2000	200	206-44-0	Fluoranthene	u	200	20
120-82-1	1,2,4-Trichlorobenzene	u	200	20	129-00-0	Pyrene	u	200	20
91-20-3	Naphthalene	u	200	20	85-68-7	Butyl benzyl phthalate	u	200	20
106-47-8	4-Chloroaniline	u	400	40	56-55-3	Benzo(a)anthracene	u	200	20
87-68-3	Hexachlorobutadiene	u	200	20	91-94-1	3,3'-Dichlorobenzidine	u	800	80
59-50-7	4-Chloro-3-methylphenol	u	400	40	218-01-9	Chrysene	u	200	20
91-57-6	2-Methylnaphthalene	u	200	20	117-81-7	Bis(2-ethylhexyl) phthalate	70 J	200	20
77-47-4	Hexachlorocyclopentadiene	u	800	80	117-84-0	Di-n-octyl phthalate	u	200	20
88-06-2	2,4,6-Trichlorophenol	u	200	20	205-99-2	Benzo(b)fluoranthene	u	200	20
95-95-4	2,4,5-Trichlorophenol	u	200	20	207-08-9	Benzo(k)fluoranthene	u	200	20
91-58-7	2-Chloronaphthalene	u	200	20	50-32-8	Benzo(a)pyrene	u	200	20
88-74-4	2-Nitroaniline	u	2000	200	193-39-5	Indeno(1,2,3-cd)pyrene	u	200	20
208-96-8	Acenaphthylene	u	200	20	53-70-3	Dibenzo(a,h)anthracene	u	200	20
131-11-3	Dimethyl phthalate	u	200	20	191-24-2	Benzo(g,h,i)perylene	u	200	20
606-20-2	2,6-Dinitrotoluene	u	200	20					

J: Estimated Concentration above MDL but below LRL.
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	53 @	25-121	59-104	6000
4165-62-2	Phenol-d5	63	24-113	61-101	6000
4165-60-0	Nitrobenzene-d5	69	23-120	61-102	4000
321-60-8	2-Fluorobiphenyl	71	30-115	60-110	4000
118-79-6	2,4,6-Tribromophenol	43 @	19-122	61-117	6000
98904-43-9	Terphenyl-d14	74	18-137	55-108	4000

@: The result is within method limits but outside CQAB laboratory limits which are based on historical in-house LCS data.

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BNA (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	10/04/00	Sample ID:	Sample	LD
Client Sample ID:	Batch Specific	Date Analyzed:	10/30/00	CQAB No.:	M000987-001	WG6690-3
Prep Method:	SW-846 3540 C	Date Reported:	11/21/00	Data File ID:	bna0801009	bna0901010
Analysis Method:	SW-846 8270 C	Matrix:	Soil	Amount(kg):	0.0251	0.0252
Instrument ID:	gcmsb	Units:	ug/kg	Vial Vol.(mL):	1	1
Analytical Batch:	001030es1	% Solids:	87.0	Final Vol.(mL):	1	1
Analyst:	Greg O. Shearer			Dilution Factor:	1	1

CAS Number	Compound	Sample Result	LD Result	LRL	MDL	RPD (%)	CQAB Lab RPD Limit
108-95-2	Phenol	u	u	230	20	NC	40
111-44-4	Bis(2-chloroethyl) ether	u	u	230	20	NC	40
95-57-8	2-Chlorophenol	u	u	230	20	NC	40
541-73-1	1,3-Dichlorobenzene	u	u	230	20	NC	40
106-46-7	1,4-Dichlorobenzene	u	u	230	20	NC	40
95-50-1	1,2-Dichlorobenzene	u	u	230	20	NC	40
100-51-6	Benzyl alcohol	u	u	2300	200	NC	60
95-48-7	2-Methylphenol	u	u	230	20	NC	40
108-60-1	2,2'-Oxybis(1-chloropropane)	u	u	230	20	NC	40
621-64-7	N-Nitroso-di-n-propylamine	u	u	230	20	NC	40
67-72-1	Hexachloroethane	u	u	230	20	NC	40
106-44-5	4-Methylphenol	u	u	230	20	NC	40
98-95-3	Nitrobenzene	u	u	230	20	NC	40
78-59-1	Isophorone	u	u	230	20	NC	40
88-75-5	2-Nitrophenol	u	u	460	40	NC	60
105-67-9	2,4-Dimethylphenol	u	u	460	40	NC	60
111-91-1	Bis(2-chloroethoxy)methane	u	u	230	20	NC	40
120-83-2	2,4-Dichlorophenol	u	u	230	20	NC	40
65-85-0	Benzoic acid	u	u	2300	200	NC	60
120-82-1	1,2,4-Trichlorobenzene	u	u	230	20	NC	40
91-20-3	Naphthalene	u	u	230	20	NC	40
106-47-8	4-Chloroaniline	u	u	460	40	NC	60
87-68-3	Hexachlorobutadiene	u	u	230	20	NC	40
59-50-7	4-Chloro-3-methylphenol	u	u	460	40	NC	40
91-57-6	2-Methylnaphthalene	u	80 J	230	20	NC	40
77-47-4	Hexachlorocyclopentadiene	u	u	910	80	NC	60
88-06-2	2,4,6-Trichlorophenol	u	u	230	20	NC	40
95-95-4	2,4,5-Trichlorophenol	u	u	230	20	NC	40
91-58-7	2-Chloronaphthalene	u	u	230	20	NC	40
88-74-4	2-Nitroaniline	u	u	2300	200	NC	60
208-96-8	Acenaphthylene	u	u	230	20	NC	40
131-11-3	Dimethyl phthalate	u	u	230	20	NC	40
606-20-2	2,6-Dinitrotoluene	200 J	3750	230	20	X	40
99-09-2	3-Nitroaniline	u	u	2300	200	NC	60
83-32-9	Acenaphthene	u	u	230	20	NC	40
51-28-5	2,4-Dinitrophenol	u	u	2300	200	NC	60
132-64-9	Dibenzofuran	u	u	230	20	NC	40
100-02-7	4-Nitrophenol	u	u	2300	200	NC	60
121-14-2	2,4-Dinitrotoluene	590	21600 D	230	20	189 #	40
86-73-7	Fluorene	u	u	230	20	NC	40
84-66-2	Diethyl phthalate	u	u	230	20	NC	40
7005-72-3	4-Chlorophenyl phenyl ether	u	u	230	20	NC	40
100-01-6	4-Nitroaniline	u	u	2300	200	NC	60
534-52-1	4,6-Dinitro-2-methylphenol	u	u	2300	200	NC	60
86-30-6	N-Nitrosodiphenylamine (1)	u	u	230	20	NC	40
118-74-1	Hexachlorobenzene	u	u	230	20	NC	40

NC: Parameter is Not Calculable.
u: Below Method Detection Limit
J: Estimated Concentration above MDL but below LRL.
X: RPD not calculated due to the uncertainty associated with estimated concentrations.
(1): Cannot be distinguished from Diphenylamine by this method.
D: Result derived from 1:10 dilution of extract (see 001116es1.b/bna0501006)
#: The result is above the laboratory RPD limit.

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BNA (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	10/04/00	Sample ID:	Sample	LD
Client Sample ID:	Batch Specific	Date Analyzed:	10/30/00	CQAB No.:	M000987-001	WG6690-3
Prep Method:	SW-846 3540 C	Date Reported:	11/21/00	Data File ID:	bna0801009	bna0901010
Analysis Method:	SW-846 8270 C	Matrix:	Soil	Amount(kg):	0.0251	0.0252
Instrument ID:	gcmsb	Units:	ug/kg	Vial Vol.(mL):	1	1
Analytical Batch:	001030es1	% Solids:	87.0	Final Vol.(mL):	1	1
Analyst:	Greg O. Shearer			Dilution Factor:	1	1

CAS Number	Compound	Sample Result	LD Result	LRL	MDL	RPD (%)	CQAB Lab RPD Limit
101-55-3	4-Bromophenyl phenyl ether	u	u	230	20	NC	40
87-86-5	Pentachlorophenol	u	u	2300	200	NC	60
85-01-8	Phenanthrene	u	40 J	230	20	NC	40
120-12-7	Anthracene	u	u	230	20	NC	40
84-74-2	Di-n-butyl phthalate	u	150 JB	230	20	NC	40
206-44-0	Fluoranthene	u	u	230	20	NC	40
129-00-0	Pyrene	u	u	230	20	NC	40
85-68-7	Butyl benzyl phthalate	u	u	230	20	NC	40
56-55-3	Benzo(a)anthracene	u	u	230	20	NC	40
91-94-1	3,3'-Dichlorobenzidine	u	u	910	80	NC	60
218-01-9	Chrysene	u	u	230	20	NC	40
117-81-7	Bis(2-ethylhexyl) phthalate	500 B	100 JB	230	20	X	40
117-84-0	Di-n-octyl phthalate	30 J	u	230	20	NC	40
205-99-2	Benzo(b)fluoranthene	u	u	230	20	NC	40
207-08-9	Benzo(k)fluoranthene	u	u	230	20	NC	40
50-32-8	Benzo(a)pyrene	u	u	230	20	NC	40
193-39-5	Indeno(1,2,3-cd)pyrene	u	u	230	20	NC	40
53-70-3	Dibenzo(a,h)anthracene	u	u	230	20	NC	40
191-24-2	Benzo(g,h,i)perylene	u	u	230	20	NC	40

NC: Parameter is Not Calculable.
u: Below Method Detection Limit
J: Estimated Concentration above MDL but below LRL.
B: Compound also present in the method blank.
X: RPD not calculated due to the uncertainty associated with estimated concentrations.

Method Quality Control

CAS Number	Surrogate Standard Name	Added (ug/kg)	Sample (ug/kg)	Sample Rec (%)	Added Dup (ug/kg)	Dup (ug/kg)	Dup Rec (%)	Method % Rec Limits	CQAB % Rec Limits	RPD (%)	CQAB Lab RPD Limit
367-12-4	2-Fluorophenol	6860	4520	66	6830	4600	67	25-121	59-104	2	40
4165-62-2	Phenol-d5	6860	4330	63	6830	4430	65	24-113	61-101	3	40
4165-60-0	Nitrobenzene-d5	4570	3030	66	4560	3020	66	23-120	61-102	0	40
321-60-8	2-Fluorobiphenyl	4570	3070	67	4560	3100	68	30-115	60-110	1	40
118-79-6	2,4,6-Tribromophenol	6860	4850	71	6830	5150	75	19-122	61-117	5	40
98904-43-9	Terphenyl-d14	4570	3210	70	4560	3130	69	18-137	55-108	1	40

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BNA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	10/04/00	Sample ID:	MS	MSD
Client Sample ID:	Batch Specific	Date Analyzed:	11/02/00	CQAB No.:	WG6690-4	WG6690-5
CQAB Sample ID:	M000987-001	Date Reported:	11/21/00	Data File ID:	bna0901010	bna1001011
Prep Method:	SW-846 3540 C	Matrix:	Soil	Amount(kg):	0.0250	0.0254
Analysis Method:	SW-846 8270 C	Units:	ug/kg	Vial Vol.(mL):	1	1
Analytical Batch:	001102es1	% Solids:	87.0	Final Vol.(mL):	1	1
Analyst:	Greg O. Shearer	Instrument ID:	gcmsb	Dilution Factor:	1	1

CAS Number	Compound	## Sample Result	MS Spike	MS Conc	MS %Rec	MSD Spike	MSD Conc	MSD %Rec	RPD (%)	Method Limits RPD	Method Limits %Rec	Lab Limits RPD	Lab Limits %Rec
108-95-2	Phenol	u	3670	3240	88	3630	3180	88	0	35	26-90	40	57-109
95-57-8	2-Chlorophenol	u	3670	3300	90	3630	3110	86	5	50	25-102	40	64-106
106-46-7	1,4-Dichlorobenzene	u	2300	1760	77	2270	1800	79	3	27	28-104	40	52-112
621-64-7	N-Nitroso-di-n-propylamine	u	2300	2120	92	2270	2010	89	3	38	41-126	40	64-108
120-82-1	1,2,4-Trichlorobenzene	u	2300	2020	88	2270	1960	86	2	23	38-107	40	59-113
59-50-7	4-Chloro-3-methylphenol	u	3670	3510	96	3630	3410	94	2	33	26-103	40	64-109
83-32-9	Acenaphthene	u	2300	2070	90	2270	1970	87	3	19	31-137	40	65-111
100-02-7	4-Nitrophenol	u	3670	3090	84	3630	2740	76	10	50	11-114	60	65-124
121-14-2	2,4-Dinitrotoluene	590	2300	2820	97 *	2270	2830	99 *	2	47	28-89	40	56-138
87-86-5	Pentachlorophenol	u	3670	3370	92	3630	3210	88	4	47	17-109	60	61-125
129-00-0	Pyrene	u	2300	2020	88	2270	2040	90	2	36	35-142	40	59-115

u: Below Method Detection Limit
##: Sample result used for spike recovery calculation is adjusted for the amount of sample used for the MS/MSD.
%Rec: Percent of the spike recovered from the matrix
*: Indicates the value is outside method limits but within CQAB laboratory limits which are based on historical in-house LCS data

Method Quality Control

CAS Number	Surrogate Standard Name	Added (ug/kg)	MS (ug/kg)	MS Rec (%)	Added MSD (ug/kg)	MSD (ug/kg)	MSD Rec (%)	Method %Rec Limits	CQAB %Rec Limits	RPD (%)	CQAB Lab RPD Limit
367-12-4	2-Fluorophenol	6890	5420	79	6800	5260	77	25-121	59-104	3	40
4165-62-2	Phenol-d5	6890	5460	79	6800	4990	73	24-113	61-101	8	40
4165-60-0	Nitrobenzene-d5	4590	3700	81	4530	3600	79	23-120	61-102	2	40
321-60-8	2-Fluorobiphenyl	4590	3660	80	4530	3560	79	30-115	60-110	1	40
118-79-6	2,4,6-Tribromophenol	6890	5830	85	6800	5670	83	19-122	61-117	2	40
98904-43-9	Terphenyl-d14	4590	3710	81	4530	3770	83	18-137	55-108	2	40

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BNA (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	10/04/00	Matrix:	Soil
CQAB Sample ID:	WG6690-2	Date Analyzed:	10/30/00	Units:	ug/kg
Prep Method:	SW-846 3540 C	Date Reported:	11/21/00	Amount(kg):	0.025
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001030es1	Data File ID:	bna0201003	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Method Range	CQAB Range
108-95-2	Phenol	2640 B	3200	82	5-112	57-109
111-44-4	Bis(2-chloroethyl) ether	1500	2000	75	12-158	53-108
95-57-8	2-Chlorophenol	2630	3200	82	23-134	64-106
541-73-1	1,3-Dichlorobenzene	1480	2000	74	D-172	58-107
106-46-7	1,4-Dichlorobenzene	1540	2000	77	20-124	52-112
95-50-1	1,2-Dichlorobenzene	1580	2000	79	32-129	53-115
100-51-6	Benzyl alcohol	1700 J	2000	85		71-107
95-48-7	2-Methylphenol	2560	3200	80		63-109
108-60-1	2,2'-Oxybis(1-chloropropane)	1700	2000	85		64-107
621-64-7	N-Nitroso-di-n-propylamine	1700	2000	85	D-230	64-108
67-72-1	Hexachloroethane	1530	2000	77	40-113	60-106
106-44-5	4-Methylphenol	2580	3200	81		53-115
98-95-3	Nitrobenzene	1590	2000	79	35-180	65-110
78-59-1	Isophorone	1580	2000	79	21-196	62-106
88-75-5	2-Nitrophenol	2650	3200	83	29-182	60-123
105-67-9	2,4-Dimethylphenol	2450	3200	77	32-119	33-118
111-91-1	Bis(2-chloroethoxy)methane	1660	2000	83	33-184	65-109
120-83-2	2,4-Dichlorophenol	2660	3200	83		64-112
65-85-0	Benzoic acid	5000	6400	78		10-150
120-82-1	1,2,4-Trichlorobenzene	1650	2000	82	44-142	59-113
91-20-3	Naphthalene	1660	2000	83	21-133	63-112
106-47-8	4-Chloroaniline	460	2000	23		10-48
87-68-3	Hexachlorobutadiene	1740	2000	87	24-116	61-111
59-50-7	4-Chloro-3-methylphenol	2700	3200	85	22-147	64-109
91-57-6	2-Methylnaphthalene	1600	2000	80		65-111
77-47-4	Hexachlorocyclopentadiene	760 J	2000	38		10-84
88-06-2	2,4,6-Trichlorophenol	2760	3200	86	37-144	67-114
95-95-4	2,4,5-Trichlorophenol	2800	3200	87		69-117
91-58-7	2-Chloronaphthalene	1650	2000	82		64-115
88-74-4	2-Nitroaniline	1560 J	2000	78		63-126
208-96-8	Acenaphthylene	1700	2000	85	33-145	66-111
131-11-3	Dimethyl phthalate	1650	2000	83	D-112	64-112
606-20-2	2,6-Dinitrotoluene	1560	2000	78	50-158	55-139
99-09-2	3-Nitroaniline	1570 J	2000	79		10-150
83-32-9	Acenaphthene	1660	2000	83	47-145	65-111
51-28-5	2,4-Dinitrophenol	2800	3200	88	D-191	33-150
132-64-9	Dibenzofuran	1630	2000	81		65-114
100-02-7	4-Nitrophenol	2460	3200	77	D-132	65-124
121-14-2	2,4-Dinitrotoluene	1680	2000	84	39-139	56-138
86-73-7	Fluorene	1660	2000	83	59-121	63-115
84-66-2	Diethyl phthalate	1670	2000	83	D-114	63-111
7005-72-3	4-Chlorophenyl phenyl ether	1770	2000	88	25-158	62-116
100-01-6	4-Nitroaniline	1610 J	2000	81		39-150
534-52-1	4,6-Dinitro-2-methylphenol	2770	3200	87		50-143
86-30-6	N-Nitrosodiphenylamine (1)	1640	2000	82		23-150
118-74-1	Hexachlorobenzene	1670	2000	84	D-152	60-116
101-55-3	4-Bromophenyl phenyl ether	1710	2000	85	53-127	58-121

B: Compound also present in the method blank.
D: SW-846 term to indicate that the analyte is expected to be detectable.
J: Estimated Concentration above MDL but below LRL.
(1): Cannot be distinguished from Diphenylamine by this method.

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C103

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BNA (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	10/04/00	Matrix:	Soil
CQAB Sample ID:	WG6690-2	Date Analyzed:	10/30/00	Units:	ug/kg
Prep Method:	SW-846 3540 C	Date Reported:	11/21/00	Amount(kg):	0.025
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001030es1	Data File ID:	bna0201003	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Method Range	CQAB Range
87-86-5	Pentachlorophenol	2860	3200	89	14-176	61-125
85-01-8	Phenanthrene	1630	2000	81	54-120	64-113
120-12-7	Anthracene	1620	2000	81	27-133	62-113
84-74-2	Di-n-butyl phthalate	1600 B	2000	80		59-122
206-44-0	Fluoranthene	1690	2000	85	26-137	66-117
129-00-0	Pyrene	1530	2000	76	52-115	59-115
85-68-7	Butyl benzyl phthalate	1510	2000	75	D-152	61-117
56-55-3	Benzo(a)anthracene	1580	2000	79	33-143	63-115
91-94-1	3,3'-Dichlorobenzidine	1630	2000	81	D-262	25-150
218-01-9	Chrysene	1590	2000	79	17-168	64-112
117-81-7	Bis(2-ethylhexyl) phthalate	1510 B	2000	76	8-158	61-127
117-84-0	Di-n-octyl phthalate	1580	2000	79	4-146	60-121
205-99-2	Benzo(b)fluoranthene	1590	2000	80	24-159	60-113
207-08-9	Benzo(k)fluoranthene	1470	2000	74	11-162	62-107
50-32-8	Benzo(a)pyrene	1570	2000	79	17-163	62-109
193-39-5	Indeno(1,2,3-cd)pyrene	1540	2000	77	D-171	60-122
53-70-3	Dibenzo(a,h)anthracene	1510	2000	75	D-227	57-128
191-24-2	Benzo(g,h,i)perylene	1530	2000	76	D-219	59-118

B: Compound also present in the method blank.
D: SW-846 term to indicate that the analyte is expected to be detectable.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	73	25-121	59-104	6000
4165-62-2	Phenol-d5	75	24-113	61-101	6000
4165-60-0	Nitrobenzene-d5	73	23-120	61-102	4000
321-60-8	2-Fluorobiphenyl	72	30-115	60-110	4000
118-79-6	2,4,6-Tribromophenol	82	19-122	61-117	6000
98904-43-9	Terphenyl-d14	71	18-137	55-108	4000

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BNA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/18/00	Matrix:	Soil
Client Sample ID:	AB1017	Date Received:	09/20/00	Units:	ug/kg
CQAB Sample ID:	M000975-001	Date Logged:	09/21/00	Amount (kg):	0.0250
Prep Method:	SW-846 3540 C	Date Extracted:	09/25/00	Vial Vol. (mL):	1
Analysis Method:	SW-846 8270 C	Date Analyzed:	10/24/00	Final Vol.(mL):	1
Work Group:	WG6579	Date Reported:	11/13/00	Dilution:	1
Analytical Batch:	001024es1	Instrument ID:	gcmsb	% Solids:	69.5
Analyst:	Greg O. Shearer	Data File ID:	bna0801009		

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	290	20	99-09-2	3-Nitroaniline	u	2900	200
111-44-4	Bis(2-chloroethyl) ether	u	290	20	83-32-9	Acenaphthene	u	290	20
95-57-8	2-Chlorophenol	u	290	20	51-28-5	2,4-Dinitrophenol	u	2900	200
541-73-1	1,3-Dichlorobenzene	u	290	20	132-64-9	Dibenzofuran	u	290	20
106-46-7	1,4-Dichlorobenzene	u	290	20	100-02-7	4-Nitrophenol	u	2900	200
95-50-1	1,2-Dichlorobenzene	u	290	20	121-14-2	2,4-Dinitrotoluene	u	290	20
100-51-6	Benzyl alcohol	u	2900	200	86-73-7	Fluorene	u	290	20
95-48-7	2-Methylphenol	u	290	20	84-66-2	Diethyl phthalate	u	290	20
108-60-1	2,2'-Oxybis(1-chloropropane)	u	290	20	7005-72-3	4-Chlorophenyl phenyl ether	u	290	20
621-64-7	N-Nitroso-di-n-propylamine	u	290	20	100-01-6	4-Nitroaniline	u	2900	200
67-72-1	Hexachloroethane	u	290	20	534-52-1	4,6-Dinitro-2-methylphenol	u	2900	200
106-44-5	4-Methylphenol	u	290	20	86-30-6	N-Nitrosodiphenylamine (1)	u	290	20
98-95-3	Nitrobenzene	u	290	20	118-74-1	Hexachlorobenzene	u	290	20
78-59-1	Isophorone	u	290	20	101-55-3	4-Bromophenyl phenyl ether	u	290	20
88-75-5	2-Nitrophenol	u	570	40	87-86-5	Pentachlorophenol	u	2900	200
105-67-9	2,4-Dimethylphenol	u	570	40	85-01-8	Phenanthrene	u	290	20
111-91-1	Bis(2-chloroethoxy)methane	u	290	20	120-12-7	Anthracene	u	290	20
120-83-2	2,4-Dichlorophenol	u	290	20	84-74-2	Di-n-butyl phthalate	u	290	20
65-85-0	Benzoic acid	u	2900	200	206-44-0	Fluoranthene	u	290	20
120-82-1	1,2,4-Trichlorobenzene	u	290	20	129-00-0	Pyrene	u	290	20
91-20-3	Naphthalene	u	290	20	85-68-7	Butyl benzyl phthalate	u	290	20
106-47-8	4-Chloroaniline	u	570	40	56-55-3	Benzo(a)anthracene	u	290	20
87-68-3	Hexachlorobutadiene	u	290	20	91-94-1	3,3'-Dichlorobenzidine	u	1100	80
59-50-7	4-Chloro-3-methylphenol	u	570	40	218-01-9	Chrysene	u	290	20
91-57-6	2-Methylnaphthalene	u	290	20	117-81-7	Bis(2-ethylhexyl) phthalate	110 JB	290	20
77-47-4	Hexachlorocyclopentadiene	u	1100	80	117-84-0	Di-n-octyl phthalate	u	290	20
88-06-2	2,4,6-Trichlorophenol	u	290	20	205-99-2	Benzo(b)fluoranthene	u	290	20
95-95-4	2,4,5-Trichlorophenol	u	290	20	207-08-9	Benzo(k)fluoranthene	u	290	20
91-58-7	2-Chloronaphthalene	u	290	20	50-32-8	Benzo(a)pyrene	u	290	20
88-74-4	2-Nitroaniline	u	2900	200	193-39-5	Indeno(1,2,3-cd)pyrene	u	290	20
208-96-8	Acenaphthylene	u	290	20	53-70-3	Dibenzo(a,h)anthracene	u	290	20
131-11-3	Dimethyl phthalate	u	290	20	191-24-2	Benzo(g,h,i)perylene	u	290	20
606-20-2	2,6-Dinitrotoluene	u	290	20					

MDL determined according to procedures in 40CFR Appendix B to part 136
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.
J: Estimated Concentration above MDL but below LRL.
B: Compound also present in the method blank.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	68	25-121	59-104	8600
4165-62-2	Phenol-d5	66	24-113	61-101	8600
4165-60-0	Nitrobenzene-d5	66	23-120	61-102	5700
321-60-8	2-Fluorobiphenyl	69	30-115	60-110	5700
118-79-6	2,4,6-Tribromophenol	79	19-122	61-117	8600
98904-43-9	Terphenyl-d14	76	18-137	55-108	5700

Quality Assurance / Quality Control

Method Blank:	WG6579-1	Matrix Spike:	WG6579-4	Dilution:	NA
Lab Control Sample:	WG6579-2	Matrix Spike Duplicate:	WG6579-5	Re-analysis:	NA
Lab Matrix Duplicate:	WG6579-3	Dilution:	NA	Re-extraction:	NA

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DEPARTMENT OF THE ARMY
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BNA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/19/00	Matrix:	Soil
Client Sample ID:	AB1019	Date Received:	09/21/00	Units:	ug/kg
CQAB Sample ID:	M000975-004	Date Logged:	09/21/00	Amount (kg):	0.0102
Prep Method:	SW-846 3540 C	Date Extracted:	09/25/00	Vial Vol. (mL):	1
Analysis Method:	SW-846 8270 C	Date Analyzed:	10/24/00	Final Vol. (mL):	1
Work Group:	WG6579	Date Reported:	11/13/00	Dilution:	1
Analytical Batch:	001024es1	Instrument ID:	gcmsb	% Solids:	75.9
Analyst:	Greg O. Shearer	Data File ID:	bna0901010		

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	650	50	99-09-2	3-Nitroaniline	u	6500	500
111-44-4	Bis(2-chloroethyl) ether	u	650	50	83-32-9	Acenaphthene	u	650	50
95-57-8	2-Chlorophenol	u	650	50	51-28-5	2,4-Dinitrophenol	u	6500	500
541-73-1	1,3-Dichlorobenzene	u	650	50	132-64-9	Dibenzofuran	u	650	50
106-46-7	1,4-Dichlorobenzene	u	650	50	100-02-7	4-Nitrophenol	u	6500	500
95-50-1	1,2-Dichlorobenzene	u	650	50	121-14-2	2,4-Dinitrotoluene	140 J	650	50
100-51-6	Benzyl alcohol	u	6500	500	86-73-7	Fluorene	u	650	50
95-48-7	2-Methylphenol	u	650	50	84-66-2	Diethyl phthalate	u	650	50
108-60-1	2,2'-Oxybis(1-chloropropane)	u	650	50	7005-72-3	4-Chlorophenyl phenyl ether	u	650	50
621-64-7	N-Nitroso-di-n-propylamine	u	650	50	100-01-6	4-Nitroaniline 74%	u	6500	500
67-72-1	Hexachloroethane	u	650	50	534-52-1	~~4,6-Dinitro-2-~~methylphenol	u	6500	500
106-44-5	4-Methylphenol	u	650	50	86-30-6	N-Nitrosodiphenylamine (1)	u	650	50
98-95-3	Nitrobenzene	u	650	50	118-74-1	Hexachlorobenzene	u	650	50
78-59-1	Isophorone	u	650	50	101-55-3	4-Bromophenyl phenyl ether	u	650	50
88-75-5	2-Nitrophenol	u	1300	100	87-86-5	Pentachlorophenol	u	6500	500
105-67-9	2,4-Dimethylphenol	u	1300	100	85-01-8	Phenanthrene	u	650	50
111-91-1	Bis(2-chloroethoxy)methane	u	650	50	120-12-7	Anthracene	u	650	50
120-83-2	2,4-Dichlorophenol	u	650	50	84-74-2	Di-n-butyl phthalate	u	650	50
65-85-0	Benzoic acid	u	6500	500	206-44-0	Fluoranthene	70 J	650	50
120-82-1	1,2,4-Trichlorobenzene	u	650	50	129-00-0	Pyrene	70 J	650	50
91-20-3	Naphthalene	u	650	50	85-68-7	Butyl benzyl phthalate	u	650	50
106-47-8	4-Chloroaniline	u	1300	100	56-55-3	Benzo(a)anthracene	u	650	50
87-68-3	Hexachlorobutadiene	u	650	50	91-94-1	3,3'-Dichlorobenzidine	u	2600	200
59-50-7	4-Chloro-3-methylphenol	u	1300	100	218-01-9	Chrysene	u	650	50
91-57-6	2-Methylnaphthalene	u	650	50	117-81-7	Bis(2-ethylhexyl) phthalate	160 JB	650	50
77-47-4	Hexachlorocyclopentadiene	u	2600	200	117-84-0	Di-n-octyl phthalate	u	650	50
88-06-2	2,4,6-Trichlorophenol	u	650	50	205-99-2	Benzo(b)fluoranthene	u	650	50
95-95-4	2,4,5-Trichlorophenol	u	650	50	207-08-9	Benzo(k)fluoranthene	u	650	50
91-58-7	2-Chloronaphthalene	u	650	50	50-32-8	Benzo(a)pyrene	u	650	50
88-74-4	2-Nitroaniline	u	6500	500	193-39-5	Indeno(1,2,3-cd)pyrene	u	650	50
208-96-8	Acenaphthylene	u	650	50	53-70-3	Dibenzo(a,h)anthracene	u	650	50
131-11-3	Dimethyl phthalate	u	650	50	191-24-2	Benzo(g,h,i)perylene	u	650	50
606-20-2	2,6-Dinitrotoluene	u	650	50					

MDL determined according to procedures in 40CFR Appendix B to part 136
u: Below Method Detection Limit
J: Estimated Concentration above MDL but below LRL.
(1): Cannot be distinguished from Diphenylamine by this method.
B: Compound also present in the method blank.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	79	25-121	59-104	19000
4165-62-2	Phenol-d5	75	24-113	61-101	19000
4165-60-0	Nitrobenzene-d5	78	23-120	61-102	13000
321-60-8	2-Fluorobiphenyl	77	30-115	60-110	13000
118-79-6	2,4,6-Tribromophenol	81	19-122	61-117	19000
98904-43-9	Terphenyl-d14	90	18-137	55-108	13000

Quality Assurance / Quality Control

Method Blank:	WG6579-1	Matrix Spike:	WG6579-4	Dilution:	NA
Lab Control Sample:	WG6579-2	Matrix Spike Duplicate:	WG6579-5	Re-analysis:	NA
Lab Matrix Duplicate:	WG6579-3	Dilution:	NA	Re-extraction:	NA

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DEPARTMENT OF THE ARMY
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BNA (Method Blank) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/25/00	Matrix:	Soil
CQAB Sample ID:	WG6579-1	Date Analyzed:	09/28/00	Units:	ug/kg
Prep Method:	SW-846 3540 C	Date Reported:	11/13/00	Amount (kg):	0.025
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	000928es1	Data File ID:	bna0101002	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	200	20	99-09-2	3-Nitroaniline	u	2000	200
111-44-4	Bis(2-chloroethyl) ether	u	200	20	83-32-9	Acenaphthene	u	200	20
95-57-8	2-Chlorophenol	u	200	20	51-28-5	2,4-Dinitrophenol	u	2000	200
541-73-1	1,3-Dichlorobenzene	u	200	20	132-64-9	Dibenzofuran	u	200	20
106-46-7	1,4-Dichlorobenzene	u	200	20	100-02-7	4-Nitrophenol	u	2000	200
95-50-1	1,2-Dichlorobenzene	u	200	20	121-14-2	2,4-Dinitrotoluene	u	200	20
100-51-6	Benzyl alcohol	u	2000	200	86-73-7	Fluorene	u	200	20
95-48-7	2-Methylphenol	u	200	20	84-66-2	Diethyl phthalate	u	200	20
108-60-1	2,2'-Oxybis(1-chloropropane)	u	200	20	7005-72-3	4-Chlorophenyl phenyl ether	u	200	20
621-64-7	N-Nitroso-di-n-propylamine	u	200	20	100-01-6	4-Nitroaniline	u	2000	200
67-72-1	Hexachloroethane	u	200	20	534-52-1	4,6-Dinitro-2-methylphenol	u	2000	200
106-44-5	4-Methylphenol	u	200	20	86-30-6	N-Nitrosodiphenylamine (1)	u	200	20
98-95-3	Nitrobenzene	u	200	20	118-74-1	Hexachlorobenzene	u	200	20
78-59-1	Isophorone	u	200	20	101-55-3	4-Bromophenyl phenyl ether	u	200	20
88-75-5	2-Nitrophenol	u	400	40	87-86-5	Pentachlorophenol	u	2000	200
105-67-9	2,4-Dimethylphenol	u	400	40	85-01-8	Phenanthrene	u	200	20
111-91-1	Bis(2-chloroethoxy)methane	u	200	20	120-12-7	Anthracene	u	200	20
120-83-2	2,4-Dichlorophenol	u	200	20	84-74-2	Di-n-butyl phthalate	50 J	200	20
65-85-0	Benzoic acid	u	2000	200	206-44-0	Fluoranthene	u	200	20
120-82-1	1,2,4-Trichlorobenzene	u	200	20	129-00-0	Pyrene	u	200	20
91-20-3	Naphthalene	u	200	20	85-68-7	Butyl benzyl phthalate	u	200	20
106-47-8	4-Chloroaniline	u	400	40	56-55-3	Benzo(a)anthracene	u	200	20
87-68-3	Hexachlorobutadiene	u	200	20	91-94-1	3,3'-Dichlorobenzidine	u	800	80
59-50-7	4-Chloro-3-methylphenol	u	400	40	218-01-9	Chrysene	u	200	20
91-57-6	2-Methylnaphthalene	u	200	20	117-81-7	Bis(2-ethylhexyl) phthalate	50 J	200	20
77-47-4	Hexachlorocyclopentadiene	u	800	80	117-84-0	Di-n-octyl phthalate	u	200	20
88-06-2	2,4,6-Trichlorophenol	u	200	20	205-99-2	Benzo(b)fluoranthene	u	200	20
95-95-4	2,4,5-Trichlorophenol	u	200	20	207-08-9	Benzo(k)fluoranthene	u	200	20
91-58-7	2-Chloronaphthalene	u	200	20	50-32-8	Benzo(a)pyrene	u	200	20
88-74-4	2-Nitroaniline	u	2000	200	193-39-5	Indeno(1,2,3-cd)pyrene	u	200	20
208-96-8	Acenaphthylene	u	200	20	53-70-3	Dibenzo(a,h)anthracene	u	200	20
131-11-3	Dimethyl phthalate	u	200	20	191-24-2	Benzo(g,h,i)perylene	u	200	20
606-20-2	2,6-Dinitrotoluene	u	200	20					

u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.
J: Estimated Concentration above MDL but below LRL.

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	71	25-121	59-104	6000
4165-62-2	Phenol-d5	71	24-113	61-101	6000
4165-60-0	Nitrobenzene-d5	76	23-120	61-102	4000
321-60-8	2-Fluorobiphenyl	75	30-115	60-110	4000
118-79-6	2,4,6-Tribromophenol	79	19-122	61-117	6000
98904-43-9	Terphenyl-d14	72	18-137	55-108	4000

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DEPARTMENT OF THE ARMY
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BNA (Method Blank) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/25/00	Matrix:	Soil
CQAB Sample ID:	WG6579-6	Date Analyzed:	10/02/00	Units:	ug/kg
Prep Method:	SW-846 3540 C	Date Reported:	11/13/00	Amount (kg):	0.025
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001002es1	Data File ID:	bna1301014	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	200	20	99-09-2	3-Nitroaniline	u	2000	200
111-44-4	Bis(2-chloroethyl) ether	u	200	20	83-32-9	Acenaphthene	u	200	20
95-57-8	2-Chlorophenol	u	200	20	51-28-5	2,4-Dinitrophenol	u	2000	200
541-73-1	1,3-Dichlorobenzene	u	200	20	132-64-9	Dibenzofuran	u	200	20
106-46-7	1,4-Dichlorobenzene	u	200	20	100-02-7	4-Nitrophenol	u	2000	200
95-50-1	1,2-Dichlorobenzene	u	200	20	121-14-2	2,4-Dinitrotoluene	u	200	20
100-51-6	Benzyl alcohol	u	2000	200	86-73-7	Fluorene	u	200	20
95-48-7	2-Methylphenol	u	200	20	84-66-2	Diethyl phthalate	u	200	20
108-60-1	2,2'-Oxybis(1-chloropropane)	u	200	20	7005-72-3	4-Chlorophenyl phenyl ether	u	200	20
621-64-7	N-Nitroso-di-n-propylamine	u	200	20	100-01-6	4-Nitroaniline	u	2000	200
67-72-1	Hexachloroethane	u	200	20	534-52-1	4,6-Dinitro-2-methylphenol	u	2000	200
106-44-5	4-Methylphenol	u	200	20	86-30-6	N-Nitrosodiphenylamine (1)	u	200	20
98-95-3	Nitrobenzene	u	200	20	118-74-1	Hexachlorobenzene	u	200	20
78-59-1	Isophorone	u	200	20	101-55-3	4-Bromophenyl phenyl ether	u	200	20
88-75-5	2-Nitrophenol	u	400	40	87-86-5	Pentachlorophenol	u	2000	200
105-67-9	2,4-Dimethylphenol	u	400	40	85-01-8	Phenanthrene	u	200	20
111-91-1	Bis(2-chloroethoxy)methane	u	200	20	120-12-7	Anthracene	u	200	20
120-83-2	2,4-Dichlorophenol	u	200	20	84-74-2	Di-n-butyl phthalate	40 J	200	20
65-85-0	Benzoic acid	u	2000	200	206-44-0	Fluoranthene	u	200	20
120-82-1	1,2,4-Trichlorobenzene	u	200	20	129-00-0	Pyrene	u	200	20
91-20-3	Naphthalene	u	200	20	85-68-7	Butyl benzyl phthalate	u	200	20
106-47-8	4-Chloroaniline	u	400	40	56-55-3	Benzo(a)anthracene	u	200	20
87-68-3	Hexachlorobutadiene	u	200	20	91-94-1	3,3'-Dichlorobenzidine	u	800	80
59-50-7	4-Chloro-3-methylphenol	u	400	40	218-01-9	Chrysene	u	200	20
91-57-6	2-Methylnaphthalene	u	200	20	117-81-7	Bis(2-ethylhexyl) phthalate	50 J	200	20
77-47-4	Hexachlorocyclopentadiene	u	800	80	117-84-0	Di-n-octyl phthalate	u	200	20
88-06-2	2,4,6-Trichlorophenol	u	200	20	205-99-2	Benzo(b)fluoranthene	u	200	20
95-95-4	2,4,5-Trichlorophenol	u	200	20	207-08-9	Benzo(k)fluoranthene	u	200	20
91-58-7	2-Chloronaphthalene	u	200	20	50-32-8	Benzo(a)pyrene	u	200	20
88-74-4	2-Nitroaniline	u	2000	200	193-39-5	Indeno(1,2,3-cd)pyrene	u	200	20
208-96-8	Acenaphthylene	u	200	20	53-70-3	Dibenzo(a,h)anthracene	u	200	20
131-11-3	Dimethyl phthalate	u	200	20	191-24-2	Benzo(g,h,i)perylene	u	200	20
606-20-2	2,6-Dinitrotoluene	u	200	20					

u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.
J: Estimated Concentration above MDL but below LRL.

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	72	25-121	59-104	6000
4165-62-2	Phenol-d5	72	24-113	61-101	6000
4165-60-0	Nitrobenzene-d5	73	23-120	61-102	4000
321-60-8	2-Fluorobiphenyl	77	30-115	60-110	4000
118-79-6	2,4,6-Tribromophenol	79	19-122	61-117	6000
98904-43-9	Terphenyl-d14	72	18-137	55-108	4000

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DEPARTMENT OF THE ARMY
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BNA (Method Blank) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/25/00	Matrix:	Soil
CQAB Sample ID:	WG6579-7	Date Analyzed:	10/24/00	Units:	ug/kg
Prep Method:	SW-846 3540 C	Date Reported:	11/13/00	Amount (kg):	0.025
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001024es1	Data File ID:	bna0101002	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	200	20	99-09-2	3-Nitroaniline	u	2000	200
111-44-4	Bis(2-chloroethyl) ether	u	200	20	83-32-9	Acenaphthene	u	200	20
95-57-8	2-Chlorophenol	u	200	20	51-28-5	2,4-Dinitrophenol	u	2000	200
541-73-1	1,3-Dichlorobenzene	u	200	20	132-64-9	Dibenzofuran	u	200	20
106-46-7	1,4-Dichlorobenzene	u	200	20	100-02-7	4-Nitrophenol	u	2000	200
95-50-1	1,2-Dichlorobenzene	u	200	20	121-14-2	2,4-Dinitrotoluene	u	200	20
100-51-6	Benzyl alcohol	u	2000	200	86-73-7	Fluorene	u	200	20
95-48-7	2-Methylphenol	u	200	20	84-66-2	Diethyl phthalate	u	200	20
108-60-1	2,2'-Oxybis(1-chloropropane)	u	200	20	7005-72-3	4-Chlorophenyl phenyl ether	u	200	20
621-64-7	N-Nitroso-di-n-propylamine	u	200	20	100-01-6	4-Nitroaniline	u	2000	200
67-72-1	Hexachloroethane	u	200	20	534-52-1	4,6-Dinitro-2-methylphenol	u	2000	200
106-44-5	4-Methylphenol	u	200	20	86-30-6	N-Nitrosodiphenylamine (1)	u	200	20
98-95-3	Nitrobenzene	u	200	20	118-74-1	Hexachlorobenzene	u	200	20
78-59-1	Isophorone	u	200	20	101-55-3	4-Bromophenyl phenyl ether	u	200	20
88-75-5	2-Nitrophenol	u	400	40	87-86-5	Pentachlorophenol	u	2000	200
105-67-9	2,4-Dimethylphenol	u	400	40	85-01-8	Phenanthrene	u	200	20
111-91-1	Bis(2-chloroethoxy)methane	u	200	20	120-12-7	Anthracene	u	200	20
120-83-2	2,4-Dichlorophenol	u	200	20	84-74-2	Di-n-butyl phthalate	40 J	200	20
65-85-0	Benzoic acid	u	2000	200	206-44-0	Fluoranthene	u	200	20
120-82-1	1,2,4-Trichlorobenzene	u	200	20	129-00-0	Pyrene	u	200	20
91-20-3	Naphthalene	u	200	20	85-68-7	Butyl benzyl phthalate	u	200	20
106-47-8	4-Chloroaniline	u	400	40	56-55-3	Benzo(a)anthracene	u	200	20
87-68-3	Hexachlorobutadiene	u	200	20	91-94-1	3,3'-Dichlorobenzidine	u	800	80
59-50-7	4-Chloro-3-methylphenol	u	400	40	218-01-9	Chrysene	u	200	20
91-57-6	2-Methylnaphthalene	u	200	20	117-81-7	Bis(2-ethylhexyl) phthalate	50 J	200	20
77-47-4	Hexachlorocyclopentadiene	u	800	80	117-84-0	Di-n-octyl phthalate	u	200	20
88-06-2	2,4,6-Trichlorophenol	u	200	20	205-99-2	Benzo(b)fluoranthene	u	200	20
95-95-4	2,4,5-Trichlorophenol	u	200	20	207-08-9	Benzo(k)fluoranthene	u	200	20
91-58-7	2-Chloronaphthalene	u	200	20	50-32-8	Benzo(a)pyrene	u	200	20
88-74-4	2-Nitroaniline	u	2000	200	193-39-5	Indeno(1,2,3-cd)pyrene	u	200	20
208-96-8	Acenaphthylene	u	200	20	53-70-3	Dibenzo(a,h)anthracene	u	200	20
131-11-3	Dimethyl phthalate	u	200	20	191-24-2	Benzo(g,h,i)perylene	u	200	20
606-20-2	2,6-Dinitrotoluene	u	200	20					

u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.
J: Estimated Concentration above MDL but below LRL.

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	70	25-121	59-104	6000
4165-62-2	Phenol-d5	71	24-113	61-101	6000
4165-60-0	Nitrobenzene-d5	74	23-120	61-102	4000
321-60-8	2-Fluorobiphenyl	75	30-115	60-110	4000
118-79-6	2,4,6-Tribromophenol	75	19-122	61-117	6000
98904-43-9	Terphenyl-d14	72	18-137	55-108	4000

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BNA (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	09/25/00	Sample ID:	Sample	LD
Client Sample ID:	Batch Specific	Date Analyzed:	9/28 + 10/2/00	CQAB No.:	M000978-008	WG6579-3
Prep Method:	SW-846 3540 C	Date Reported:	11/13/00	Data File ID:	bna1701018	bna1101012
Analysis Method:	SW-846 8270 B	Matrix:	Soil	Amount(kg):	0.0251	0.0253
Instrument ID:	gcmsb	Units:	ug/kg	Vial Vol.(mL):	1	1
Analytical Batch:	001002esl/000928esl	% Solids:	91.9	Final Vol.(mL):	1	1
Analyst:	Greg O. Shearer			Dilution Factor:	10	1

CAS Number	Compound	Sample Result	LD Result	LRL	MDL	RPD (%)	CQAB Lab RPD Limit
108-95-2	Phenol	650 J	u	2200	20	NC	40
111-44-4	Bis(2-chloroethyl) ether	u	u	2200	20	NC	40
95-57-8	2-Chlorophenol	u	u	2200	20	NC	40
541-73-1	1,3-Dichlorobenzene	u	u	2200	20	NC	40
106-46-7	1,4-Dichlorobenzene	u	u	2200	20	NC	40
95-50-1	1,2-Dichlorobenzene	u	u	2200	20	NC	40
100-51-6	Benzyl alcohol	u	u	22000	200	NC	60
95-48-7	2-Methylphenol	u	u	2200	20	NC	40
108-60-1	2,2'-Oxybis(1-chloropropane)	u	u	2200	20	NC	40
621-64-7	N-Nitroso-di-n-propylamine	u	u	2200	20	NC	40
67-72-1	Hexachloroethane	u	u	2200	20	NC	40
106-44-5	4-Methylphenol	600 J	u	2200	20	NC	40
98-95-3	Nitrobenzene	u	u	2200	20	NC	40
78-59-1	Isophorone	u	u	2200	20	NC	40
88-75-5	2-Nitrophenol	u	u	4300	40	NC	60
105-67-9	2,4-Dimethylphenol	u	u	4300	40	NC	60
111-91-1	Bis(2-chloroethoxy)methane	u	u	2200	20	NC	40
120-83-2	2,4-Dichlorophenol	u	u	2200	20	NC	40
65-85-0	Benzoic acid	u	u	22000	200	NC	60
120-82-1	1,2,4-Trichlorobenzene	u	u	2200	20	NC	40
91-20-3	Naphthalene	6590	120 J	2200	20	X	40
106-47-8	4-Chloroaniline	u	u	4300	40	NC	60
87-68-3	Hexachlorobutadiene	u	u	2200	20	NC	40
59-50-7	4-Chloro-3-methylphenol	u	u	4300	40	NC	40
91-57-6	2-Methylnaphthalene	2000 J	60 J	2200	20	X	40
77-47-4	Hexachlorocyclopentadiene	u	u	8700	80	NC	60
88-06-2	2,4,6-Trichlorophenol	u	u	2200	20	NC	40
95-95-4	2,4,5-Trichlorophenol	u	u	2200	20	NC	40
91-58-7	2-Chloronaphthalene	u	u	2200	20	NC	40
88-74-4	2-Nitroaniline	u	u	22000	200	NC	60
208-96-8	Acenaphthylene	3120	240	2200	20	171 #	40
131-11-3	Dimethyl phthalate	u	u	2200	20	NC	40
606-20-2	2,6-Dinitrotoluene	u	u	2200	20	NC	40
99-09-2	3-Nitroaniline	u	u	22000	200	NC	60
83-32-9	Acenaphthene	1700 J	110 J	2200	20	X	40
51-28-5	2,4-Dinitrophenol	u	u	22000	200	NC	60
132-64-9	Dibenzofuran	5420	130 J	2200	20	X	40
100-02-7	4-Nitrophenol	u	u	22000	200	NC	60
121-14-2	2,4-Dinitrotoluene	u	u	2200	20	NC	40
86-73-7	Fluorene	10000	220	2200	20	191 #	40
84-66-2	Diethyl phthalate	u	u	2200	20	NC	40
7005-72-3	4-Chlorophenyl phenyl ether	u	u	2200	20	NC	40
100-01-6	4-Nitroaniline	u	u	22000	200	NC	60
534-52-1	4,6-Dinitro-2-methylphenol	u	u	22000	200	NC	60
86-30-6	N-Nitrosodiphenylamine (1)	u	u	2200	20	NC	40
118-74-1	Hexachlorobenzene	u	u	2200	20	NC	40

NC: Parameter is Not Calculable.
u: Below Method Detection Limit
J: Estimated Concentration above MDL but below LRL.
X: RPD not calculated due to the uncertainty associated with estimated concentrations.
(1): Cannot be distinguished from Diphenylamine by this method.

NOTE: The LRLs above are for the sample labelled M000978-008. The LRLs for the laboratory duplicate (WG6579-3) are approximately 10 times lower because the laboratory duplicate was not diluted.

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BNA (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	09/25/00	Sample ID:	Sample	LD
Client Sample ID:	Batch Specific	Date Analyzed:	9/28 + 10/2/00	CQAB No.:	M000978-008	WG6579-3
Prep Method:	SW-846 3540 C	Date Reported:	11/13/00	Data File ID:	bna1701018	bna1101012
Analysis Method:	SW-846 8270 B	Matrix:	Soil	Amount(kg):	0.0251	0.0253
Instrument ID:	gcmsb	Units:	ug/kg	Vial Vol.(mL):	1	1
Analytical Batch:	001002es1/000928es1	% Solids:	91.9	Final Vol.(mL):	1	1
Analyst:	Greg O. Shearer			Dilution Factor:	10	1

CAS Number	Compound	Sample Result	LD Result	LRL	MDL	RPD (%)	CQAB Lab RPD Limit
101-55-3	4-Bromophenyl phenyl ether	u	u	2200	20	NC	40
87-86-5	Pentachlorophenol	u	u	22000	200	NC	60
85-01-8	Phenanthrene	39300	1470	2200	20	186 #	40
120-12-7	Anthracene	10400	430	2200	20	184 #	40
84-74-2	Di-n-butyl phthalate	u	20 JB	2200	20	NC	40
206-44-0	Fluoranthene	33800	2090	2200	20	177 #	40
129-00-0	Pyrene	28200	2000	2200	20	174 #	40
85-68-7	Butyl benzyl phthalate	u	u	2200	20	NC	40
56-55-3	Benzo(a)anthracene	13400	970	2200	20	173 #	40
91-94-1	3,3'-Dichlorobenzidine	u	u	8700	80	NC	60
218-01-9	Chrysene	12300	960	2200	20	171 #	40
117-81-7	Bis(2-ethylhexyl) phthalate	u	60 JB	2200	20	NC	40
117-84-0	Di-n-octyl phthalate	u	u	2200	20	NC	40
205-99-2	Benzo(b)fluoranthene	19700 I	1900 I	2200	20	165 #	40
207-08-9	Benzo(k)fluoranthene	I	I	2200	20	NC	40
50-32-8	Benzo(a)pyrene	12500	1100	2200	20	168 #	40
193-39-5	Indeno(1,2,3-cd)pyrene	6150	540	2200	20	168 #	40
53-70-3	Dibenzo(a,h)anthracene	2250	140 J	2200	20	X	40
191-24-2	Benzo(g,h,i)perylene	4590	370	2200	20	170 #	40

NC: Parameter is Not Calculable.
u: Below Method Detection Limit
I: Analytes reported as an isomeric pair due to insufficient baseline resolution.
J: Estimated Concentration above MDL but below LRL.
X: RPD not calculated due to the uncertainty associated with estimated concentrations.

NOTE: The LRLs above are for the sample labelled M000978-008. The LRLs for the laboratory duplicate (WG6579-3) are approximately 10 times lower because the laboratory duplicate was not diluted.

Method Quality Control

CAS Number	Surrogate Standard Name	Added (ug/kg)	Sample (ug/kg)	Sample Rec (%)	Added Dup (ug/kg)	Dup (ug/kg)	Dup Rec (%)	Method % Rec Limits	CQAB % Rec Limits	RPD (%)	CQAB Lab RPD Limit
367-12-4	2-Fluorophenol	6500	4810	74	6450	4110	64	25-121	59-104	15	40
4165-62-2	Phenol-d5	6500	4460	69	6450	4050	63	24-113	61-101	9	40
4165-60-0	Nitrobenzene-d5	4340	3210	74	4300	2910	68	23-120	61-102	9	40
321-60-8	2-Fluorobiphenyl	4340	3380	78	4300	3000	70	30-115	60-110	11	40
118-79-6	2,4,6-Tribromophenol	6500	4640	71	6450	4640	72	19-122	61-117	1	40
98904-43-9	Terphenyl-d14	4340	3730	86	4300	3270	76	18-137	55-108	12	40

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BNA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	09/25/00	Sample ID:	MS	MSD
Client Sample ID:	Batch Specific	Date Analyzed:	10/03/00	CQAB No.:	WG6579-4	WG6579-5
CQAB Sample ID:	M000978-008	Date Reported:	11/13/00	Data File ID:	bna1801019	bna1901020
Prep Method:	SW-846 3540 C	Matrix:	Soil	Amount(kg):	0.0254	0.0250
Analysis Method:	SW-846 8270 B	Units:	ug/kg	Vial Vol.(mL):	1	1
Analytical Batch:	001002es1	% Solids:	91.9	Final Vol.(mL):	1	1
Analyst:	Greg O. Shearer	Instrument ID:	gcmsb	Dilution Factor:	5	2

CAS Number	Compound	## Sample Result	MS Spike	MS Conc	MS %Rec	MSD Spike	MSD Conc	MSD %Rec	RPD (%)	Method Limits RPD	Method Limits %Rec	Lab Limits RPD	Lab Limits %Rec
108-95-2	Phenol	650 J	3430	3060	70	3480	3330	77	10	35	26-90	40	57-109
95-57-8	2-Chlorophenol	u	3430	3090	90	3480	3260	94	4	50	25-102	40	64-106
106-46-7	1,4-Dichlorobenzene	u	2140	1670	78	2170	1780	82	5	27	28-104	40	52-112
621-64-7	N-Nitroso-di-n-propylamine	u	2140	1930	90	2170	2060	95	5	38	41-126	40	64-108
120-82-1	1,2,4-Trichlorobenzene	u	2140	1840	86	2170	1950	90	5	23	38-107	40	59-113
59-50-7	4-Chloro-3-methylphenol	u	3430	3300	96	3480	3440	99	3	33	26-103	40	64-109
83-32-9	Acenaphthene	1730 J	2140	2940	56 @	2170	2360	29 ^^	64 ^^	19	31-137	40	65-111
100-02-7	4-Nitrophenol	u	3430	2610	76	3480	3150	90	17	50	11-114	60	65-124
121-14-2	2,4-Dinitrotoluene	u	2140	1800	84	2170	2020	93 *	10	47	28-89	40	56-138
87-86-5	Pentachlorophenol	u	3430	2080	61	3480	2860	82	29	47	17-109	60	61-125
129-00-0	Pyrene	28200	2140	18100	NC ^^	2170	8070	NC ^^	NC ^^	36	35-142	40	59-115

J: Estimated Concentration above MDL but below LRL.
##: Sample result used for spike recovery calculation is adjusted for the amount of sample used for the MS/MSD.
%Rec: Percent of the spike recovered from the matrix
u: Below Method Detection Limit
^^: The result is outside method limits and outside CQAB laboratory limits which are based on historical in-house LCS data.
*: Indicates the value is outside method limits but within CQAB laboratory limits which are based on historical in-house LCS data
@: The result is within method limits but outside CQAB laboratory limits which are based on historical in-house LCS data.
NC: Not calculable. See NOTE below.

NOTE: Due to high levels of polycyclic aromatic hydrocarbons (PAHs) and significant sample inhomogeneity, the pyrene MS and MSD % recoveries could not be calculated because the sample concentration was greater than that found in the MS and MSD samples.

Method Quality Control

CAS Number	Surrogate Standard Name	Added (ug/kg)	MS (ug/kg)	MS Rec (%)	Added MSD (ug/kg)	MSD (ug/kg)	MSD Rec (%)	Method %Rec Limits	CQAB %Rec Limits	RPD (%)	CQAB Lab RPD Limit
367-12-4	2-Fluorophenol	6430	5310	83	6520	5430	83	25-121	59-104	0	40
4165-62-2	Phenol-d5	6430	5190	81	6520	5470	84	24-113	61-101	4	40
4165-60-0	Nitrobenzene-d5	4290	3510	82	4350	3570	82	23-120	61-102	0	40
321-60-8	2-Fluorobiphenyl	4290	3600	84	4350	3650	84	30-115	60-110	0	40
118-79-6	2,4,6-Tribromophenol	6430	5490	85	6520	6020	92	19-122	61-117	8	40
98904-43-9	Terphenyl-d14	4290	3900	91	4350	4280	98	18-137	55-108	7	40

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BNA (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/25/00	Matrix:	Soil
CQAB Sample ID:	WG6579-2	Date Analyzed:	09/28/00	Units:	ug/kg
Prep Method:	SW-846 3540 C	Date Reported:	11/13/00	Amount(kg):	0.025
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	000928es1	Data File ID:	bna0201003	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Method Range	CQAB Range
108-95-2	Phenol	2420	3200	76	5-112	57-109
111-44-4	Bis(2-chloroethyl) ether	1700	2000	85	12-158	53-108
95-57-8	2-Chlorophenol	2810	3200	88	23-134	64-106
541-73-1	1,3-Dichlorobenzene	1620	2000	81	D-172	58-107
106-46-7	1,4-Dichlorobenzene	1740	2000	87	20-124	52-112
95-50-1	1,2-Dichlorobenzene	1710	2000	85	32-129	53-115
100-51-6	Benzyl alcohol	1830 J	2000	92		71-107
95-48-7	2-Methylphenol	2770	3200	87		63-109
108-60-1	2,2'-Oxybis(1-chloropropane)	1830	2000	92		64-107
621-64-7	N-Nitroso-di-n-propylamine	1800	2000	90	D-230	64-108
67-72-1	Hexachloroethane	1680	2000	84	40-113	60-106
106-44-5	4-Methylphenol	2730	3200	85		53-115
98-95-3	Nitrobenzene	1760	2000	88	35-180	65-110
78-59-1	Isophorone	1770	2000	88	21-196	62-106
88-75-5	2-Nitrophenol	2850	3200	89	29-182	60-123
105-67-9	2,4-Dimethylphenol	2840	3200	89	32-119	33-118
111-91-1	Bis(2-chloroethoxy)methane	1780	2000	89	33-184	65-109
120-83-2	2,4-Dichlorophenol	2880	3200	90		64-112
65-85-0	Benzoic acid	7440	6400	116		10-150
120-82-1	1,2,4-Trichlorobenzene	1750	2000	88	44-142	59-113
91-20-3	Naphthalene	1780	2000	89	21-133	63-112
106-47-8	4-Chloroaniline	1130	2000	56 ^		10-48
87-68-3	Hexachlorobutadiene	1830	2000	91	24-116	61-111
59-50-7	4-Chloro-3-methylphenol	2800	3200	88	22-147	64-109
91-57-6	2-Methylnaphthalene	1910	2000	95		65-111
77-47-4	Hexachlorocyclopentadiene	1320	2000	66		10-84
88-06-2	2,4,6-Trichlorophenol	3000	3200	94	37-144	67-114
95-95-4	2,4,5-Trichlorophenol	2980	3200	93		69-117
91-58-7	2-Chloronaphthalene	1830	2000	92		64-115
88-74-4	2-Nitroaniline	1870 J	2000	94		63-126
208-96-8	Acenaphthylene	1900	2000	95	33-145	66-111
131-11-3	Dimethyl phthalate	1820	2000	91	D-112	64-112
606-20-2	2,6-Dinitrotoluene	1620	2000	81	50-158	55-139
99-09-2	3-Nitroaniline	1820 J	2000	91		10-150
83-32-9	Acenaphthene	1860	2000	93	47-145	65-111
51-28-5	2,4-Dinitrophenol	3140	3200	98	D-191	33-150
132-64-9	Dibenzofuran	1840	2000	92		65-114
100-02-7	4-Nitrophenol	2900	3200	91	D-132	65-124
121-14-2	2,4-Dinitrotoluene	1860	2000	93	39-139	56-138
86-73-7	Fluorene	1840	2000	92	59-121	63-115
84-66-2	Diethyl phthalate	1850	2000	92	D-114	63-111
7005-72-3	4-Chlorophenyl phenyl ether	1870	2000	94	25-158	62-116
100-01-6	4-Nitroaniline	2290	2000	114		39-150
534-52-1	4,6-Dinitro-2-methylphenol	3020	3200	94		50-143
86-30-6	N-Nitrosodiphenylamine (1)	1820	2000	91		23-150
118-74-1	Hexachlorobenzene	1640	2000	82	D-152	60-116
101-55-3	4-Bromophenyl phenyl ether	1770	2000	89	53-127	58-121

D: SW-846 term to indicate that the analyte is expected to be detectable.
J: Estimated Concentration above MDL but below LRL.
^: Indicates the result is outside CQAB laboratory limits which are based on historical in-house LCS data.
(1): Cannot be distinguished from Diphenylamine by this method.

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BNA (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/25/00	Matrix:	Soil
CQAB Sample ID:	WG6579-2	Date Analyzed:	09/28/00	Units:	ug/kg
Prep Method:	SW-846 3540 C	Date Reported:	11/13/00	Amount(kg):	0.025
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	000928es1	Data File ID:	bna0201003	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Method Range	CQAB Range
87-86-5	Pentachlorophenol	3040	3200	95	14-176	61-125
85-01-8	Phenanthrene	1800	2000	90	54-120	64-113
120-12-7	Anthracene	1740	2000	87	27-133	62-113
84-74-2	Di-n-butyl phthalate	1740 B	2000	87		59-122
206-44-0	Fluoranthene	1820	2000	91	26-137	66-117
129-00-0	Pyrene	1540	2000	77	52-115	59-115
85-68-7	Butyl benzyl phthalate	1560	2000	78	D-152	61-117
56-55-3	Benzo(a)anthracene	1760	2000	88	33-143	63-115
91-94-1	3,3'-Dichlorobenzidine	2860	2000	143	D-262	25-150
218-01-9	Chrysene	1660	2000	83	17-168	64-112
117-81-7	Bis(2-ethylhexyl) phthalate	1670 B	2000	84	8-158	61-127
117-84-0	Di-n-octyl phthalate	1660	2000	83	4-146	60-121
205-99-2	Benzo(b)fluoranthene	1690	2000	84	24-159	60-113
207-08-9	Benzo(k)fluoranthene	1680	2000	84	11-162	62-107
50-32-8	Benzo(a)pyrene	1760	2000	88	17-163	62-109
193-39-5	Indeno(1,2,3-cd)pyrene	1750	2000	88	D-171	60-122
53-70-3	Dibenzo(a,h)anthracene	1690	2000	84	D-227	57-128
191-24-2	Benzo(g,h,i)perylene	1630	2000	82	D-219	59-118

B: Compound also present in the method blank.
D: SW-846 term to indicate that the analyte is expected to be detectable.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/kg)
367-12-4	2-Fluorophenol	79	25-121	59-104	6000
4165-62-2	Phenol-d5	79	24-113	61-101	6000
4165-60-0	Nitrobenzene-d5	78	23-120	61-102	4000
321-60-8	2-Fluorobiphenyl	80	30-115	60-110	4000
118-79-6	2,4,6-Tribromophenol	85	19-122	61-117	6000
98904-43-9	Terphenyl-d14	72	18-137	55-108	4000

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BNA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/26/00	Matrix:	Water
Client Sample ID:	AA3012	Date Received:	09/27/00	Units:	ug/L
CQAB Sample ID:	M000992-003	Date Logged:	09/27/00	Amount (L):	0.970
Prep Method:	SW-846 3520 C	Date Extracted:	09/28/00	Vial Vol. (mL):	1
Analysis Method:	SW-846 8270 C	Date Analyzed:	10/19/00	Final Vol.(mL):	1
Work Group:	WG6616	Date Reported:	11/14/00	Dilution:	1
Analytical Batch:	001019ew1	Instrument ID:	gcmsb		
Analyst:	Greg O. Shearer	Data File ID:	bna0801009		

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	5.2	0.5	99-09-2	3-Nitroaniline	u	1040	5
111-44-4	Bis(2-chloroethyl) ether	u	5.2	0.5	83-32-9	Acenaphthene	u	520	0.5
95-57-8	2-Chlorophenol	u	5.2	0.5	51-28-5	2,4-Dinitrophenol	u	520	5
541-73-1	1,3-Dichlorobenzene	u	5.2	0.5	132-64-9	Dibenzofuran	u	5.2	0.5
106-46-7	1,4-Dichlorobenzene	u	5.2	0.5	100-02-7	4-Nitrophenol	u	52	5
95-50-1	1,2-Dichlorobenzene	u	5.2	0.5	121-14-2	2,4-Dinitrotoluene	7200 D	5.2	0.5
100-51-6	Benzyl alcohol	u	52	5	86-73-7	Fluorene	u	520	0.5
95-48-7	2-Methylphenol	u	5.2	0.5	84-66-2	Diethyl phthalate	u	5.2	0.5
108-60-1	2,2'-Oxybis(1-chloropropane)	u	5.2	0.5	7005-72-3	4-Chlorophenyl phenyl ether	u	5.2	0.5
621-64-7	N-Nitroso-di-n-propylamine	u	5.2	0.5	100-01-6	4-Nitroaniline	u	1040	5
67-72-1	Hexachloroethane	u	5.2	0.5	534-52-1	4,6-Dinitro-2-methylphenol	u	52	5
106-44-5	4-Methylphenol	u	5.2	0.5	86-30-6	N-Nitrosodiphenylamine (1)	u	5.2	0.5
98-95-3	Nitrobenzene	2 J	5.2	0.5	118-74-1	Hexachlorobenzene	u	5.2	0.5
78-59-1	Isophorone	u	5.2	0.5	101-55-3	4-Bromophenyl phenyl ether	u	5.2	0.5
88-75-5	2-Nitrophenol	u	10	1	87-86-5	Pentachlorophenol	u	52	5
105-67-9	2,4-Dimethylphenol	u	10	1	85-01-8	Phenanthrene	u	5.2	0.5
111-91-1	Bis(2-chloroethoxy)methane	u	5.2	0.5	120-12-7	Anthracene	u	5.2	0.5
120-83-2	2,4-Dichlorophenol	u	5.2	0.5	84-74-2	Di-n-butyl phthalate	u	5.2	0.5
65-85-0	Benzoic acid	u	52	5	206-44-0	Fluoranthene	u	5.2	0.5
120-82-1	1,2,4-Trichlorobenzene	u	5.2	0.5	129-00-0	Pyrene	u	5.2	0.5
91-20-3	Naphthalene	u	5.2	0.5	85-68-7	Butyl benzyl phthalate	u	5.2	0.5
106-47-8	4-Chloroaniline	u	10	1	56-55-3	Benzo(a)anthracene	u	5.2	0.5
87-68-3	Hexachlorobutadiene	u	5.2	0.5	91-94-1	3,3'-Dichlorobenzidine	u	21	2
59-50-7	4-Chloro-3-methylphenol	u	10	1	218-01-9	Chrysene	u	5.2	0.5
91-57-6	2-Methylnaphthalene	u	5.2	0.5	117-81-7	Bis(2-ethylhexyl) phthalate	3 JB	5.2	0.5
77-47-4	Hexachlorocyclopentadiene	u	21	2	117-84-0	Di-n-octyl phthalate	u	5.2	0.5
88-06-2	2,4,6-Trichlorophenol	u	5.2	0.5	205-99-2	Benzo(b)fluoranthene	u	5.2	0.5
95-95-4	2,4,5-Trichlorophenol	u	5.2	0.5	207-08-9	Benzo(k)fluoranthene	u	5.2	0.5
91-58-7	2-Chloronaphthalene	u	5.2	0.5	50-32-8	Benzo(a)pyrene	u	5.2	0.5
88-74-4	2-Nitroaniline	u	52	5	193-39-5	Indeno(1,2,3-cd)pyrene	u	5.2	0.5
208-96-8	Acenaphthylene	u	5.2	0.5	53-70-3	Dibenzo(a,h)anthracene	u	5.2	0.5
131-11-3	Dimethyl phthalate	u	5.2	0.5	191-24-2	Benzo(g,h,i)perylene	u	5.2	0.5
606-20-2	2,6-Dinitrotoluene	6600 D	5.2	0.5					

MDL determined according to procedures in 40CFR Appendix B to part 136
u: Below Method Detection Limit
J: Estimated Concentration above MDL but below LRL.
(1): Cannot be distinguished from Diphenylamine by this method.
B: Compound also present in the method blank.
D: Result quantitated from a 1:100 dilution of the sample extract analyzed on 10/23/00 (001023.ew1/bna0501006).

NOTE: The laboratory reporting limits for some analytes were raised due to matrix interference.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/L)
4165-60-0	Nitrobenzene-d5	84	35-114	43-120	51.5
321-60-8	2-Fluorobiphenyl	75 D	43-116	50-104	51.5
98904-43-9	Terphenyl-d14	89	33-141	44-113	51.5
4165-62-2	Phenol-d5	77	10-110	52-103	77.3
367-12-4	2-Fluorophenol	77	21-110	45-100	77.3
118-79-6	2,4,6-Tribromophenol	34 D^	10-123	53-120	77.3

^: The result is outside CQAB laboratory limits which are based on historical in-house LCS data.

Quality Assurance / Quality Control

Method Blank:	WG6616-1	Matrix Spike:	WG6616-4	Dilution:	NA
Lab Control Sample:	WG6616-2	Matrix Spike Duplicate:	NA	Re-analysis:	NA
Lab Matrix Duplicate:	WG6616-3	Dilution:	NA	Re-extraction:	NA

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DEPARTMENT OF THE ARMY
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BNA Sample Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Sampled:	09/27/00	Matrix:	Water
Client Sample ID:	AB3012	Date Received:	09/28/00	Units:	ug/L
CQAB Sample ID:	M000997-003	Date Logged:	09/28/00	Amount (L):	0.950
Prep Method:	SW-846 3520 C	Date Extracted:	09/28/00	Vial Vol. (mL):	1
Analysis Method:	SW-846 8270 C	Date Analyzed:	10/19/00	Final Vol.(mL):	1
Work Group:	WG6616	Date Reported:	11/14/00	Dilution:	1
Analytical Batch:	001019ewl	Instrument ID:	gcmsb		
Analyst:	Greg O. Shearer	Data File ID:	bna0701008		

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	5.3	0.5	99-09-2	3-Nitroaniline	u	53	5
111-44-4	Bis(2-chloroethyl) ether	u	5.3	0.5	83-32-9	Acenaphthene	u	5.3	0.5
95-57-8	2-Chlcrophenol	u	5.3	0.5	51-28-5	2,4-Dinitrophenol	u	53	5
541-73-1	1,3-Dichlorobenzene	u	5.3	0.5	132-64-9	Dibenzofuran	u	5.3	0.5
106-46-7	1,4-Dichlorobenzene	u	5.3	0.5	100-02-7	4-Nitrophenol	u	53	5
95-50-1	1,2-Dichlorobenzene	u	5.3	0.5	121-14-2	2,4-Dinitrotoluene	6.9	5.3	0.5
100-51-6	Benzyl alcohol	u	53	5	86-73-7	Fluorene	u	5.3	0.5
95-48-7	2-Methylphenol	u	5.3	0.5	84-66-2	Diethyl phthalate	u	5.3	0.5
108-60-1	2,2'-Oxybis(1-chloropropane)	u	5.3	0.5	7005-72-3	4-Chlorophenyl phenyl ether	u	5.3	0.5
621-64-7	N-Nitroso-di-n-propylamine	u	5.3	0.5	100-01-6	4-Nitroaniline	u	53	5
67-72-1	Hexachloroethane	u	5.3	0.5	534-52-1	4,6-Dinitro-2-methylphenol	u	53	5
106-44-5	4-Methylphenol	u	5.3	0.5	86-30-6	N-Nitrosodiphenylamine (1)	u	5.3	0.5
98-95-3	Nitrobenzene	u	5.3	0.5	118-74-1	Hexachlorobenzene	u	5.3	0.5
78-59-1	Isophorone	u	5.3	0.5	101-55-3	4-Bromophenyl phenyl ether	u	5.3	0.5
88-75-5	2-Nitrophenol	u	11	1	87-86-5	Pentachlorophenol	u	53	5
105-67-9	2,4-Dimethylphenol	u	11	1	85-01-8	Phenanthrene	u	5.3	0.5
111-91-1	Bis(2-chloroethoxy)methane	u	5.3	0.5	120-12-7	Anthracene	u	5.3	0.5
120-83-2	2,4-Dichlorophenol	u	5.3	0.5	84-74-2	Di-n-butyl phthalate	u	5.3	0.5
65-85-0	Benzoic acid	u	53	5	206-44-0	Fluoranthene	u	5.3	0.5
120-82-1	1,2,4-Trichlorobenzene	u	5.3	0.5	129-00-0	Pyrene	u	5.3	0.5
91-20-3	Naphthalene	u	5.3	0.5	85-68-7	Butyl benzyl phthalate	u	5.3	0.5
106-47-8	4-Chloroaniline	u	11	1	56-55-3	Benzo(a)anthracene	u	5.3	0.5
87-68-3	Hexachlorobutadiene	u	5.3	0.5	91-94-1	3,3'-Dichlorobenzidine	u	21	2
59-50-7	4-Chloro-3-methylphenol	u	11	1	218-01-9	Chrysene	u	5.3	0.5
91-57-6	2-Methylnaphthalene	u	5.3	0.5	117-81-7	Bis(2-ethylhexyl) phthalate	1 JB	5.3	0.5
77-47-4	Hexachlorocyclopentadiene	u	21	2	117-84-0	Di-n-octyl phthalate	u	5.3	0.5
88-06-2	2,4,6-Trichlorophenol	u	5.3	0.5	205-99-2	Benzo(b)fluoranthene	u	5.3	0.5
95-95-4	2,4,5-Trichlorophenol	u	5.3	0.5	207-08-9	Benzo(k)fluoranthene	u	5.3	0.5
91-58-7	2-Chloronaphthalene	u	5.3	0.5	50-32-8	Benzo(a)pyrene	u	5.3	0.5
88-74-4	2-Nitroaniline	u	53	5	193-39-5	Indeno(1,2,3-cd)pyrene	u	5.3	0.5
208-96-8	Acenaphthylene	u	5.3	0.5	53-70-3	Dibenzo(a,h)anthracene	u	5.3	0.5
131-11-3	Dimethyl phthalate	u	5.3	0.5	191-24-2	Benzo(g,h,i)perylene	u	5.3	0.5
606-20-2	2,6-Dinitrotoluene	4 J	5.3	0.5					

MDL determined according to procedures in 40CFR Appendix B to part 136
u: Below Method Detection Limit
J: Estimated Concentration above MDL but below LRL.
(1): Cannot be distinguished from Diphenylamine by this method.
B: Compound also present in the method blank.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/L)
4165-60-0	Nitrobenzene-d5	78	35-114	43-120	52.6
321-60-8	2-Fluorobiphenyl	77	43-116	50-104	52.6
98904-43-9	Terphenyl-d14	81	33-141	44-113	52.6
4165-62-2	Phenol-d5	71	10-110	52-103	78.9
367-12-4	2-Fluorophenol	75	21-110	45-100	78.9
118-79-6	2,4,6-Tribromophenol	78	10-123	53-120	78.9

Quality Assurance / Quality Control

Method Blank:	WG6616-1	Matrix Spike:	WG6616-4	Dilution:	NA
Lab Control Sample:	WG6616-2	Matrix Spike Duplicate:	NA	Re-analysis:	NA
Lab Matrix Duplicate:	WG6616-3	Dilution:	NA	Re-extraction:	NA

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DEPARTMENT OF THE ARMY
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BNA (Method Blank) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/28/00	Matrix:	Water
CQAB Sample ID:	WG6616-1	Date Analyzed:	10/19/00	Units:	ug/L
Prep Method:	SW-846 3520 C	Date Reported:	11/14/00	Amount (L):	1.0
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001019ewl	Data File ID:	bna0101002	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	Result	LRL	MDL	CAS Number	Compound	Result	LRL	MDL
108-95-2	Phenol	u	5.0	0.5	99-09-2	3-Nitroaniline	u	50	5
111-44-4	Bis(2-chloroethyl) ether	u	5.0	0.5	83-32-9	Acenaphthene	u	5.0	0.5
95-57-8	2-Chlorophenol	u	5.0	0.5	51-28-5	2,4-Dinitrophenol	u	50	5
541-73-1	1,3-Dichlorobenzene	u	5.0	0.5	132-64-9	Dibenzofuran	u	5.0	0.5
106-46-7	1,4-Dichlorobenzene	u	5.0	0.5	100-02-7	4-Nitrophenol	u	50	5
95-50-1	1,2-Dichlorobenzene	u	5.0	0.5	121-14-2	2,4-Dinitrotoluene	u	5.0	0.5
100-51-6	Benzyl alcohol	u	50	5	86-73-7	Fluorene	u	5.0	0.5
95-48-7	2-Methylphenol	u	5.0	0.5	84-66-2	Diethyl phthalate	u	5.0	0.5
108-60-1	2,2'-Oxybis(1-chloropropane)	u	5.0	0.5	7005-72-3	4-Chlorophenyl phenyl ether	u	5.0	0.5
621-64-7	N-Nitroso-di-n-propylamine	u	5.0	0.5	100-01-6	4-Nitroaniline	u	50	5
67-72-1	Hexachloroethane	u	5.0	0.5	534-52-1	4,6-Dinitro-2-methylphenol	u	50	5
106-44-5	4-Methylphenol	u	5.0	0.5	86-30-6	N-Nitrosodiphenylamine (1)	u	5.0	0.5
98-95-3	Nitrobenzene	u	5.0	0.5	118-74-1	Hexachlorobenzene	u	5.0	0.5
78-59-1	Isophorone	u	5.0	0.5	101-55-3	4-Bromophenyl phenyl ether	u	5.0	0.5
88-75-5	2-Nitrophenol	u	10	1	87-86-5	Pentachlorophenol	u	50	5
105-67-9	2,4-Dimethylphenol	u	10	1	85-01-8	Phenanthrene	u	5.0	0.5
111-91-1	Bis(2-chloroethoxy)methane	u	5.0	0.5	120-12-7	Anthracene	u	5.0	0.5
120-83-2	2,4-Dichlorophenol	u	5.0	0.5	84-74-2	Di-n-butyl phthalate	u	5.0	0.5
65-85-0	Benzoic acid	u	50	5	206-44-0	Fluoranthene	u	5.0	0.5
120-82-1	1,2,4-Trichlorobenzene	u	5.0	0.5	129-00-0	Pyrene	u	5.0	0.5
91-20-3	Naphthalene	u	5.0	0.5	85-68-7	Butyl benzyl phthalate	u	5.0	0.5
106-47-8	4-Chloroaniline	u	10	1	56-55-3	Benzo(a)anthracene	u	5.0	0.5
87-68-3	Hexachlorobutadiene	u	5.0	0.5	91-94-1	3,3'-Dichlorobenzidine	u	20	2
59-50-7	4-Chloro-3-methylphenol	u	10	1	218-01-9	Chrysene	u	5.0	0.5
91-57-6	2-Methylnaphthalene	u	5.0	0.5	117-81-7	Bis(2-ethylhexyl) phthalate	2 J	5.0	0.5
77-47-4	Hexachlorocyclopentadiene	u	20	2	117-84-0	Di-n-octyl phthalate	u	5.0	0.5
88-06-2	2,4,6-Trichlorophenol	u	5.0	0.5	205-99-2	Benzo(b)fluoranthene	u	5.0	0.5
95-95-4	2,4,5-Trichlorophenol	u	5.0	0.5	207-08-9	Benzo(k)fluoranthene	u	5.0	0.5
91-58-7	2-Chloronaphthalene	u	5.0	0.5	50-32-8	Benzo(a)pyrene	u	5.0	0.5
88-74-4	2-Nitroaniline	u	50	5	193-39-5	Indeno(1,2,3-cd)pyrene	u	5.0	0.5
208-96-8	Acenaphthylene	u	5.0	0.5	53-70-3	Dibenzo(a,h)anthracene	u	5.0	0.5
131-11-3	Dimethyl phthalate	u	5.0	0.5	191-24-2	Benzo(g,h,i)perylene	u	5.0	0.5
606-20-2	2,6-Dinitrotoluene	u	5.0	0.5					

u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.
J: Estimated Concentration above MDL but below LRL.

MDL determined according to procedures in 40CFR Appendix B to part 136

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/L)
4165-60-0	Nitrobenzene-d5	84	35-114	43-120	50.0
321-60-8	2-Fluorobiphenyl	81	43-116	50-104	50.0
98904-43-9	Terphenyl-d14	90	33-141	44-113	50.0
4165-62-2	Phenol-d5	78	10-110	52-103	75.0
367-12-4	2-Fluorophenol	79	21-110	45-100	75.0
118-79-6	2,4,6-Tribromophenol	79	10-123	53-120	75.0

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DEPARTMENT OF THE ARMY
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BNA (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	09/28/00	Sample ID:	Sample	LD
Client Sample ID:	Batch Specific	Date Analyzed:	10/19/00	CQAB No.:	M000995-002	WG6616-3
Prep Method:	SW-846 3520 C	Date Reported:	11/14/00	Data File ID:	bna0901010	bna1001011
Analysis Method:	SW-846 8270 C	Matrix:	Water	Amount(L):	1.04	1.00
Instrument ID:	gcmsb	Units:	ug/L	Vial Vol.(mL):	1	1
Analytical Batch:	001019ew1			Final Vol.(mL):	1	1
Analyst:	Greg O. Shearer			Dilution Factor:	1	1

CAS Number	Compound	Sample Result	LD Result	LRL	MDL	RPD (%)	CQAB Lab RPD Limit
108-95-2	Phenol	u	u	4.8	0.5	NC	30
111-44-4	Bis(2-chloroethyl) ether	u	u	4.8	0.5	NC	30
95-57-8	2-Chlorophenol	u	u	4.8	0.5	NC	30
541-73-1	1,3-Dichlorobenzene	u	u	4.8	0.5	NC	30
106-46-7	1,4-Dichlorobenzene	u	u	4.8	0.5	NC	30
95-50-1	1,2-Dichlorobenzene	u	u	4.8	0.5	NC	30
100-51-6	Benzyl alcohol	u	u	48	5	NC	30
95-48-7	2-Methylphenol	u	u	4.8	0.5	NC	30
108-60-1	2,2'-Oxybis(1-chloropropane)	u	u	4.8	0.5	NC	30
621-64-7	N-Nitroso-di-n-propylamine	u	u	4.8	0.5	NC	30
67-72-1	Hexachloroethane	u	u	4.8	0.5	NC	30
106-44-5	4-Methylphenol	u	u	4.8	0.5	NC	30
98-95-3	Nitrobenzene	u	u	4.8	0.5	NC	30
78-59-1	Isophorone	u	u	4.8	0.5	NC	30
88-75-5	2-Nitrophenol	u	u	9.6	1	NC	60
105-67-9	2,4-Dimethylphenol	u	u	9.6	1	NC	60
111-91-1	Bis(2-chloroethoxy)methane	u	u	4.8	0.5	NC	30
120-83-2	2,4-Dichlorophenol	u	u	4.8	0.5	NC	30
65-85-0	Benzoic acid	u	u	48	5	NC	60
120-82-1	1,2,4-Trichlorobenzene	u	u	4.8	0.5	NC	30
91-20-3	Naphthalene	u	u	4.8	0.5	NC	30
106-47-8	4-Chloroaniline	u	u	9.6	1	NC	60
87-68-3	Hexachlorobutadiene	u	u	4.8	0.5	NC	30
59-50-7	4-Chloro-3-methylphenol	u	u	9.6	1	NC	30
91-57-6	2-Methylnaphthalene	u	u	4.8	0.5	NC	30
77-47-4	Hexachlorocyclopentadiene	u	u	19	2	NC	60
88-06-2	2,4,6-Trichlorophenol	u	u	4.8	0.5	NC	30
95-95-4	2,4,5-Trichlorophenol	u	u	4.8	0.5	NC	30
91-58-7	2-Chloronaphthalene	u	u	4.8	0.5	NC	30
88-74-4	2-Nitroaniline	u	u	48	5	NC	60
208-96-8	Acenaphthylene	u	u	4.8	0.5	NC	30
131-11-3	Dimethyl phthalate	u	u	4.8	0.5	NC	30
606-20-2	2,6-Dinitrotoluene	20	u	4.8	0.5	NC	30
99-09-2	3-Nitroaniline	u	u	48	5	NC	60
83-32-9	Acenaphthene	u	u	4.8	0.5	NC	30
51-28-5	2,4-Dinitrophenol	u	u	48	5	NC	60
132-64-9	Dibenzofuran	u	u	4.8	0.5	NC	30
100-02-7	4-Nitrophenol	u	u	48	5	NC	60
121-14-2	2,4-Dinitrotoluene	24	u	4.8	0.5	NC	60
86-73-7	Fluorene	u	u	4.8	0.5	NC	30
84-66-2	Diethyl phthalate	u	u	4.8	0.5	NC	30
7005-72-3	4-Chlorophenyl phenyl ether	u	u	4.8	0.5	NC	30
100-01-6	4-Nitroaniline	u	u	48	5	NC	30
534-52-1	4,6-Dinitro-2-methylphenol	u	u	48	5	NC	60
86-30-6	N-Nitrosodiphenylamine (1)	u	u	4.8	0.5	NC	30
118-74-1	Hexachlorobenzene	u	u	4.8	0.5	NC	30
101-55-3	4-Bromophenyl phenyl ether	u	u	4.8	0.5	NC	30
87-86-5	Pentachlorophenol	u	u	48	5	NC	60

NC: Parameter is Not Calculable.
u: Below Method Detection Limit
(1): Cannot be distinguished from Diphenylamine by this method.

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DEPARTMENT OF THE ARMY
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BNA (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	09/28/00	Sample ID:	Sample	LD
Client Sample ID:	Batch Specific	Date Analyzed:	10/19/00	CQAB No.:	M000995-002	WG6616-3
Prep Method:	SW-846 3520 C	Date Reported:	11/14/00	Data File ID:	bna0901010	bna1001011
Analysis Method:	SW-846 8270 C	Matrix:	Water	Amount(L):	1.04	1.00
Instrument ID:	gcmsb	Units:	ug/L	Vial Vol.(mL):	1	1
Analytical Batch:	001019ew1			Final Vol.(mL):	1	1
Analyst:	Greg O. Shearer			Dilution Factor:	1	1

CAS Number	Compound	Sample Result	LD Result	LRL	MDL	RPD (%)	CQAB Lab RPD Limit
85-01-8	Phenanthrene	u	u	4.8	0.5	NC	30
120-12-7	Anthracene	u	u	4.8	0.5	NC	30
84-74-2	Di-n-butyl phthalate	u	u	4.8	0.5	NC	30
206-44-0	Fluoranthene	u	u	4.8	0.5	NC	30
129-00-0	Pyrene	u	u	4.8	0.5	NC	30
85-68-7	Butyl benzyl phthalate	1 J	u	4.8	0.5	NC	30
56-55-3	Benzo(a)anthracene	u	u	4.8	0.5	NC	30
91-94-1	3,3'-Dichlorobenzidine	u	u	19	2	NC	60
218-01-9	Chrysene	u	u	4.8	0.5	NC	30
117-81-7	Bis(2-ethylhexyl) phthalate	2 JB	3 JB	4.8	0.5	X	30
117-84-0	Di-n-octyl phthalate	u	u	4.8	0.5	NC	30
205-99-2	Benzo(b)fluoranthene	u	u	4.8	0.5	NC	30
207-08-9	Benzo(k)fluoranthene	u	u	4.8	0.5	NC	30
50-32-8	Benzo(a)pyrene	u	u	4.8	0.5	NC	30
193-39-5	Indeno(1,2,3-cd)pyrene	u	u	4.8	0.5	NC	30
53-70-3	Dibenzo(a,h)anthracene	u	u	4.8	0.5	NC	30
191-24-2	Benzo(g,h,i)perylene	u	u	4.8	0.5	NC	30

NC: Parameter is Not Calculable.
u: Below Method Detection Limit
J: Estimated Concentration above MDL but below LRL.
B: Compound also present in the method blank.
X: RPD not calculated due to the uncertainty associated with estimated concentrations.

Method Quality Control

CAS Number	Surrogate Standard Name	Added (ug/L)	Sample (ug/L)	Sample Rec (%)	Added Dup (ug/L)	Dup (ug/L)	Dup Rec (%)	Method % Rec Limits	CQAB % Rec Limits	RPD (%)	CQAB Lab RPD Limit
4165-60-0	Nitrobenzene-d5	48.1	41.8	87	50.0	37.4	75	35-114	43-120	15	30
321-60-8	2-Fluorobiphenyl	48.1	38.9	81	50.0	38.3	77	43-116	50-104	6	30
98904-43-9	Terphenyl-d14	48.1	38.0	79	50.0	37.6	75	33-141	44-113	5	30
4165-62-2	Phenol-d5	72.1	55.2	77	75.0	49.4	66	10-110	52-103	15	30
367-12-4	2-Fluorophenol	72.1	59.0	82	75.0	52.4	70	21-110	45-100	16	30
118-79-6	2,4,6-Tribromophenol	72.1	59.4	82	75.0	59.3	79	10-123	53-120	4	30

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BNA (Matrix Spike, Matrix Spike Duplicate) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C					
Project Number:	6008	Date Extracted:	09/28/00	Sample ID:	MS	MSD
Client Sample ID:	Batch Specific	Date Analyzed:	10/19/00	CQAB No.:	WG6616-4	-
CQAB Sample ID:	M000995-003	Date Reported:	11/14/00	Data File ID:	bna1301014	-
Prep Method:	SW-846 3520 C	Matrix:	Water	Amount(L):	1.01	-
Analysis Method:	SW-846 8270 C	Units:	ug/L	Vial Vol.(mL):	1	-
Analytical Batch:	001019ew1			Final Vol.(mL):	1	-
Analyst:	Greg O. Shearer	Instrument ID:	gcmsb	Dilution Factor:	1	-

CAS Number	Compound	## Sample Result	MS Spike	MS Conc	MS %Rec	MSD Spike	MSD Conc	MSD %Rec	RPD (%)	Method Limits RPD	Method Limits %Rec	Lab Limits RPD	Lab Limits %Rec
108-95-2	Phenol	u	79	70	89	-	-	-	-	42	12-110	30	50-105
95-57-8	2-Chlorophenol	u	79	71	90	-	-	-	-	40	27-123	30	47-102
106-46-7	1,4-Dichlorobenzene	u	50	35	70	-	-	-	-	28	36-97	30	33-87
621-64-7	N-Nitroso-di-n-propylamine	u	50	44	88	-	-	-	-	38	41-116	30	52-111
120-82-1	1,2,4-Trichlorobenzene	u	50	36	72	-	-	-	-	28	39-98	30	38-94
59-50-7	4-Chloro-3-methylphenol	u	79	72	91	-	-	-	-	42	23-97	30	53-110
83-32-9	Acenaphthene	u	50	43	87	-	-	-	-	31	46-118	30	55-105
100-02-7	4-Nitrophenol	u	79	59	74	-	-	-	-	50	10-80	60	49-115
121-14-2	2,4-Dinitrotoluene	u	50	46	91	-	-	-	-	38	24-96	60	52-123
87-86-5	Pentachlorophenol	u	79	65	83	-	-	-	-	50	9-103	60	58-111
129-00-0	Pyrene	u	50	43	86	-	-	-	-	31	26-127	30	49-108

u: Below Method Detection Limit
##: Sample result used for spike recovery calculation is adjusted for the amount of sample used for the MS/MSD.
%Rec: Percent of the spike recovered from the matrix

Method Quality Control

CAS Number	Surrogate Standard Name	Added (ug/L)	MS (ug/L)	MS Rec (%)	Added MSD (ug/L)	MSD (ug/L)	MSD Rec (%)	Method %Rec Limits	CQAB %Rec Limits	RPD (%)	CQAB Lab RPD Limit
4165-60-0	Nitrobenzene-d5	49.5	41.1	83	-	-	-	35-114	43-120	-	30
321-60-8	2-Fluorobiphenyl	49.5	40.7	82	-	-	-	43-116	50-104	-	30
98904-43-9	Terphenyl-d14	49.5	29.5	60	-	-	-	33-141	44-113	-	30
4165-62-2	Phenol-d5	74.3	63.8	86	-	-	-	10-110	52-103	-	30
367-12-4	2-Fluorophenol	74.3	61.6	83	-	-	-	21-110	45-100	-	30
118-79-6	2,4,6-Tribromophenol	74.3	59.4	80	-	-	-	10-123	53-120	-	30

Note: Due to insufficient sample volume, a matrix spike duplicate could not be extracted with this workgroup.

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BNA (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/28/00	Matrix:	Water
CQAB Sample ID:	WG6616-2	Date Analyzed:	10/19/00	Units:	ug/L
Prep Method:	SW-846 3520 C	Date Reported:	11/14/00	Amount(L):	1.0
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001019ew1	Data File ID:	bna0201003	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Method Range	CQAB Range
108-95-2	Phenol	71	80.0	88	5-112	50-105
111-44-4	Bis(2-chloroethyl) ether	43	50.0	85	12-158	44-110
95-57-8	2-Chlorophenol	71	80.0	88	23-134	47-102
541-73-1	1,3-Dichlorobenzene	30	50.0	59	D-172	32-86
106-46-7	1,4-Dichlorobenzene	32	50.0	63	20-124	33-87
95-50-1	1,2-Dichlorobenzene	33	50.0	65	32-129	34-91
100-51-6	Benzyl alcohol	44 J	50.0	87		55-100
95-48-7	2-Methylphenol	70	80.0	88		55-101
108-60-1	2,2'-Oxybis(1-chloropropane)	46	50.0	91		51-102
621-64-7	N-Nitroso-di-n-propylamine	45	50.0	91	D-230	52-111
67-72-1	Hexachloroethane	29	50.0	57	40-113	29-83
106-44-5	4-Methylphenol	69	80.0	86		34-91
98-95-3	Nitrobenzene	45	50.0	89	35-180	46-121
78-59-1	Isophorone	41	50.0	83	21-196	42-123
88-75-5	2-Nitrophenol	71	80.0	88	29-182	43-117
105-67-9	2,4-Dimethylphenol	64	80.0	80	32-119	51-100
111-91-1	Bis(2-chloroethoxy)methane	44	50.0	88	33-184	45-117
120-83-2	2,4-Dichlorophenol	71	80.0	88		51-108
65-85-0	Benzoic acid	137	160.	86		10-150
120-82-1	1,2,4-Trichlorobenzene	32	50.0	65	44-142	38-94
91-20-3	Naphthalene	39	50.0	77	21-133	47-99
106-47-8	4-Chloroaniline	40	50.0	80		10-101
87-68-3	Hexachlorobutadiene	30	50.0	60	24-116	30-94
59-50-7	4-Chloro-3-methylphenol	70	80.0	87	22-147	53-110
91-57-6	2-Methylnaphthalene	40	50.0	81		49-100
77-47-4	Hexachlorocyclopentadiene	9 J	50.0	17		10-53
88-06-2	2,4,6-Trichlorophenol	72	80.0	91	37-144	55-110
95-95-4	2,4,5-Trichlorophenol	77	80.0	96		57-111
91-58-7	2-Chloronaphthalene	40	50.0	80		50-104
88-74-4	2-Nitroaniline	44 J	50.0	89		42-147
208-96-8	Acenaphthylene	43	50.0	86	33-145	54-101
131-11-3	Dimethyl phthalate	45	50.0	91	D-112	57-106
606-20-2	2,6-Dinitrotoluene	44	50.0	89	50-158	50-126
99-09-2	3-Nitroaniline	31 J	50.0	62		10-94
83-32-9	Acenaphthene	42	50.0	85	47-145	55-105
51-28-5	2,4-Dinitrophenol	71	80.0	89	D-191	10-140
132-64-9	Dibenzofuran	43	50.0	86		54-107
100-02-7	4-Nitrophenol	60	80.0	75	D-132	49-115
121-14-2	2,4-Dinitrotoluene	45	50.0	89	39-139	52-123
86-73-7	Fluorene	43	50.0	86	59-121	54-110
84-66-2	Diethyl phthalate	44	50.0	88	D-114	54-107
7005-72-3	4-Chlorophenyl phenyl ether	46	50.0	93	25-158	53-110
100-01-6	4-Nitroaniline	33 J	50.0	65		10-149
534-52-1	4,6-Dinitro-2-methylphenol	77	80.0	96		27-136
86-30-6	N-Nitrosodiphenylamine (1)	44	50.0	88		52-111
118-74-1	Hexachlorobenzene	46	50.0	93	D-152	55-115
101-55-3	4-Bromophenyl phenyl ether	48	50.0	96	53-127	54-115
87-86-5	Pentachlorophenol	73	80.0	92	14-176	58-111

D: SW-846 term to indicate that the analyte is expected to be detectable.
J: Estimated Concentration above MDL but below LRL.
(1): Cannot be distinguished from Diphenylamine by this method.

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BNA (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Works - TNT Area C				
Project Number:	6008	Date Extracted:	09/28/00	Matrix:	Water
CQAB Sample ID:	WG6616-2	Date Analyzed:	10/19/00	Units:	ug/L
Prep Method:	SW-846 3520 C	Date Reported:	11/14/00	Amount(L):	1.0
Analysis Method:	SW-846 8270 C	Instrument ID:	gcmsb	Vial Vol.(mL):	1
Analytical Batch:	001019ew1	Data File ID:	bna0201003	Final Vol.(mL):	1
Analyst:	Greg O. Shearer			Dilution Factor:	1

CAS Number	Compound	LCS Result	Spike Added	LCS %Rec	Method Range	CQAB Range
85-01-8	Phenanthrene	45	50.0	90	54-120	52-108
120-12-7	Anthracene	45	50.0	90	27-133	52-105
84-74-2	Di-n-butyl phthalate	44	50.0	88		50-109
206-44-0	Fluoranthene	44	50.0	88	26-137	58-110
129-00-0	Pyrene	42	50.0	85	52-115	49-108
85-68-7	Butyl benzyl phthalate	44	50.0	87	D-157	42-114
56-55-3	Benzo(a)anthracene	44	50.0	88	33-143	51-110
91-94-1	3,3'-Dichlorobenzidine	32	50.0	64	D-262	10-78
218-01-9	Chrysene	46	50.0	91	17-168	52-107
117-81-7	Bis(2-ethylhexyl) phthalate	45 B	50.0	90	8-158	16-153
117-84-0	Di-n-octyl phthalate	50	50.0	100	4-146	36-125
205-99-2	Benzo(b)fluoranthene	44	50.0	88	24-159	55-109
207-08-9	Benzo(k)fluoranthene	45	50.0	90	11-162	54-106
50-32-8	Benzo(a)pyrene	40	50.0	80	17-163	53-101
193-39-5	Indeno(1,2,3-cd)pyrene	37	50.0	74	D-171	51-106
53-70-3	Dibenzo(a,h)anthracene	37	50.0	75	D-227	52-109
191-24-2	Benzo(g,h,i)perylene	39	50.0	77	D-219	49-108

D: SW-846 term to indicate that the analyte is expected to be detectable.
B: Compound also present in the method blank.

Method Quality Control

CAS Number	Surrogate Standard	Recovery (%)	Method Range	CQAB Lab Range	Spike (ug/L)
4165-60-0	Nitrobenzene-d5	78	35-114	43-120	50.0
321-60-8	2-Fluorobiphenyl	80	43-116	50-104	50.0
98904-43-9	Terphenyl-d14	83	33-141	44-113	50.0
4165-62-2	Phenol-d5	84	10-110	52-103	75.0
367-12-4	2-Fluorophenol	83	21-110	45-100	75.0
118-79-6	2,4,6-Tribromophenol	83	10-123	53-120	75.0

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PCBs Sample Report

Project Name:	Former Plumbrook Ordnance Work	Date Sampled:	09/18/00	Matrix:	Water
Project Number:	6008	Date Received:	09/20/00	Units:	ug/L
Client Sample ID:	AB2017	Date Reported:	10/12/00	Sample Amount:	1000 mL
CQAB Sample ID :	M000975-003				

Analyst:	Asuncion	Date Extracted:	09/21/00	Dilution Factor:	1
Method:	SW-846 3510C/8082	Date Analyzed :	10/04/00	Batch ID:	WG6547

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	0.50	0.1
1104-28-2	Aroclor-1221	u	0.50	0.1
11141-16-5	Aroclor-1232	u	0.50	0.1
53469-21-9	Aroclor-1242	u	0.50	0.1
12672-29-6	Aroclor-1248	u	0.50	0.1
11097-69-1	Aroclor-1254	u	0.50	0.1
11096-82-5	Aroclor-1260	u	0.50	0.1

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Decachlorobiphenyl	101	60-150	0.5
Tetrachloro-meta-xylene	78	44-126	0.5

Method Blank : WG6547-1
PCB Matrix Spike : WG6547-3
PCB LCS : WG6547-2
Laboratory Duplicate : WG6547-4
PCB Matrix Spike Duplicate :

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PCBs Sample Report

Project Name:	Former Plumbrook Ordnance Work	Date Sampled:	09/19/00	Matrix:	Water
Project Number:	6008	Date Received:	09/21/00	Units:	ug/L
Client Sample ID:	AB2019	Date Reported:	10/12/00	Sample Amount:	870 mL
CQAB Sample ID :	M000975-006				

Analyst:	Asuncion	Date Extracted:	09/21/00	Dilution Factor:	1
Method:	SW-846 3510C/8082	Date Analyzed :	10/04/00	Batch ID:	WG6547

CAS Number	Target Analyte		Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016		u	0.57	0.1
1104-28-2	Aroclor-1221		u	0.57	0.1
11141-16-5	Aroclor-1232		u	0.57	0.1
53469-21-9	Aroclor-1242		u	0.57	0.1
12672-29-6	Aroclor-1248		u	0.57	0.1
11097-69-1	Aroclor-1254		u	0.57	0.1
11096-82-5	Aroclor-1260	22 ppb	u	0.57	0.1

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Decachlorobiphenyl	98	60-150	0.5
Tetrachloro-meta-xylene	99	44-126	0.5

Method Blank : WG6547-1
PCB Matrix Spike : WG6547-3
PCB LCS : WG6547-2
Laboratory Duplicate : WG6547-4
PCB Matrix Spike Duplicate :

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PCBs Method Blank Report

Method Blank Sample ID: WG6547-1 | Date Reported: 10/12/00 | Matrix: Water | Units: ug/L

Analyst: Asuncion | Date Extracted: 09/21/00 | Dilution Factor: 1
Method: SW-846 3510C/8082 | Date Analyzed: 10/04/00 | Batch ID: WG6547

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	0.50	0.1
1104-28-2	Aroclor-1221	u	0.50	0.1
11141-16-5	Aroclor-1232	u	0.50	0.1
53469-21-9	Aroclor-1242	u	0.50	0.1
12672-29-6	Aroclor-1248	u	0.50	0.1
11097-69-1	Aroclor-1254	u	0.50	0.1
11096-82-5	Aroclor-1260	u	0.50	0.1

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Decachlorobiphenyl	98	60-150	0.5
Tetrachloro-meta-xylene	70	44-126	0.5

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PCBs (Laboratory Matrix Duplicate) Report

LD Sample ID: WG6547-4
Sample ID: M000975-006

Date Reported: 10/12/00

Matrix: Water
Units: ug/L
Sample Amount: 870 mL

Analyst: Asuncion
Method: SW-846 3510C/8082

Date Extracted: 09/21/00
Date Analyzed: 10/04/00

Batch ID: WG6547

CAS Number	Target Analyte	Sample Result	LD Result	Laboratory Reporting Limit	Method Detection Limit	RPD	QC Limits
12674-11-2	Aroclor-1016	u	u	0.57	0.1	NC	35
1104-28-2	Aroclor-1221	u	u	0.57	0.1	NC	35
11141-16-5	Aroclor-1232	u	u	0.57	0.1	NC	35
53469-21-9	Aroclor-1242	u	u	0.57	0.1	NC	35
12672-29-6	Aroclor-1248	u	u	0.57	0.1	NC	35
11097-69-1	Aroclor-1254	u	u	0.57	0.1	NC	35
11096-82-5	Aroclor-1260	u	u	0.57	0.1	NC	65

u: Below Detection Limit
NC: Not Calculable

Laboratory Comments:

RPD = (|Sample Result - LD Result| x 100)/((Sample Result + LD Result)/2)

Quality Control

Surrogate Standard	Recovery (%) Sample	LD	Acceptable	Spike (ug/L)	RPD	QC Limits
Decachlorobiphenyl	98	97	60-150	0.5	0.4	37
Tetrachloro-meta-xylene	99	82	44-126	0.5	19	37

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PCBs(Matrix Spike/Matrix Spike Duplicate)

MS Pest Sample ID: N/A
MSD Pest Sample ID: N/A
Sample ID: M000976-003

MS PCB Sample ID: WG6547-3
MSD PCB Sample ID: N/A
Date Reported: 10/12/00

Matrix: Water
Units: ug/L

Analyst: Asuncion
Method: SW-846 3510C/8082

Date Extracted: 09/21/00
Date Analyzed: 10/04/00

Batch ID: WG6547

CAS Number	Target Analyte	Sample Result	Spike Added	Conc MS	%Rec MS	QC Limits	Conc MSD	%Rec MSD	RPD	RPD Limits
12674-11-2	Aroclor-1016	u	5.2	4.0	77	60-141	-	-	-	35
1104-28-2	Aroclor-1221	u	NS	u	NC	60-141	-	-	-	35
11141-16-5	Aroclor-1232	u	NS	u	NC	60-141	-	-	-	35
53469-21-9	Aroclor-1242	u	NS	u	NC	60-141	-	-	-	35
12672-29-6	Aroclor-1248	u	NS	u	NC	60-141	-	-	-	35
11097-69-1	Aroclor-1254	u	NS	u	NC	60-141	-	-	-	35
11096-82-5	Aroclor-1260	u	5.2	5.0	96	60-125	-	-	-	65

u: Below Method Detection Limit
NC: Not Calculable

*: Indicates the value is outside acceptance limits.
NS: Compound not spiked.

Laboratory Comments:

RPD = (|MS Result - MSD Result| x 100)/((MS Result + MSD Result)/2)
Normal sample amount is 1000 mL.

Quality Control

Surrogate Standard	Recovery (%) MS	MSD	Acceptable	Spike (ug/L)	RPD	QC Limits
Decachlorobiphenyl	98	-	60-150	0.50	NC	37
Tetrachloro-meta-xylene	83	-	44-126	0.50	NC	37

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PCBs (Laboratory Control Sample)

LCS ID: WG6547-2 | Date Reported: 10/12/00 | Matrix: Water
Units: ug/L

Analyst: Asuncion
Method: SW-846 3510C/8082

Date Extracted: 09/21/00
Date Analyzed: 10/04/00
Batch ID: WG6547

CQAB PCB Code: PCBL-006

CAS Number	Compound	Result	True Value	Method Detection Limit	Lab Reporting Limit	% Rec	Acceptance Limits (%)
12674-11-2	Aroclor-1016	3.3	5.0	0.1	0.50	67	60-141
1104-28-2	Aroclor-1221	u	NS	0.1	0.50	NC	60-141
11141-16-5	Aroclor-1232	u	NS	0.1	0.50	NC	60-141
53469-21-9	Aroclor-1242	u	NS	0.1	0.50	NC	60-141
12672-29-6	Aroclor-1248	u	NS	0.1	0.50	NC	60-141
11097-69-1	Aroclor-1254	u	NS	0.1	0.50	NC	60-141
11096-82-5	Aroclor-1260	4.1	5.0	0.1	0.50	83	60-125

u: Below Method Detection Limit
NC: Not Calculable

NS: Compound not spiked.
Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Decachlorobiphenyl	88	60-150	0.50
Tetrachloro-meta-xylene	55	44-126	0.50

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PCBs Sample Report

Project Name:	Former Plumbrook Ordnance Work	Date Sampled:	09/18/00	Matrix:	Soil
Project Number:	6008	Date Received:	09/20/00	Units:	ug/kg
Client Sample ID:	AB1017	Date Reported:	11/30/00	Sample Amount:	25.0 g
CQAB Sample ID :	M000975-001			% Solids:	69.5

Analyst:	Asuncion	Date Extracted:	09/21/00	Dilution Factor:	1
Method:	SW-846 3540B/8082	Date Analyzed :	10/05/00	Batch ID:	WG6544

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	29	4
1104-28-2	Aroclor-1221	u	29	4
11141-16-5	Aroclor-1232	u	29	4
53469-21-9	Aroclor-1242	u	29	4
12672-29-6	Aroclor-1248	u	29	4
11097-69-1	Aroclor-1254	u	29	4
11096-82-5	Aroclor-1260	u	29	4

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/kg)
Decachlorobiphenyl	93	60-150	20
Tetrachloro-meta-xylene	100	52-143	20

Method Blank : WG6544-1
PCB Matrix Spike : WG6544-3
PCB LCS : WG6544-2
Laboratory Duplicate : WG6544-5
PCB Matrix Spike Duplicate : WG6544-4

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PCBs Sample Report

Project Name:	Former Plumbrook Ordnance Work	Date Sampled:	09/19/00	Matrix:	Soil
Project Number:	6008	Date Received:	09/21/00	Units:	ug/kg
Client Sample ID:	AB1019	Date Reported:	11/30/00	Sample Amount:	25.1 g
CQAB Sample ID :	M000975-004			% Solids:	75.9

Analyst:	Asuncion	Date Extracted:	09/21/00	Dilution Factor:	1
Method:	SW-846 3540B/8082	Date Analyzed :	10/05/00	Batch ID:	WG6544

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	26	4
1104-28-2	Aroclor-1221	u	26	4
11141-16-5	Aroclor-1232	u	26	4
53469-21-9	Aroclor-1242	u	26	4
12672-29-6	Aroclor-1248	u	26	4
11097-69-1	Aroclor-1254	u	26	4
11096-82-5	Aroclor-1260	84	26	4

u: Below Method Detection Limit

Laboratory Comments: Result from second column: Aroclor-1260 @ 69 ug/kg.

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/kg)
Decachlorobiphenyl	106	60-150	20
Tetrachloro-meta-xylene	97	52-143	20

Method Blank : WG6544-1
PCB Matrix Spike : WG6544-3
PCB LCS : WG6544-2
Laboratory Duplicate : WG6544-5
PCB Matrix Spike Duplicate : WG6544-4

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PCBs Method Blank Report

Method Blank Sample ID: WG6544-1 | Date Reported: 11/30/00 | Matrix: Soil | Units: ug/kg

Analyst: Asuncion | Date Extracted: 09/21/00 | Dilution Factor: 1
Method: SW-846 3540B/8082 | Date Analyzed: 10/05/00 | Batch ID: WG6544

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	20	4
1104-28-2	Aroclor-1221	u	20	4
11141-16-5	Aroclor-1232	u	20	4
53469-21-9	Aroclor-1242	u	20	4
12672-29-6	Aroclor-1248	u	20	4
11097-69-1	Aroclor-1254	u	20	4
11096-82-5	Aroclor-1260	u	20	4

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/kg)
Decachlorobiphenyl	101	60-150	20
Tetrachloro-meta-xylene	79	52-143	20

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PCBs (Laboratory Matrix Duplicate) Report

LD Sample ID: WG6544-5
Sample ID: M000956-001

Date Reported: 11/30/00

Matrix: Soil
Units: ug/kg
Sample Amount: 25.1 g
% Solids: 84.9

Analyst: Asuncion
Method: SW-846 3540B/8082

Date Extracted: 09/21/00
Date Analyzed: 10/25/00

Batch ID: WG6544

CAS Number	Target Analyte	Sample Result	LD Result	Laboratory Reporting Limit	Method Detection Limit	RPD	QC Limits
12674-11-2	Aroclor-1016	u	u	23	4	NC	35
1104-28-2	Aroclor-1221	u	u	23	4	NC	35
11141-16-5	Aroclor-1232	u	u	23	4	NC	35
53469-21-9	Aroclor-1242	u	u	23	4	NC	35
12672-29-6	Aroclor-1248	103	99	23	4	4	35
11097-69-1	Aroclor-1254	u	u	23	4	NC	35
11096-82-5	Aroclor-1260	u	u	23	4	NC	51

u: Below Detection Limit
NC: Not Calculable

*: Indicates the value is outside acceptance limits.
Laboratory Comments:

RPD = (|Sample Result - LD Result| x 100)/((Sample Result + LD Result)/2)

Quality Control

Surrogate Standard	Recovery (%) Sample	LD	Acceptable	Spike (ug/kg)	RPD	QC Limits
Decachlorobiphenyl	97	116	60-150	20	18	54
Tetrachloro-meta-xylene	37 *	61	52-143	20	49	54

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PCBs (Matrix Spike/Matrix Spike Duplicate)

MS Pest Sample ID: N/A
MSD Pest Sample ID: N/A
Sample ID: M000956-001

MS PCB Sample ID: WG6544-3
MSD PCB Sample ID: WG6544-4
Date Reported: 11/30/00

Matrix: Soil
Units: ug/kg
% Solids: 84.9

Analyst: Asuncion
Method: SW-846 3540B/8082

Date Extracted: 09/21/00
Date Analyzed: 10/25/00

Batch ID: WG6544

CAS Number	Target Analyte	Sample Result	Spike Added	Conc MS	%Rec MS	QC Limits	Conc MSD	%Rec MSD	RPD	RPD Limits
12674-11-2	Aroclor-1016	u	235	250	106	60-141	290	123	15	35
1104-28-2	Aroclor-1221	u	NS	u	NC	60-141	u	NC	NC	35
11141-16-5	Aroclor-1232	u	NS	u	NC	60-141	u	NC	NC	35
53469-21-9	Aroclor-1242	u	NS	u	NC	60-141	u	NC	NC	35
12672-29-6	Aroclor-1248	103	NS	u	NC	60-141	u	NC	NC	35
11097-69-1	Aroclor-1254	u	NS	u	NC	60-141	u	NC	NC	35
11096-82-5	Aroclor-1260	u	235	260	111	41-149	300	128	14	51

u: Below Method Detection Limit
NC: Not Calculable

*: Indicates the value is outside acceptance limits.
NS: Compound not spiked.

Laboratory Comments:

RPD = (|MS Result - MSD Result| x 100)/((MS Result + MSD Result)/2)
Normal sample amount is 25 g.

Quality Control

Surrogate Standard	Recovery (%) MS	MSD	Acceptable	Spike (ug/kg)	RPD	QC Limits
Decachlorobiphenyl	107	121	60-150	20	12	54
Tetrachloro-meta-xylene	49 *	70	52-143	20	35	54

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PCBs (Laboratory Control Sample)

LCS ID: WG6544-2 | Date Reported: 11/30/00 | Matrix: Soil
Units: ug/kg

Analyst: Asuncion
Method: SW-846 3510C/8082

Date Extracted: 09/21/00
Date Analyzed: 10/05/00
Batch ID: WG6544

CQAB PCB Code: PCBS-006

CAS Number	Compound	Result	True Value	Method Detection Limit	Lab Reporting Limit	% Rec	Acceptance Limits (%)
12674-11-2	Aroclor-1016	238	200	4	20	119	60-141
1104-28-2	Aroclor-1221	u	NS	4	20	NC	60-141
11141-16-5	Aroclor-1232	u	NS	4	20	NC	60-141
53469-21-9	Aroclor-1242	u	NS	4	20	NC	60-141
12672-29-6	Aroclor-1248	u	NS	4	20	NC	60-141
11097-69-1	Aroclor-1254	u	NS	4	20	NC	60-141
11096-82-5	Aroclor-1260	254	200	4	20	127	41-149

u: Below Method Detection Limit
NC: Not Calculable

NS: Compound not spiked.
Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/kg)
Decachlorobiphenyl	113	60-150	20.
Tetrachloro-meta-xylene	102	52-143	20.

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C134

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PCBs Sample Report

Project Name:	Former Plumbrook Ordnance Work	Date Sampled:	09/26/00	Matrix:	Water
Project Number:	6008	Date Received:	09/27/00	Units:	ug/L
Client Sample ID:	AA3012	Date Reported:	11/08/00	Sample Amount:	940 mL
CQAB Sample ID :	M000992-003				

Analyst:	Asuncion	Date Extracted:	09/28/00	Dilution Factor:	1
Method:	SW-846 3510C/8082	Date Analyzed :	10/10/00	Batch ID:	WG6592

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u #	5	0.1
1104-28-2	Aroclor-1221	u	0.53	0.1
11141-16-5	Aroclor-1232	u	0.53	0.1
53469-21-9	Aroclor-1242	u	0.53	0.1
12672-29-6	Aroclor-1248	u	0.53	0.1
11097-69-1	Aroclor-1254	u	0.53	0.1
11096-82-5	Aroclor-1260	u	0.53	0.1

#: Interfernce in the early portion of the chromatogram resulted in raising of the LRL to an appropriate level. Note that the surrogate was also not detectable due to this interference.
u: Below Method Detection Limit

*: Indicates the value is outside acceptance limits.
Laboratory Comments:
MI: Matrix interference

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Decachlorobiphenyl	93	60-150	0.5
Tetrachloro-meta-xylene	MI	44-126	0.5

Method Blank : WG6592-1
PCB Matrix Spike : WG6592-4
PCB LCS : WG6592-2
Laboratory Duplicate : WG6592-3
PCB Matrix Spike Duplicate :

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PCBs Method Blank Report

Method Blank Sample ID: WG6592-1 | Date Reported: 11/08/00 | Matrix: Water | Units: ug/L

Analyst: Asuncion | Date Extracted: 09/28/00 | Dilution Factor: 1
Method: SW-846 3510C/8082 | Date Analyzed: 10/10/00 | Batch ID: WG6592

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	0.50	0.1
1104-28-2	Aroclor-1221	u	0.50	0.1
11141-16-5	Aroclor-1232	u	0.50	0.1
53469-21-9	Aroclor-1242	u	0.50	0.1
12672-29-6	Aroclor-1248	u	0.50	0.1
11097-69-1	Aroclor-1254	u	0.50	0.1
11096-82-5	Aroclor-1260	u	0.50	0.1

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Decachlorobiphenyl	90	60-150	0.5
Tetrachloro-meta-xylene	45	44-126	0.5

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C136

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PCBs (Laboratory Matrix Duplicate) Report

LD Sample ID: WG6592-3
Sample ID: M000992-003

Date Reported: 11/08/00

Matrix: Water
Units: ug/L
Sample Amount: 920 mL

Analyst: Asuncion
Method: SW-846 3510C/8082

Date Extracted: 09/28/00
Date Analyzed: 10/10/00

Batch ID: WG6592

CAS Number	Target Analyte	Sample Result	LD Result	Laboratory Reporting Limit	Method Detection Limit	RPD	QC Limits
12674-11-2	Aroclor-1016	u #	u #	5	0.1	NC	35
1104-28-2	Aroclor-1221	u	u	0.54	0.1	NC	35
11141-16-5	Aroclor-1232	u	u	0.54	0.1	NC	35
53469-21-9	Aroclor-1242	u	u	0.54	0.1	NC	35
12672-29-6	Aroclor-1248	u	u	0.54	0.1	NC	35
11097-69-1	Aroclor-1254	u	u	0.54	0.1	NC	35
11096-82-5	Aroclor-1260	u	u	0.54	0.1	NC	65

#: Interference in the early portion of the chromatogram resulted in raising the LRL to an appropriate level. Note that the surrogate was also not detectable due to this interference.
u: Below Detection Limit
NC: Not Calculable

*: Indicates the value is outside acceptance limits.
Laboratory Comments:
MI: Matrix Interference

RPD = (|Sample Result - LD Result| x 100)/((Sample Result + LD Result)/2)

Quality Control

Surrogate Standard	Recovery (%) Sample	LD	Acceptable	Spike (ug/L)	RPD	QC Limits
Decachlorobiphenyl	93	99	60-150	0.5	6	37
Tetrachloro-meta-xylene	MI	MI	44-126	0.5	NC	37

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C137

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PCBs(Matrix Spike/Matrix Spike Duplicate)

MS Pest Sample ID: N/A
MSD Pest Sample ID: N/A
Sample ID: M000997-003

MS PCB Sample ID: WG6592-4
MSD PCB Sample ID: N/A
Date Reported: 11/10/00

Matrix: Water
Units: ug/L

Analyst: Asuncion
Method: SW-846 3510C/8082

Date Extracted: 09/28/00
Date Analyzed: 11/07/00

Batch ID: WG6592

CAS Number	Target Analyte	Sample Result	Spike Added	Conc MS	%Rec MS	QC Limits	Conc MSD	%Rec MSD	RPD	RPD Limits
12674-11-2	Aroclor-1016	u	5.7	5.7	100	60-141	-	-	-	35
1104-28-2	Aroclor-1221	u	NS	u	NC	60-141	-	-	-	35
11141-16-5	Aroclor-1232	u	NS	u	NC	60-141	-	-	-	35
53469-21-9	Aroclor-1242	u	NS	u	NC	60-141	-	-	-	35
12672-29-6	Aroclor-1248	u	NS	u	NC	60-141	-	-	-	35
11097-69-1	Aroclor-1254	u	NS	u	NC	60-141	-	-	-	35
11096-82-5	Aroclor-1260	u	5.7	6.2	109	60-125	-	-	-	65

u: Below Method Detection Limit
NC: Not Calculable

*: Indicates the value is outside acceptance limits.
NS: Compound not spiked.

Laboratory Comments:

RPD = (|MS Result - MSD Result| x 100)/((MS Result + MSD Result)/2)
Normal sample amount is 1000 mL.

Quality Control

Surrogate Standard	Recovery (%) MS	MSD	Acceptable	Spike (ug/L)	RPD	QC Limits
Decachlorobiphenyl	97	-	60-150	0.50	NC	37
Tetrachloro-meta-xylene	113	-	44-126	0.50	NC	37

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C138

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PCBs (Laboratory Control Sample)

LCS ID: WG6592-2 | Date Reported: 11/08/00 | Matrix: Water
Units: ug/L

Analyst: Asuncion
Method: SW-846 3510C/8082

Date Extracted: 09/28/00
Date Analyzed: 10/10/00
Batch ID: WG6592

CQAB PCB Code: PCBL-006

CAS Number	Compound	Result	True Value	Method Detection Limit	Lab Reporting Limit	% Rec	Acceptance Limits (%)
12674-11-2	Aroclor-1016	3.1	5.0	0.1	0.50	62	60-141
1104-28-2	Aroclor-1221	u	NS	0.1	0.50	NC	60-141
11141-16-5	Aroclor-1232	u	NS	0.1	0.50	NC	60-141
53469-21-9	Aroclor-1242	u	NS	0.1	0.50	NC	60-141
12672-29-6	Aroclor-1248	u	NS	0.1	0.50	NC	60-141
11097-69-1	Aroclor-1254	u	NS	0.1	0.50	NC	60-141
11096-82-5	Aroclor-1260	4.8	5.0	0.1	0.50	96	60-125

u: Below Method Detection Limit
NC: Not Calculable

NS: Compound not spiked.
Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Decachlorobiphenyl	92	60-150	0.50
Tetrachloro-meta-xylene	49	44-126	0.50

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PCBs Sample Report

Project Name:	Former Plumbrook Ordnance Work	Date Sampled:	09/26/00	Matrix:	Soil
Project Number:	6008	Date Received:	09/27/00	Units:	ug/kg
Client Sample ID:	AB0435	Date Reported:	11/14/00	Sample Amount:	25.0 g
CQAB Sample ID :	M000992-004			% Solids:	89.2

Analyst:	Asuncion	Date Extracted:	10/05/00	Dilution Factor:	1
Method:	SW-846 3540B/8082	Date Analyzed :	11/01/00	Batch ID:	WG6631

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	22	4
1104-28-2	Aroclor-1221	u	22	4
11141-16-5	Aroclor-1232	u	22	4
53469-21-9	Aroclor-1242	u	22	4
12672-29-6	Aroclor-1248	u	22	4
11097-69-1	Aroclor-1254	104	22	4
11096-82-5	Aroclor-1260	u	22	4

u: Below Method Detection Limit

Laboratory Comments: Result from second column: Aroclor-1254 @ 117 ug/kg.

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/kg)
Decachlorobiphenyl	87	60-150	20
Tetrachloro-meta-xylene	76	52-143	20

Method Blank : WG6631-1
PCB Matrix Spike : WG6631-3
PCB LCS : WG6631-2
Laboratory Duplicate : WG6631-5
PCB Matrix Spike Duplicate : WG6631-4

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PCBs Sample Report

Project Name:	Former Plumbrook Ordnance Work	Date Sampled:	09/27/00	Matrix:	Soil
Project Number:	6008	Date Received:	09/28/00	Units:	ug/kg
Client Sample ID:	AB0428	Date Reported:	11/14/00	Sample Amount:	25.0 g
CQAB Sample ID :	M000997-004			% Solids:	80.1

Analyst:	Asuncion	Date Extracted:	10/05/00	Dilution Factor:	10
Method:	SW-846 3540B/8082	Date Analyzed :	11/01/00	Batch ID:	WG6631

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	260	4
1104-28-2	Aroclor-1221	u	260	4
11141-16-5	Aroclor-1232	u	260	4
53469-21-9	Aroclor-1242	u	260	4
12672-29-6	Aroclor-1248	u	260	4
11097-69-1	Aroclor-1254	u	260	4
11096-82-5	Aroclor-1260	6880 D	260	4

u: Below Method Detection Limit

D: Result quantitated from a 1:10 dilution analyzed 11/6/00.

Laboratory Comments: Result from second column: Aroclor-1260 @ 8410 ug/kg.

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/kg)
Decachlorobiphenyl	124	60-150	20
Tetrachloro-meta-xylene	94	52-143	20

Method Blank : WG6631-1
PCB Matrix Spike : WG6631-3
PCB LCS : WG6631-2
Laboratory Duplicate : WG6631-5
PCB Matrix Spike Duplicate : WG6631-4

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PCBs Sample Report

Project Name:	Former Plumbrook Ordnance Work	Date Sampled:	09/27/00	Matrix:	Soil
Project Number:	6008	Date Received:	09/28/00	Units:	ug/kg
Client Sample ID:	AB0450	Date Reported:	11/14/00	Sample Amount:	25.0 g
CQAB Sample ID :	M000997-005			% Solids:	84.0

Analyst:	Asuncion	Date Extracted:	10/05/00	Dilution Factor:	2
Method:	SW-846 3540B/8082	Date Analyzed :	11/01/00	Batch ID:	WG6631

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	46	4
1104-28-2	Aroclor-1221	u	46	4
11141-16-5	Aroclor-1232	u	46	4
53469-21-9	Aroclor-1242	u	46	4
12672-29-6	Aroclor-1248	u	46	4
11097-69-1	Aroclor-1254	u	46	4
11096-82-5	Aroclor-1260	840 D	46	4

u: Below Method Detection Limit

D: Result quantitated from a 1:2 dilution analyzed 11/6/00.

Laboratory Comments: Result from second column: 1050 ug/kg.

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/kg)
Decachlorobiphenyl	97	60-150	20
Tetrachloro-meta-xylene	130	52-143	20

Method Blank : WG6631-1
PCB Matrix Spike : WG6631-3
PCB LCS : WG6631-2
Laboratory Duplicate : WG6631-5
PCB Matrix Spike Duplicate : WG6631-4

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PCBs Sample Report

Project Name:	Former Plumbrook Ordnance Work	Date Sampled:	09/27/00	Matrix:	Soil
Project Number:	6008	Date Received:	09/28/00	Units:	ug/kg
Client Sample ID:	AB0453	Date Reported:	11/14/00	Sample Amount:	25.0 g
CQAB Sample ID :	M000997-006			% Solids:	86.9

Analyst:	Asuncion	Date Extracted:	10/05/00	Dilution Factor:	10
Method:	SW-846 3540B/8082	Date Analyzed :	11/01/00	Batch ID:	WG6631

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	230	4
1104-28-2	Aroclor-1221	u	230	4
11141-16-5	Aroclor-1232	u	230	4
53469-21-9	Aroclor-1242	u	230	4
12672-29-6	Aroclor-1248	u	230	4
11097-69-1	Aroclor-1254	u	230	4
11096-82-5	Aroclor-1260	1220 D	230	4

u: Below Method Detection Limit

D: Result quantitated from a 1:10 dilution analyzed 11/6/00.

Laboratory Comments: Result from second column: Aroclor-1260 @ 1440 ug/kg.

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/kg)
Decachlorobiphenyl	94	60-150	20
Tetrachloro-meta-xylene	95	52-143	20

Method Blank : WG6631-1
PCB Matrix Spike : WG6631-3
PCB LCS : WG6631-2
Laboratory Duplicate : WG6631-5
PCB Matrix Spike Duplicate : WG6631-4

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PCBs Method Blank Report

Method Blank Sample ID: WG6631-1 | Date Reported: 11/14/00 | Matrix: Soil | Units: ug/kg

Analyst: Asuncion | Date Extracted: 10/05/00 | Dilution Factor: 1
Method: SW-846 3540B/8082 | Date Analyzed: 10/31/00 | Batch ID: WG6631

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	20	4
1104-28-2	Aroclor-1221	u	20	4
11141-16-5	Aroclor-1232	u	20	4
53469-21-9	Aroclor-1242	u	20	4
12672-29-6	Aroclor-1248	u	20	4
11097-69-1	Aroclor-1254	u	20	4
11096-82-5	Aroclor-1260	u	20	4

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/kg)
Decachlorobiphenyl	85	60-150	20
Tetrachloro-meta-xylene	68	52-143	20

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PCBs (Laboratory Matrix Duplicate) Report

LD Sample ID: WG6631-5
Sample ID: M000982-002

Date Reported: 11/14/00

Matrix: Soil
Units: ug/kg
Sample Amount: 25.0 g
% Solids: 94.9

Analyst: Asuncion
Method: SW-846 3540B/8082

Date Extracted: 10/05/00
Date Analyzed: 10/31/00

Batch ID: WG6631

CAS Number	Target Analyte	Sample Result	LD Result	Laboratory Reporting Limit	Method Detection Limit	RPD	QC Limits
12674-11-2	Aroclor-1016	u	u	21	4	NC	35
1104-28-2	Aroclor-1221	u	u	21	4	NC	35
11141-16-5	Aroclor-1232	u	u	21	4	NC	35
53469-21-9	Aroclor-1242	u	u	21	4	NC	35
12672-29-6	Aroclor-1248	u	u	21	4	NC	35
11097-69-1	Aroclor-1254	u	u	21	4	NC	35
11096-82-5	Aroclor-1260	589	521	21	4	12	51

u: Below Detection Limit
NC: Not Calculable

Laboratory Comments:

RPD = (|Sample Result - LD Result| x 100)/((Sample Result + LD Result)/2)

Quality Control

Surrogate Standard	Recovery (%) Sample	LD	Acceptable	Spike (ug/kg)	RPD	QC Limits
Decachlorobiphenyl	89	88	60-150	20	1	54
Tetrachloro-meta-xylene	75	75	52-143	20	0	54

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PCBs(Matrix Spike/Matrix Spike Duplicate)

MS Pest Sample ID: N/A
MSD Pest Sample ID: N/A
Sample ID: M000982-002

MS PCB Sample ID: WG6631-3
MSD PCB Sample ID: WG6631-4
Date Reported: 11/14/00

Matrix: Soil
Units: ug/kg
% Solids: 94.9

Analyst: Asuncion
Method: SW-846 3540B/8082

Date Extracted: 10/05/00
Date Analyzed: 10/31/00

Batch ID: WG6631

CAS Number	Target Analyte	Sample Result	Spike Added	Conc MS	%Rec MS	QC Limits	Conc MSD	%Rec MSD	RPD	RPD Limits
12674-11-2	Aroclor-1016	u	210	176	84	60-141	193	92	9	35
1104-28-2	Aroclor-1221	u	NS	u	NC	60-141	u	NC	NC	35
11141-16-5	Aroclor-1232	u	NS	u	NC	60-141	u	NC	NC	35
53469-21-9	Aroclor-1242	u	NS	u	NC	60-141	u	NC	NC	35
12672-29-6	Aroclor-1248	u	NS	u	NC	60-141	u	NC	NC	35
11097-69-1	Aroclor-1254	u	NS	u	NC	60-141	u	NC	NC	35
11096-82-5	Aroclor-1260	589	210	731	68	41-149	717	61	11	51

u: Below Method Detection Limit
NC: Not Calculable

NS: Compound not spiked.

Laboratory Comments:

RPD = (|MS Result - MSD Result| x 100)/((MS Result + MSD Result)/2)
Normal sample amount is 25 g.

Quality Control

Surrogate Standard	Recovery (%) MS	MSD	Acceptable	Spike (ug/kg)	RPD	QC Limits
Decachlorobiphenyl	88	93	60-150	20	5	54
Tetrachloro-meta-xylene	70	75	52-143	20	7	54

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PCBs (Laboratory Control Sample)

LCS ID: WG6631-2 | Date Reported: 11/14/00 | Matrix: Soil
Units: ug/kg

Analyst: Asuncion
Method: SW-846 3510C/8082

Date Extracted: 10/05/00
Date Analyzed: 10/31/00
Batch ID: WG6631

CQAB PCB Code: PCBS-006

CAS Number	Compound	Result	True Value	Method Detection Limit	Lab Reporting Limit	% Rec	Acceptance Limits (%)
12674-11-2	Aroclor-1016	177	200	4	20	89	60-141
1104-28-2	Aroclor-1221	u	NS	4	20	NC	60-141
11141-16-5	Aroclor-1232	u	NS	4	20	NC	60-141
53469-21-9	Aroclor-1242	u	NS	4	20	NC	60-141
12672-29-6	Aroclor-1248	u	NS	4	20	NC	60-141
11097-69-1	Aroclor-1254	u	NS	4	20	NC	60-141
11096-82-5	Aroclor-1260	187	200	4	20	94	41-149

u: Below Method Detection Limit
NC: Not Calculable

NS: Compound not spiked.
Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/kg)
Decachlorobiphenyl	89	60-150	20.
Tetrachloro-meta-xylene	77	52-143	20.

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PCBs Sample Report

Project Name:	Former Plumbrook Ordnance Work	Date Sampled:	09/27/00	Matrix:	Water
Project Number:	6008	Date Received:	09/28/00	Units:	ug/L
Client Sample ID:	AB3012	Date Reported:	11/14/00	Sample Amount:	880 mL
CQAB Sample ID :	M000997-003				

Analyst:	Asuncion	Date Extracted:	11/3/00	Dilution Factor:	1
Method:	SW-846 3510C/8082	Date Analyzed :	11/06/00	Batch ID:	WG6592

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	0.57	0.1
1104-28-2	Aroclor-1221	u	0.57	0.1
11141-16-5	Aroclor-1232	u	0.57	0.1
53469-21-9	Aroclor-1242	u	0.57	0.1
12672-29-6	Aroclor-1248	u	0.57	0.1
11097-69-1	Aroclor-1254	u	0.57	0.1
11096-82-5	Aroclor-1260	u	0.57	0.1

u: Below Method Detection Limit

Laboratory Comments: See attached narrative.

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Decachlorobiphenyl	69	60-150	0.5
Tetrachloro-meta-xylene	72	44-126	0.5

Method Blank : WG6592-1
PCB Matrix Spike : WG6592-4
PCB LCS : WG6592-2
Laboratory Duplicate : WG6592-3
PCB Matrix Spike Duplicate :

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NARRATIVE FOR WG6592 - PCB analysis

Sample M000997-003 (Client Sample Identifier AB3012) was originally extracted on 28 September 2000, with analysis on 10 October 2000. These results showed Aroclor-1260 present at 6.5 ug/L. Using this value, the calculated Matrix Spike recovery would be approximately 0%. Corrective action was initiated by re-extracting this sample (an unopened backup bottle assigned for explosives analysis) on 03 November 2000, and analyzing this re-extracted extract on 06 November 2000. The results of the second analysis showed PCBs to be not present in sample AB3012. The results of the second analysis are reported. It appears the original sample extract was contaminated by the laboratory during sample preparation.

David E. Splichal

David E. Splichal,
CQAB Laboratory, Organic Section Chief

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PCBs Method Blank Report

Method Blank Sample ID: WG6592-1 | Date Reported: 11/14/00 | Matrix: Water | Units: ug/L

Analyst: Asuncion | Date Extracted: 11/3/00 | Dilution Factor: 1
Method: SW-846 3510C/8082 | Date Analyzed: 11/06/00 | Batch ID: WG6592

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
12674-11-2	Aroclor-1016	u	0.50	0.1
1104-28-2	Aroclor-1221	u	0.50	0.1
11141-16-5	Aroclor-1232	u	0.50	0.1
53469-21-9	Aroclor-1242	u	0.50	0.1
12672-29-6	Aroclor-1248	u	0.50	0.1
11097-69-1	Aroclor-1254	u	0.50	0.1
11096-82-5	Aroclor-1260	u	0.50	0.1

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Decachlorobiphenyl	80	60-150	0.5
Tetrachloro-meta-xylene	52	44-126	0.5

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PCBs (Laboratory Control Sample)

LCS ID: WG6592-2 | Date Reported: 11/14/00 | Matrix: Water
Units: ug/L

Analyst: Asuncion
Method: SW-846 3510C/8082

Date Extracted: 11/3/00
Date Analyzed: 11/06/00
Batch ID: WG6592

CQAB PCB Code: PCBL-006

CAS Number	Compound	Result	True Value	Method Detection Limit	Lab Reporting Limit	% Rec	Acceptance Limits (%)
12674-11-2	Aroclor-1016	3.5	5.0	0.1	0.50	69	60-141
1104-28-2	Aroclor-1221	u	NS	0.1	0.50	NC	60-141
11141-16-5	Aroclor-1232	u	NS	0.1	0.50	NC	60-141
53469-21-9	Aroclor-1242	u	NS	0.1	0.50	NC	60-141
12672-29-6	Aroclor-1248	u	NS	0.1	0.50	NC	60-141
11097-69-1	Aroclor-1254	u	NS	0.1	0.50	NC	60-141
11096-82-5	Aroclor-1260	4.0	5.0	0.1	0.50	81	60-125

u: Below Method Detection Limit
NC: Not Calculable

NS: Compound not spiked.
Laboratory Comments:
Due to insufficient sample, a matrix spike and matrix spike duplicate were not extracted with this batch.

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Decachlorobiphenyl	76	60-150	0.50
Tetrachloro-meta-xylene	53	44-126	0.50

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Explosives Sample Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Sampled:	09/18/00	Matrix:	Soil
Client Sample ID:	AB1017	Date Received:	09/20/00	Units:	mg/kg
Sample ID:	M000975-001	Date Extracted:	09/26/00	Dilution Factor:	1
Method:	SW-846 Method 8330	Date Dried:	09/21/00		
Batch ID:	WG6575	Date Analyzed:	10/03/00		
Analyst:	Schnitker	Date Reported:	12/08/00		

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	2.2	0.2
121-82-4	RDX	u	1.0	0.6
99-35-4	1,3,5-Trinitrobenzene	u	0.25	0.02
99-65-0	1,3-Dinitrobenzene	u	0.25	0.1
479-45-8	Tetryl	u	0.65	0.2
618-87-1	3,5-Dinitroaniline	u	0.65	0.08
98-95-3	Nitrobenzene	u	0.26	0.03
118-96-7	2,4,6-Trinitrotoluene	0.1 JC	0.25	0.1
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.26	0.09
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.25	0.1
606-20-2	2,6-Dinitrotoluene	u	0.26	0.02
121-14-2	2,4-Dinitrotoluene	u	0.25	0.04
88-72-2	2-Nitrotoluene	u	0.25	0.02
99-99-0	4-Nitrotoluene	u	0.25	0.04
99-08-1	3-Nitrotoluene	u	0.25	0.03

u: Below Method Detection Limit
J: Estimated concentration above Method Detection Limit but below Lab Reporting Limit.
C: Result not confirmed due to matrix interference.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (mg/kg)
3,4-Dinitrotoluene	80	71-122	1.25

Matrix Spike : WG6575-4
Laboratory Duplicate : WG6575-3
Laboratory Control Sample : WG6575-2
Matrix Spike Duplicate : WG6575-5
Method Blank : WG6575-1

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Explosives Sample Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Sampled:	09/19/00	Matrix:	Soil
Client Sample ID:	AB1019	Date Received:	09/21/00	Units:	mg/kg
Sample ID:	M000975-004	Date Extracted:	09/26/00	Dilution Factor:	1
Method:	SW-846 Method 8330	Date Dried:	09/21/00		
Batch ID:	WG6575	Date Analyzed:	10/03/00		
Analyst:	Schnitker	Date Reported:	12/08/00		

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	2.2	0.2
121-82-4	RDX	u	1.0	0.6
99-35-4	1,3,5-Trinitrobenzene	u	0.25	0.02
99-65-0	1,3-Dinitrobenzene	u	0.25	0.1
479-45-8	Tetryl	u	0.65	0.2
618-87-1	3,5-Dinitroaniline	u	0.65	0.08
98-95-3	Nitrobenzene	u	0.26	0.03
118-96-7	2,4,6-Trinitrotoluene	0.54	0.25	0.1
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.26	0.09
355-72-78-2	2-Amino-4,6-Dinitrotoluene	0.38 C	0.25	0.1
606-20-2	2,6-Dinitrotoluene	u	0.26	0.02
121-14-2	2,4-Dinitrotoluene	0.07 J	0.25	0.04
88-72-2	2-Nitrotoluene	u	0.25	0.02
99-99-0	4-Nitrotoluene	u	0.25	0.04
99-08-1	3-Nitrotoluene	u	0.25	0.03

u: Below Method Detection Limit
J: Estimated concentration above Method Detection Limit but below Lab Reporting Limit.
C: Result not confirmed due to matrix interference.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (mg/kg)
3,4-Dinitrotoluene	85	71-122	1.25

Matrix Spike : WG6575-4
Laboratory Duplicate : WG6575-3
Laboratory Control Sample : WG6575-2
Matrix Spike Duplicate : WG6575-5
Method Blank : WG6575-1

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Narrative for WG6575 - Explosives Analysis
Project name: Former Plumbrook Ordnance Work
Project number: 6008

1. The first continuing calibration standard (CCV5) contained three analytes slightly outside, and one significantly outside, the acceptance criteria of 15% difference from the initial calibration curve. Percent difference values for the four analytes are summarized below:

RDX	at -17.6%
Tetryl	at -16.0%
3,5-Dinitroaniline	at +35.8%
4-nitrotoluene	at -15.4%

The average percent difference for the 16 calibrated analytes is 12.8%, which is within the 15% criteria.

2. The end continuing calibration standard (CCV6) contained three analytes slightly outside, and one significantly outside, the acceptance criteria of 15% difference from the initial calibration curve. Percent difference values for the four analytes are summarized below:

Tetryl	at -18.9%
3,5-Dinitroaniline	at +37.2%
2-nitrotoluene	at -16.2%
3-nitrotoluene	at -15.4%

The average percent recovery for the 16 calibrated analytes is 13.1%, which is within the 15% criteria.

3. The impact on data quality/data useability from the failed CCV's is insignificant. Recoveries for the above mentioned analytes in the matrix spike, matrix spike duplicate and laboratory control samples are within acceptable limits.

David E. Splichal

David E. Splichal,
Organic Section Team Leader

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Explosives (Method Blank) Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Extracted:	09/26/00	Matrix:	Soil
MB Sample ID:	WG6575-1	Date Analyzed:	10/03/00	Units:	mg/kg
Method:	SW-846 Method 8330			Dilution Factor:	1
Batch ID:	WG6575	Date Reported:	12/08/00		
Analyst:	Schnitker				

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	2.2	0.2
121-82-4	RDX	u	1.0	0.6
99-35-4	1,3,5-Trinitrobenzene	u	0.25	0.02
99-65-0	1,3-Dinitrobenzene	u	0.25	0.1
479-45-8	Tetryl	u	0.65	0.2
618-87-1	3,5-Dinitroaniline	u	0.65	0.08
98-95-3	Nitrobenzene	u	0.26	0.03
118-96-7	2,4,6-Trinitrotoluene	u	0.25	0.1
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.26	0.09
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.25	0.1
606-20-2	2,6-Dinitrotoluene	u	0.26	0.02
121-14-2	2,4-Dinitrotoluene	u	0.25	0.04
88-72-2	2-Nitrotoluene	u	0.25	0.02
99-99-0	4-Nitrotoluene	u	0.25	0.04
99-08-1	3-Nitrotoluene	u	0.25	0.03

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (mg/kg)
3,4-Dinitrotoluene	79	71-122	1.25

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DEPARTMENT OF THE ARMY
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Explosives (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Work					
Project Number:	6008	Date Extracted:	09/26/00	Sample ID:	Sample	LD
Client Sample ID:	Batch Specific	Date Analyzed:	10/03/00	MRL No.:	M000949-002	WG6575-3
Method:	SW-846 Method 8330	Date Dried:	09/14/00			
Analyst:	Schnitker	Date Reported:	12/08/00	Matrix:	Soil	
Batch ID:	WG6575			Units:	mg/kg	

CAS Number	Target Analyte	Sample Result	LD Result	Laboratory Reporting Limit	Method Detection Limit	RPD	QC Limits
2691-41-0	HMX	u	u	2.2	0.2	NC	25
121-82-4	RDX	u	u	1.0	0.6	NC	25
99-35-4	1,3,5-Trinitrobenzene	u	u	0.25	0.02	NC	25
99-65-0	1,3-Dinitrobenzene	u	u	0.25	0.1	NC	25
479-45-8	Tetryl	u	u	0.65	0.2	NC	25
618-87-1	3,5-Dinitroaniline	u	u	0.65	0.08	NC	25
98-95-3	Nitrobenzene	u	u	0.26	0.03	NC	25
118-96-7	2,4,6-Trinitrotoluene	u	u	0.25	0.1	NC	25
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	u	0.26	0.09	NC	25
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	u	0.25	0.1	NC	25
606-20-2	2,6-Dinitrotoluene	u	u	0.26	0.02	NC	25
121-14-2	2,4-Dinitrotoluene	u	u	0.25	0.04	NC	25
88-72-2	2-Nitrotoluene	u	u	0.25	0.02	NC	25
99-99-0	4-Nitrotoluene	u	u	0.25	0.04	NC	25
99-08-1	3-Nitrotoluene	u	u	0.25	0.03	NC	25

u: Below Detection Limit

NC: Not Calculable
Laboratory Comments:
RPD = (|Sample Result - LD Result| x 100)/((Sample Result + LD Result)/2)

Quality Control

Surrogate Standard	Recovery (%) Sample	LD	Acceptable	Spike (mg/kg)	RPD	QC Limits
3,4-Dinitrotoluene	87	83	71-122	1.25	5	25

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Explosives (Matrix Spike, Matrix Spike Duplicate) Report

Project Name:	Former Plumbrook Ordnance Work					
Project Number:	6008	Date Extracted:	09/26/00	Sample ID:	MS	MSD
Client Sample ID: WG6575-5	Batch Specific	Date Analyzed:	10/03/00	MRL No.:	WG6575-4	
MRL Sample ID:	M000949-002	Date Dried:	09/14/00			
Method:	SW-846 Method 8330	Date Reported:	12/08/00			
Batch ID:	WG6575	Matrix:	Soil			
Analyst:	Schnitker	Units:	mg/kg			

CAS Number	Target Analyte	Sample Result	Spike Added	Conc MS	% Rec MS	QC Limits	Conc MSD	%Rec MSD	RPD	QC Limits
2691-41-0	HMX	u	2.50	2.29	92	69-116	2.26	91	1	25
121-82-4	RDX	u	2.50	2.17	87	64-107	2.16	86	0	25
99-35-4	1,3,5-Trinitrobenzene	u	1.25	0.97	78	78-116	0.95	76 *	2	25
99-65-0	1,3-Dinitrobenzene	u	1.25	1.04	83	73-113	1.04	83	0	25
479-45-8	Tetryl	u	2.50	1.39	56	46-151	1.36	54	2	25
98-95-3	Nitrobenzene	u	1.25	1.16	93	75-111	1.16	92	1	25
118-96-7	2,4,6-Trinitrotoluene	u	1.25	0.98	78	61-106	0.97	77	1	25
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	1.25	1.23	99	63-106	1.23	98	0	25
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	1.25	1.04	83	70-109	1.03	83	1	25
606-20-2	2,6-Dinitrotoluene	u	1.25	1.02	81	70-113	1.0	80	2	25
121-14-2	2,4-Dinitrotoluene	u	1.25	1.04	83	73-113	1.03	82	1	25
88-72-2	2-Nitrotoluene	u	1.25	1.00	80	74-113	1.02	82	2	25
99-99-0	4-Nitrotoluene	u	1.25	0.99	80	75-112	0.98	78	2	25
99-08-1	3-Nitrotoluene	u	1.25	0.99	79	67-114	1.02	81	3	25

u: Below Method Detection Limit

*: Indicates the value is outside acceptance limits.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%) MS	MSD	Acceptable	Spike (mg/kg)	RPD	QC Limits
3,4-Dinitrotoluene	80	80	71-122	1.25	0	25

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Explosives (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Extracted:	09/26/00	Matrix:	Soil
LCS Sample ID:	WG6575-2	Date Analyzed:	10/03/00	Units:	mg/kg
Method:	SW-846 Method 8330			Dilution Factor:	1
Batch ID:	WG6575	Date Reported:	12/08/00		
Analyst:	Schnitker				

CAS Number	Target Analyte	Spike Added	Conc LCS	% Rec LCS	QC Limits
2691-41-0	HMX	2.50	2.21	88	69-116
121-82-4	RDX	2.50	1.93	77	64-107
99-35-4	1,3,5-Trinitrobenzene	1.25	1.03	83	78-116
99-65-0	1,3-Dinitrobenzene	1.25	1.04	83	73-113
479-45-8	Tetryl	2.50	1.92	77	46-151
98-95-3	Nitrobenzene	1.25	1.16	93	75-111
118-96-7	2,4,6-Trinitrotoluene	1.25	0.96	77	61-106
1946-51-0	4-Amino-2,6-Dinitrotoluene	1.25	1.10	88	63-106
355-72-78-2	2-Amino-4,6-Dinitrotoluene	1.25	1.02	82	70-109
606-20-2	2,6-Dinitrotoluene	1.25	1.02	81	70-113
121-14-2	2,4-Dinitrotoluene	1.25	1.03	83	73-113
88-72-2	2-Nitrotoluene	1.25	1.0	80	74-113
99-99-0	4-Nitrotoluene	1.25	1.01	81	75-112
99-08-1	3-Nitrotoluene	1.25	1.00	80	67-114

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (mg/kg)
3,4-Dinitrotoluene	79	71-122	1.25

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Explosives Sample Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Sampled:	09/18/00	Matrix:	Water
Client Sample ID:	AB2017	Date Received:	09/20/00	Units:	ug/L
Sample ID:	M000975-003	Date Extracted:	09/22/00	Dilution Factor:	1
Method:	SW-846 Method 8330				
Batch ID:	WG6556	Date Analyzed:	10/25/00		
Analyst:	Schnitker	Date Reported:	12/12/00		

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	1.6	0.2
121-82-4	RDX	u	1.3	0.3
99-35-4	1,3,5-Trinitrobenzene	u	0.35	0.06
99-65-0	1,3-Dinitrobenzene	u	0.46	0.08
479-45-8	Tetryl	u	0.82	0.2
618-87-1	3,5-Dinitroaniline	u	0.44	0.2
98-95-3	Nitrobenzene	u	0.56	0.07
118-96-7	2,4,6-Trinitrotoluene	u	0.34	0.07
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.19	0.06
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.21	0.03
606-20-2	2,6-Dinitrotoluene	u	0.15	0.08
121-14-2	2,4-Dinitrotoluene	u	0.24	0.02
88-72-2	2-Nitrotoluene	u	0.18	0.08
99-99-0	4-Nitrotoluene	u	0.27	0.08
99-08-1	3-Nitrotoluene	u	0.26	0.04

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Benzaldehyde	70	44-98	0.65

Matrix Spike : WG6556-4
Laboratory Duplicate : WG6556-3
Laboratory Control Sample : WG6556-2
Matrix Spike Duplicate : N/A
Method Blank : WG6556-1

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Explosives Sample Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Sampled:	09/19/00	Matrix:	Water
Client Sample ID:	AB2019	Date Received:	09/21/00	Units:	ug/L
Sample ID:	M000975-006	Date Extracted:	09/22/00	Dilution Factor:	1
Method:	SW-846 Method 8330				
Batch ID:	WG6556	Date Analyzed:	10/25/00		
Analyst:	Schnitker	Date Reported:	12/12/00		

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	1.6	0.2
121-82-4	RDX	u	1.3	0.3
99-35-4	1,3,5-Trinitrobenzene	u	0.35	0.06
99-65-0	1,3-Dinitrobenzene	u	0.46	0.08
479-45-8	Tetryl	u	0.82	0.2
618-87-1	3,5-Dinitroaniline	u	0.44	0.2
98-95-3	Nitrobenzene	u	0.56	0.07
118-96-7	2,4,6-Trinitrotoluene	u	0.34	0.07
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.19	0.06
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.21	0.03
606-20-2	2,6-Dinitrotoluene	u	0.15	0.08
121-14-2	2,4-Dinitrotoluene	u	0.24	0.02
88-72-2	2-Nitrotoluene	u	0.18	0.08
99-99-0	4-Nitrotoluene	u	0.27	0.08
99-08-1	3-Nitrotoluene	u	0.26	0.04

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Benzaldehyde	77	44-98	0.65

Matrix Spike : WG6556-4
Laboratory Duplicate : WG6556-3
Laboratory Control Sample : WG6556-2
Matrix Spike Duplicate : N/A
Method Blank : WG6556-1

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Explosives (Method Blank) Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Extracted:	09/22/00	Matrix:	Water
MB Sample ID:	WG6556-1	Date Analyzed:	10/25/00	Units:	ug/L
Method:	SW-846 Method 8330			Dilution Factor:	1
Batch ID:	WG6556	Date Reported:	12/12/00		
Analyst:	Schnitker				

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	1.6	0.2
121-82-4	RDX	u	1.3	0.3
99-35-4	1,3,5-Trinitrobenzene	u	0.35	0.06
99-65-0	1,3-Dinitrobenzene	u	0.46	0.08
479-45-8	Tetryl	u	0.82	0.2
618-87-1	3,5-Dinitroaniline	u	0.44	0.2
98-95-3	Nitrobenzene	u	0.56	0.07
118-96-7	2,4,6-Trinitrotoluene	u	0.34	0.07
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.19	0.06
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.21	0.03
606-20-2	2,6-Dinitrotoluene	u	0.15	0.08
121-14-2	2,4-Dinitrotoluene	u	0.24	0.02
88-72-2	2-Nitrotoluene	u	0.18	0.08
99-99-0	4-Nitrotoluene	u	0.27	0.08
99-08-1	3-Nitrotoluene	u	0.26	0.04

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Benzaldehyde	62	44-98	0.65

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Explosives (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Work					
Project Number:	6008	Date Extracted:	09/22/00	Sample ID:	Sample	LD
Client Sample ID:	AB2017	Date Analyzed:	10/25/00	MRL No.:	M000975-003	WG6556-3
Method:	SW-846 Method 8330					
Analyst:	Schnitker	Date Reported:	12/12/00	Matrix:	Water	
Batch ID:	WG6556			Units:	ug/L	

CAS Number	Target Analyte	Sample Result	LD Result	Laboratory Reporting Limit	Method Detection Limit	RPD	QC Limits
2691-41-0	HMX	u	u	1.6	0.2	NC	25
121-82-4	RDX	u	u	1.3	0.3	NC	25
99-35-4	1,3,5-Trinitrobenzene	u	u	0.35	0.06	NC	25
99-65-0	1,3-Dinitrobenzene	u	u	0.46	0.08	NC	25
479-45-8	Tetryl	u	u	0.82	0.2	NC	25
618-87-1	3,5-Dinitroaniline	u	u	0.44	0.2	NC	25
98-95-3	Nitrobenzene	u	u	0.56	0.07	NC	25
118-96-7	2,4,6-Trinitrotoluene	u	u	0.34	0.07	NC	25
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	u	0.19	0.06	NC	25
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	u	0.21	0.03	NC	25
606-20-2	2,6-Dinitrotoluene	u	u	0.15	0.08	NC	25
121-14-2	2,4-Dinitrotoluene	u	u	0.24	0.02	NC	25
88-72-2	2-Nitrotoluene	u	u	0.18	0.08	NC	25
99-99-0	4-Nitrotoluene	u	u	0.27	0.08	NC	25
99-08-1	3-Nitrotoluene	u	0.45 C	0.26	0.04	NC	25

u: Below Detection Limit

C: Result not confirmed due to matrix interference.
NC: Not Calculable
Laboratory Comments:
RPD = (|Sample Result - LD Result| x 100)/((Sample Result + LD Result)/2)

Quality Control

Surrogate Standard	Recovery (%) Sample	LD	Acceptable	Spike (ug/L)	RPD	QC Limits
Benzaldehyde	70	71	44-98	0.65	2	25

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Explosives (Matrix Spike, Matrix Spike Duplicate) Report

Project Name:	Former Plumbrook Ordnance Work					
Project Number:	6008	Date Extracted:	09/22/00	Sample ID:	MS	MSD
Client Sample ID:	AB2019	Date Analyzed:	10/25/00	MRL No.:	WG6556-4	N/A
MRL Sample ID:	M000975-006					
Method:	SW-846 Method 8330	Date Reported:	12/12/00			
Batch ID:	WG6556	Matrix:	Water			
Analyst:	Schnicker	Units:	ug/L			

CAS Number	Target Analyte	Sample Result	Spike Added	Conc MS	% Rec MS	QC Limits	Conc MSD	%Rec MSD	RPD	QC Limits
2691-41-0	HMX	u	1.30	1.44 J	110	39-126	-	-	-	25
121-82-4	RDX	u	1.30	1.14 J	88	35-119	-	-	-	25
99-35-4	1,3,5-Trinitrobenzene	u	0.65	0.59	91	49-128	-	-	-	25
99-65-0	1,3-Dinitrobenzene	u	0.65	0.56	86	46-115	-	-	-	25
479-45-8	Tetryl	u	1.30	1.03	79	14-120	-	-	-	25
98-95-3	Nitrobenzene	u	0.65	0.61	95	44-112	-	-	-	25
118-96-7	2,4,6-Trinitrotoluene	u	0.65	0.55	85	55-112	-	-	-	25
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.65	0.65	99	49-151	-	-	-	25
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.65	0.56	86	55-113	-	-	-	25
606-20-2	2,6-Dinitrotoluene	u	0.65	0.59	91	60-111	-	-	-	25
121-14-2	2,4-Dinitrotoluene	u	0.65	0.57	88	61-113	-	-	-	25
88-72-2	2-Nitrotoluene	u	0.65	0.54	83	60-113	-	-	-	25
99-99-0	4-Nitrotoluene	u	0.65	0.57	88	62-117	-	-	-	25
99-08-1	3-Nitrotoluene	u	0.65	0.60	93	41-124	-	-	-	25

u: Below Method Detection Limit
J: Estimated concentration above Method Detection Limit but below Laboratory Reporting Limit.

Laboratory Comments: Due to insufficient sample volume, a matrix spike duplicate could not be extracted with this batch.

Quality Control

Surrogate Standard	Recovery (%) MS	MSD	Acceptable	Spike (ug/L)	RPD	QC Limits
Benzaldehyde	70	-	44-98	0.65	-	25

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Explosives (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Extracted:	09/22/00	Matrix:	Water
LCS Sample ID:	WG6556-2	Date Analyzed:	10/25/00	Units:	ug/L
Method:	SW-846 Method 8330			Dilution Factor:	1
Batch ID:	WG6556	Date Reported:	12/12/00		
Analyst:	Schnitker				

CAS Number	Target Analyte	Spike Added	Conc LCS	% Rec LCS	QC Limits
2691-41-0	HMX	1.30	1 J	95	39-126
121-82-4	RDX	1.30	1 J	87	35-119
99-35-4	1,3,5-Trinitrobenzene	0.65	0.56	85	49-128
99-65-0	1,3-Dinitrobenzene	0.65	0.56	86	46-115
479-45-8	Tetryl	1.30	0.86	67	14-120
98-95-3	Nitrobenzene	0.65	0.62	96	44-112
118-96-7	2,4,6-Trinitrotoluene	0.65	0.59	91	55-112
1946-51-0	4-Amino-2,6-Dinitrotoluene	0.65	0.68	104	49-151
355-72-78-2	2-Amino-4,6-Dinitrotoluene	0.65	0.60	93	55-113
606-20-2	2,6-Dinitrotoluene	0.65	0.61	94	60-111
121-14-2	2,4-Dinitrotoluene	0.65	0.60	92	61-113
88-72-2	2-Nitrotoluene	0.65	0.53	82	60-113
99-99-0	4-Nitrotoluene	0.65	0.53	82	62-117
99-08-1	3-Nitrotoluene	0.65	0.59	91	41-124

J: Estimated concentration above Method Detection Limit but below Laboratory Reporting Limit.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Benzaldehyde	73	44-98	0.65

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DEPARTMENT OF THE ARMY
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Explosives Sample Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Sampled:	09/26/00	Matrix:	Water
Client Sample ID:	AA3012	Date Received:	09/27/00	Units:	ug/L
Sample ID:	M000992-003	Date Extracted:	10/02/00	Dilution Factor:	1
Method:	SW-846 Method 8330				
Batch ID:	WG6604	Date Analyzed:	11/28/00		
Analyst:	Schnitker	Date Reported:	12/21/00		

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	1.6	0.2
121-82-4	RDX	10 C	1.3	0.3
99-35-4	1,3,5-Trinitrobenzene	4.1 C	0.35	0.06
99-65-0	1,3-Dinitrobenzene	3.9 C	0.46	0.08
479-45-8	Tetryl	u	0.82	0.2
618-87-1	3,5-Dinitroaniline	u	0.44	0.2
98-95-3	Nitrobenzene	18 C	0.56	0.07
118-96-7	2,4,6-Trinitrotoluene	110 C	0.34	0.07
1946-51-0	4-Amino-2,6-Dinitrotoluene	1500 CD	76	0.06
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.21	0.03
606-20-2	2,6-Dinitrotoluene	6100 D	60	0.08
121-14-2	2,4-Dinitrotoluene	6800 D	96	0.02
88-72-2	2-Nitrotoluene	140 C	0.18	0.08
99-99-0	4-Nitrotoluene	62 C	0.27	0.08
99-08-1	3-Nitrotoluene	25 C	0.26	0.04

u: Below Method Detection Limit.
D: Result from a 400:1 dilution.
C: Result not confirmed due to matrix interference.
*: Indicates the value is outside control limits. The surrogate was diluted to below detection limits.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Benzaldehyde	0 *	44-98	0.65

Matrix Spike : WG6604-4
Laboratory Duplicate : WG6604-3
Laboratory Control Sample : WG6604-2
Matrix Spike Duplicate : N/A
Method Blank : WG6604-1

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Explosives Sample Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Sampled:	09/27/00	Matrix:	Water
Client Sample ID:	AB3012	Date Received:	09/28/00	Units:	ug/L
Sample ID:	M000997-003	Date Extracted:	10/02/00	Dilution Factor:	1
Method:	SW-846 Method 8330				
Batch ID:	WG6604	Date Analyzed:	11/28/00		
Analyst:	Schnitker	Date Reported:	12/21/00		

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	1.6	0.2
121-82-4	RDX	u	1.3	0.3
99-35-4	1,3,5-Trinitrobenzene	0.78 C	0.35	0.06
99-65-0	1,3-Dinitrobenzene	1.0 C	0.46	0.08
479-45-8	Tetryl	u	0.82	0.2
618-87-1	3,5-Dinitroaniline	u	0.44	0.2
98-95-3	Nitrobenzene	u	0.56	0.07
118-96-7	2,4,6-Trinitrotoluene	4.0	0.34	0.07
1946-51-0	4-Amino-2,6-Dinitrotoluene	24 C	0.19	0.06
355-72-78-2	2-Amino-4,6-Dinitrotoluene	15 C	0.21	0.03
606-20-2	2,6-Dinitrotoluene	3.8	0.15	0.08
121-14-2	2,4-Dinitrotoluene	7.0	0.24	0.02
88-72-2	2-Nitrotoluene	3.3 C	0.18	0.08
99-99-0	4-Nitrotoluene	0.65 C	0.27	0.08
99-08-1	3-Nitrotoluene	0.57 C	0.26	0.04

u: Below Method Detection Limit

C: Result not confirmed due to matrix interference.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Benzaldehyde	66	44-98	0.65

Matrix Spike : WG6604-4
Laboratory Duplicate : WG6604-3
Laboratory Control Sample : WG6604-2
Matrix Spike Duplicate : N/A
Method Blank : WG6604-1

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Narrative for WG6604 - Explosives Analysis
Project name: Former Plumbrook Ordnance Works
Project number: 6008

1. The first continuing calibration standard (CCV1) contained two analytes significantly outside the acceptance criteria of 15% difference from the initial calibration curve. Percent difference values for the two analytes are summarized below:

HMX	at - 21.5%
4-Amino-2,6-dinitrotoluene	at +27.6%

The average percent difference for the 15 calibrated analytes is 9.2%, which is within the 15% criteria.

2. The ending continuing calibration standard (CCV2) contained one analyte slightly outside, and two significantly outside, the acceptance criteria of 15% difference from the initial calibration curve. Percent difference values for the three analytes are summarized below:

HMX	at - 31.2%
4-Amino-2,6-dinitrotoluene	at +32.0%
2,4-Dinitrotoluene	at +15.6%

The average percent difference for the 15 calibrated analytes is 10.6%, which is within the 15% criteria.

3. The impact on data quality/data useability from the failed CCV's is insignificant for the analytes that calibrated high. For HMX, there is a potential for false negatives close to the method detection limit.

4. The number of recoveries outside acceptance limits for the matrix spike sample is attributable to the low spike amount used when compared to the amount found in the field sample. All laboratory control sample recoveries are within acceptance limits.

5. The samples were analyzed 58-days past extraction (method limit of 40-days). Surrogate recoveries for all samples were within acceptance limits (except in those cases where samples were diluted due to high target analytes present), as were recoveries for the target analytes in the laboratory control sample. Degradation of target analytes appears to not have ocurred from time extracted to time analyzed.

David E. Splichal

David E. Splichal,
Organic Section Team Leader

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Explosives (Method Blank) Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Extracted:	10/02/00	Matrix:	Water
MB Sample ID:	WG6604-1	Date Analyzed:	11/28/00	Units:	ug/L
Method:	SW-846 Method 8330			Dilution Factor:	1
Batch ID:	WG6604	Date Reported:	12/21/00		
Analyst:	Schnitker				

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	1.6	0.2
121-82-4	RDX	u	1.3	0.3
99-35-4	1,3,5-Trinitrobenzene	u	0.35	0.06
99-65-0	1,3-Dinitrobenzene	u	0.46	0.08
479-45-8	Tetryl	u	0.82	0.2
618-87-1	3,5-Dinitroaniline	u	0.44	0.2
98-95-3	Nitrobenzene	u	0.56	0.07
118-96-7	2,4,6-Trinitrotoluene	u	0.34	0.07
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.19	0.06
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.21	0.03
606-20-2	2,6-Dinitrotoluene	u	0.15	0.08
121-14-2	2,4-Dinitrotoluene	u	0.24	0.02
88-72-2	2-Nitrotoluene	u	0.18	0.08
99-99-0	4-Nitrotoluene	u	0.27	0.08
99-08-1	3-Nitrotoluene	u	0.26	0.04

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Benzaldehyde	78	44-98	0.65

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Explosives (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Work					
Project Number:	6008	Date Extracted:	10/02/00	Sample ID:	Sample	LD
Client Sample ID:	AA3012	Date Analyzed:	11/28/00	MRL No.:	M000992-003	WG6604-3
Method:	SW-846 Method 8330					
Analyst:	Schnitker	Date Reported:	12/21/00	Matrix:	Water	
Batch ID:	WG6604			Units:	ug/L	

CAS Number	Target Analyte	Sample Result	LD Result	Laboratory Reporting Limit	Method Detection Limit	RPD	QC Limits
2691-41-0	HMX	u	31 C	1.6	0.2	NC	25
121-82-4	RDX	10 C	30 C	1.3	0.3	98 *	25
99-35-4	1,3,5-Trinitrobenzene	4.1 C	4.4 C	0.35	0.06	7	25
99-65-0	1,3-Dinitrobenzene	3.9 C	5.8 C	0.46	0.08	39 *	25
479-45-8	Tetryl	u	u	0.82	0.2	NC	25
618-87-1	3,5-Dinitroaniline	u	u	0.44	0.2	NC	25
98-95-3	Nitrobenzene	18 C	22 C	0.56	0.07	17	25
118-96-7	2,4,6-Trinitrotoluene	110 C	130 C	0.34	0.07	20	25
1946-51-0	4-Amino-2,6-Dinitrotoluene	1500 CD	2300 CD	76	0.06	44 *	25
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	u	0.21	0.03	NC	25
606-20-2	2,6-Dinitrotoluene	6100 D	7700 D	60	0.08	24	25
121-14-2	2,4-Dinitrotoluene	6800 D	7900 D	96	0.02	16	25
88-72-2	2-Nitrotoluene	140 C	140 C	0.18	0.08	2	25
99-99-0	4-Nitrotoluene	62 C	62 C	0.27	0.08	1	25
99-08-1	3-Nitrotoluene	25 C	26 C	0.26	0.04	5	25

u: Below Detection Limit
D: Result from 1:400 dilution.

*: Indicates the value is outside acceptance limits. The surrogate was diluted to below detection limits.

C: Result not confirmed due to matrix interference.
NC: Not Calculable
Laboratory Comments:
RPD = (|Sample Result - LD Result| x 100)/((Sample Result + LD Result)/2)

Quality Control

Surrogate Standard	Recovery (%) Sample	LD	Acceptable	Spike (ug/L)	RPD	QC Limits
Benzaldehyde	0 *	0 *	44-98	0.65	NC	25

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Explosives (Matrix Spike, Matrix Spike Duplicate) Report

Project Name:	Former Plumbrook Ordnance Work					
Project Number:	6008	Date Extracted:	10/02/00	Sample ID:	MS	MSD
Client Sample ID:	AB3012	Date Analyzed:	11/28/00	MRL No.:	WG6604-4	N/A
MRL Sample ID:	M000997-003					
Method:	SW-846 Method 8330	Date Reported:	12/21/00			
Batch ID:	WG6604	Matrix:	Water			
Analyst:	Schnitker	Units:	ug/L			

CAS Number	Target Analyte	Sample Result	Spike Added	Conc MS	% Rec MS	QC Limits	Conc MSD	%Rec MSD	RPD	QC Limits
2691-41-0	HMX	u	1.30	1.57 J	120	39-126	-	-	-	25
121-82-4	RDX	u	1.30	0.99 J	76	35-119	-	-	-	25
99-35-4	1,3,5-Trinitrobenzene	0.78	0.65	0.65	NC	49-128	-	-	-	25
99-65-0	1,3-Dinitrobenzene	1.0 C	0.65	1.26	34 *	46-115	-	-	-	25
479-45-8	Tetryl	u	1.30	1.35	100	14-120	-	-	-	25
98-95-3	Nitrobenzene	u	0.65	0.99	150 *	44-112	-	-	-	25
118-96-7	2,4,6-Trinitrotoluene	4.0	0.65	4.77	130 *	55-112	-	-	-	25
1946-51-0	4-Amino-2,6-Dinitrotoluene	24 C	0.65	25.1	230 *	49-151	-	-	-	25
355-72-78-2	2-Amino-4,6-Dinitrotoluene	15 C	0.65	16.1	150 *	55-113	-	-	-	25
606-20-2	2,6-Dinitrotoluene	3.8	0.65	4.57	120 *	60-111	-	-	-	25
121-14-2	2,4-Dinitrotoluene	7.0	0.65	7.99	150 *	61-113	-	-	-	25
88-72-2	2-Nitrotoluene	3.3 C	0.65	3.97	100	60-113	-	-	-	25
99-99-0	4-Nitrotoluene	0.65	0.65	1.33	100	62-117	-	-	-	25
99-08-1	3-Nitrotoluene	0.57	0.65	1.20	97	41-124	-	-	-	25

u: Below Method Detection Limit
NC: Not Calculable
J: Estimated concentration above Method Detection Limit but below Laboratory Reporting Limit.
*: Indicates the value is outside acceptance limits.

C: Result not confirmed due to matrix interference.
Laboratory Comments: Due to insufficient sample volume, a matrix spike duplicate could not be extracted with this batch.

Quality Control

Surrogate Standard	Recovery (%) MS	MSD	Acceptable	Spike (ug/L)	RPD	QC Limits
Benzaldehyde	74	-	44-98	0.65	-	25

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Explosives (Laboratory Control Sample) Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Extracted:	10/02/00	Matrix:	Water
LCS Sample ID:	WG6604-2	Date Analyzed:	11/28/00	Units:	ug/L
Method:	SW-846 Method 8330			Dilution Factor:	1
Batch ID:	WG6604	Date Reported:	12/21/00		
Analyst:	Schnitker				

CAS Number	Target Analyte	Spike Added	Conc LCS	% Rec LCS	QC Limits
2691-41-0	HMX	1.30	0.8 J	64	39-126
121-82-4	RDX	1.30	1 J	77	35-119
99-35-4	1,3,5-Trinitrobenzene	0.65	0.54	82	49-128
99-65-0	1,3-Dinitrobenzene	0.65	0.57	88	46-115
479-45-8	Tetryl	1.30	0.7 J	52	14-120
98-95-3	Nitrobenzene	0.65	0.65	100	44-112
118-96-7	2,4,6-Trinitrotoluene	0.65	0.60	93	55-112
1946-51-0	4-Amino-2,6-Dinitrotoluene	0.65	0.75	115	49-151
355-72-78-2	2-Amino-4,6-Dinitrotoluene	0.65	0.64	99	55-113
606-20-2	2,6-Dinitrotoluene	0.65	0.63	97	60-111
121-14-2	2,4-Dinitrotoluene	0.65	0.69	106	61-113
88-72-2	2-Nitrotoluene	0.65	0.68	104	60-113
99-99-0	4-Nitrotoluene	0.65	0.63	96	62-117
99-08-1	3-Nitrotoluene	0.65	0.69	106	41-124

J: Estimated concentration above Method Detection Limit but below Laboratory Reporting Limit.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (ug/L)
Benzaldehyde	64	44-98	0.65

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Explosives Sample Report

Project Name:	Former Plumbrook Crdnance Work				
Project Number:	6008	Date Sampled:	09/26/00	Matrix:	Soil
Client Sample ID:	AB0435	Date Received:	09/27/00	Units:	mg/kg
Sample ID:	M000992-004	Date Extracted:	10/05/00	Dilution Factor:	1
Method:	SW-846 Method 8330	Date Dried:	09/28/00		
Batch ID:	WG6634	Date Analyzed:	10/25/00		
Analyst:	Schnitker	Date Reported:	12/26/00		

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	2.2	0.2
121-82-4	RDX	u	1.0	0.6
99-35-4	1,3,5-Trinitrobenzene	u	0.25	0.02
99-65-0	1,3-Dinitrobenzene	u	0.25	0.1
479-45-8	Tetryl	u	0.65	0.2
618-87-1	3,5-Dinitroaniline	u	0.65	0.08
98-95-3	Nitrobenzene	u	0.26	0.03
118-96-7	2,4,6-Trinitrotoluene	0.1 JC	0.25	0.1
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.26	0.09
355-72-78-2	2-Amino-4,6-Dinitrotoluene	0.1 JC	0.25	0.1
606-20-2	2,6-Dinitrotoluene	u	0.26	0.02
121-14-2	2,4-Dinitrotoluene	0.2 J	0.25	0.04
88-72-2	2-Nitrotoluene	u	0.25	0.02
99-99-0	4-Nitrotoluene	u	0.25	0.04
99-08-1	3-Nitrotoluene	u	0.25	0.03

u: Below Method Detection Limit
J: Estimated concentration above Method Detection Limit but below Lab Reporting Limit.
C: Result not confirmed due to matrix interference.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (mg/kg)
3,4-Dinitrotoluene	89	71-122	1.25

Matrix Spike : WG6634-4
Laboratory Duplicate : WG6634-3
Laboratory Control Sample : WG6634-2
Matrix Spike Duplicate : WG6634-5
Method Blank : WG6634-1

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Explosives Sample Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Sampled:	09/27/00	Matrix:	Soil
Client Sample ID:	AB0453	Date Received:	09/28/00	Units:	mg/kg
Sample ID:	M000997-006	Date Extracted:	10/05/00	Dilution Factor:	1
Method:	SW-846 Method 8330	Date Dried:	09/28/00		
Batch ID:	WG6634	Date Analyzed:	10/25/00		
Analyst:	Schnitker	Date Reported:	12/26/00		

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	2.2	0.2
121-82-4	RDX	5.1 C	1.0	0.6
99-35-4	1,3,5-Trinitrobenzene	10 C	0.25	0.02
99-65-0	1,3-Dinitrobenzene	u	0.25	0.1
479-45-8	Tetryl	0.6 JC	0.65	0.2
618-87-1	3,5-Dinitroaniline	u	0.65	0.08
98-95-3	Nitrobenzene	u	0.26	0.03
118-96-7	2,4,6-Trinitrotoluene Epa 54969	8460 D	100	0.1
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	100	0.09
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.25	0.1
606-20-2	2,6-Dinitrotoluene	1.5 C	0.26	0.02
121-14-2	2,4-Dinitrotoluene	9.9 C	0.25	0.04
88-72-2	2-Nitrotoluene	u	0.25	0.02
99-99-0	4-Nitrotoluene	u	0.25	0.04
99-08-1	3-Nitrotoluene	u	0.25	0.03

D: Result is from a 1:400 dilution.
u: Below Method Detection Limit.
J: Estimated concentration above Method Detection Limit but below Lab Reporting Limit.
C: Result not confirmed due to matrix interference.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (mg/kg)
3,4-Dinitrotoluene	102	71-122	1.25

Matrix Spike : WG6634-4
Laboratory Duplicate : WG6634-3
Laboratory Control Sample : WG6634-2
Matrix Spike Duplicate : WG6634-5
Method Blank : WG6634-1

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Narrative for WG6634 - Explosives Analysis
Project name: Former Plumbrook Ordnance Work
Project number: 6008

1. The first continuing calibration standard (CCV3) contained three analytes slightly outside, and one significantly outside, the acceptance criteria of -15% difference from the initial calibration curve. Percent difference values for the four analytes are summarized below:

Tetryl	at -35.0%
2-nitrotoluene	at -15.6%
4-nitrotoluene	at -15.8%
3-nitrotoluene	at -16.4%

The average of the 16 calibrated analytes is 11.7%, which is within the 15% criteria.

The end of sequence continuing calibration standard (CCV5) contained all analytes within the 15% criteria.

2. The impact on data quality/data useability from the failed CCV is insignificant. Tetryl results for the matrix spike, matrix spike duplicate and laboratory control samples are within acceptable limits.

David E. Splichal

David E. Splichal,
Organic Section Team Leader

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Explosives (Method Blank) Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Extracted:	10/05/00	Matrix:	Soil
MB Sample ID:	WG6634-1	Date Analyzed:	10/25/00	Units:	mg/kg
Method:	SW-846 Method 8330			Dilution Factor:	1
Batch ID:	WG6634	Date Reported:	12/26/00		
Analyst:	Schnitker				

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	2.2	0.2
121-82-4	RDX	u	1.0	0.6
99-35-4	1,3,5-Trinitrobenzene	u	0.25	0.02
99-65-0	1,3-Dinitrobenzene	u	0.25	0.1
479-45-8	Tetryl	u	0.65	0.2
618-87-1	3,5-Dinitroaniline	u	0.65	0.08
98-95-3	Nitrobenzene	u	0.26	0.03
118-96-7	2,4,6-Trinitrotoluene	u	0.25	0.1
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.26	0.09
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.25	0.1
606-20-2	2,6-Dinitrotoluene	u	0.26	0.02
121-14-2	2,4-Dinitrotoluene	u	0.25	0.04
88-72-2	2-Nitrotoluene	u	0.25	0.02
99-99-0	4-Nitrotoluene	u	0.25	0.04
99-08-1	3-Nitrotoluene	u	0.25	0.03

u: Below Method Detection Limit

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (mg/kg)
3,4-Dinitrotoluene	87	71-122	1.25

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Explosives (Laboratory Matrix Duplicate) Report

Project Name:	Former Plumbrook Ordnance Work					
Project Number:	6008	Date Extracted:	10/05/00	Sample ID:	Sample	LD
Client Sample ID:	Batch Specific	Date Analyzed:	10/25/00	MRL No.:	M000987-001	WG6634-3
Method:	SW-846 Method 8330	Date Dried:	10/26/00			
Analyst:	Schnitker	Date Reported:	12/26/00	Matrix:	Soil	
Batch ID:	WG6634			Units:	mg/kg	

CAS Number	Target Analyte	Sample Result	LD Result	Laboratory Reporting Limit	Method Detection Limit	RPD	QC Limits
2691-41-0	HMX	u	u	2.2	0.2	NC	25
121-82-4	RDX	u	u	1.0	0.6	NC	25
99-35-4	1,3,5-Trinitrobenzene	0.2 J	0.2 J	0.25	0.02	8	25
99-65-0	1,3-Dinitrobenzene	u	u	0.25	0.1	NC	25
479-45-8	Tetryl	u	u	0.65	0.2	NC	25
618-87-1	3,5-Dinitroaniline	u	u	0.65	0.08	NC	25
98-95-3	Nitrobenzene	u	u	0.26	0.03	NC	25
118-96-7	2,4,6-Trinitrotoluene	3.3	3.0	0.25	0.1	8	25
1946-51-0	4-Amino-2,6-Dinitrotoluene	1.8 C	1.7 C	0.26	0.09	4	25
355-72-78-2	2-Amino-4,6-Dinitrotoluene	2.7 C	2.7 C	0.25	0.1	1	25
606-20-2	2,6-Dinitrotoluene	0.1 J	0.1 J	0.26	0.02	13	25
121-14-2	2,4-Dinitrotoluene	0.62	0.61	0.25	0.04	2	25
88-72-2	2-Nitrotoluene	u	u	0.25	0.02	NC	25
99-99-0	4-Nitrotoluene	u	u	0.25	0.04	NC	25
99-08-1	3-Nitrotoluene	u	u	0.25	0.03	NC	25

u: Below Detection Limit
J: Estimated concentration above Method Detection Limit but below Laboratory Reporting Limit.

C: Result not confirmed due to matrix interference.
NC: Not Calculable
Laboratory Comments:
RPD = (|Sample Result - LD Result| x 100)/((Sample Result + LD Result)/2)

Quality Control

Surrogate Standard	Recovery (%) Sample	LD	Acceptable	Spike (mg/kg)	RPD	QC Limits
3,4-Dinitrotoluene	98	102	71-122	1.25	4	25

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Explosives (Matrix Spike, Matrix Spike Duplicate) Report

Project Name:	Former Plumbrook Ordnance Work					
Project Number:	6008	Date Extracted:	10/05/00	Sample ID:	MS	MSD
Client Sample ID:	Batch Specific	Date Analyzed:	10/25/00	MRL No.:	WG6634-4	WG6634-5
MRL Sample ID:	M000987-001	Date Dried:	10/26/00			
Method:	SW-846 Method 8330	Date Reported:	12/26/00			
Batch ID:	WG6634	Matrix:	Soil			
Analyst:	Schnitker	Units:	mg/kg			

CAS Number	Target Analyte	Sample Result	Spike Added	Conc MS	% Rec MS	QC Limits	Conc MSD	%Rec MSD	RPD	QC Limits
2691-41-0	HMX	u	2.50	2.54	101	69-116	2.71	108	6	25
121-82-4	RDX	u	2.50	2.51	101	64-107	2.62	105	4	25
99-35-4	1,3,5-Trinitrobenzene	0.17	1.25	1.39	97	78-116	1.45	102	4	25
99-65-0	1,3-Dinitrobenzene	u	1.25	1.25	100	73-113	1.30	104	4	25
479-45-8	Tetryl	u	2.50	2.22	89	46-151	2.18	87	1	25
98-95-3	Nitrobenzene	u	1.25	1.40	112 *	75-111	1.43	114 *	2	25
118-96-7	2,4,6-Trinitrotoluene	3.3	1.25	3.84	45 *	61-106	4.36	87	13	25
1946-51-0	4-Amino-2,6-Dinitrotoluene	1.8 C	1.25	2.85	84	63-106	3.01	96	5	25
355-72-78-2	2-Amino-4,6-Dinitrotoluene	2.7 C	1.25	3.86	94	70-109	4.01	106	4	25
606-20-2	2,6-Dinitrotoluene	0.11	1.25	1.38	102	70-113	1.42	104	2	25
121-14-2	2,4-Dinitrotoluene	0.62	1.25	1.79	94	73-113	2.01	111	11	25
88-72-2	2-Nitrotoluene	u	1.25	1.20	96	74-113	1.21	97	1	25
99-99-0	4-Nitrotoluene	u	1.25	1.17	93	75-112	1.21	97	4	25
99-08-1	3-Nitrotoluene	u	1.25	1.19	95	67-114	1.20	96	2	25

u: Below Method Detection Limit
*: Indicates the value is outside acceptance limits.

C: Result not confirmed due to matrix interference.
Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%) MS	MSD	Acceptable	Spike (mg/kg)	RPD	QC Limits
3,4-Dinitrotoluene	102	103	71-122	1.25	1	25

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DEPARTMENT OF THE ARMY
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Explosives (Laboratory Control Sample) Report

Project Name: Former Plumbrook Ordnance Work
Project Number: 6008
LCS Sample ID: WG6634-2
Method: SW-846 Method 8330
Batch ID: WG6634
Analyst: Schnitker

Date Extracted: 10/05/00
Date Analyzed: 10/25/00
Date Reported: 12/26/00

Matrix: Soil
Units: mg/kg
Dilution Factor: 1

CAS Number	Target Analyte	Spike Added	Conc LCS	% Rec LCS	QC Limits
2691-41-0	HMX	2.50	2.45	98	69-116
121-82-4	RDX	2.50	2.30	92	64-107
99-35-4	1,3,5-Trinitrobenzene	1.25	1.21	97	78-116
99-65-0	1,3-Dinitrobenzene	1.25	1.27	102	73-113
479-45-8	Tetryl	2.50	1.87	75	46-151
98-95-3	Nitrobenzene	1.25	1.42	114 *	75-111
118-96-7	2,4,6-Trinitrotoluene	1.25	1.14	91	61-106
1946-51-0	4-Amino-2,6-Dinitrotoluene	1.25	1.18	95	63-106
355-72-78-2	2-Amino-4,6-Dinitrotoluene	1.25	1.24	99	70-109
606-20-2	2,6-Dinitrotoluene	1.25	1.25	100	70-113
121-14-2	2,4-Dinitrotoluene	1.25	1.23	98	73-113
88-72-2	2-Nitrotoluene	1.25	1.18	95	74-113
99-99-0	4-Nitrotoluene	1.25	1.16	93	75-112
99-08-1	3-Nitrotoluene	1.25	1.19	95	67-114

*: Indicates the value is outside acceptance limits.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (mg/kg)
3,4-Dinitrotoluene	91	71-122	1.25

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C180

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Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB1017
Sample ID: M000975-001

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Reported: 11/02/00

Matrix: Soil
Units: mg/kg
% Solids: 69.5

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	1	10.9	3.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-22-4	Silver	1	u	1.0	0.2	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7429-90-5	Aluminum	1	7640	18.	6.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-39-3	Barium	1	74.8	0.50	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-41-7	Beryllium	1	0.59	0.40	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-70-2	Calcium	1	17900	60.	20	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-43-9	Cadmium	1	0.15 J	0.50	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-48-4	Cobalt	1	13.5	3.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-47-3	Chromium	1	11.7	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-50-8	Copper	1	17.6	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-89-6	Iron	1	22800	24.	8.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-09-7	Potassium	1	1370	60.	20	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-95-4	Magnesium	1	4280	24.	8.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-96-5	Manganese	1	707.	0.80	0.2	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-23-5	Sodium	1	110	80.	40	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-02-0	Nickel	1	28.6	2.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-92-1	Lead	1	14.7	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7782-49-2	Selenium	1	u	4.0	0.8	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-36-0	Antimony	1	u	4.0	1.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-28-0	Thallium	1	u	6.0	1.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-62-2	Vanadium	1	19.4	4.0	0.8	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-66-6	Zinc	1	57.7	2.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

Quality Assurance / Quality Control

ICP Method Blank ID: WG6582-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LCS ID: WG6582-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP LD ID: WG6582-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MS ID: WG6582-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP MSD ID: WG6582-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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C181

DEPARTMENT OF THE ARMY
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Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB1017
Sample ID: M000975-001

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Reported: 10/11/00

Matrix: Soil
Units: mg/kg
% Solids: 69.5

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	0.0332	0.0030	0.0005	EPA 7471	WG6639	10-05-00	10-06-00	Duffy

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6639-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6639-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6639-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6639-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6639-5

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Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB1019
Sample ID: M000975-004

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Reported: 11/02/00

Matrix: Soil
Units: mg/kg
% Solids: 75.9

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	1	5.7	3.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-22-4	Silver	1	u	1.0	0.2	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7429-90-5	Aluminum	1	5410	18.	6.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-39-3	Barium	1	43.4	0.50	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-41-7	Beryllium	1	0.35 J	0.40	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-70-2	Calcium	1	5170	60.	20	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-43-9	Cadmium	1	u	0.50	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-48-4	Cobalt	1	7.3	3.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-47-3	Chromium	1	9.09	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-50-8	Copper	1	12.1	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-89-6	Iron	1	16100	24.	8.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-09-7	Potassium	1	935.	60.	20	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-95-4	Magnesium	1	2160	24.	8.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-96-5	Manganese	1	296.	0.80	0.2	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-23-5	Sodium	1	160 ppm 71. J	80.	40	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-02-0	Nickel	1	16.9	2.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-92-1	Lead	1	16.8	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7782-49-2	Selenium	1	u	4.0	0.8	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-36-0	Antimony	1	u	4.0	1.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-28-0	Thallium	1	u	6.0	1.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-62-2	Vanadium	1	14.5	4.0	0.8	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-66-6	Zinc	1	44.3	2.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

Quality Assurance / Quality Control

ICP Method Blank ID: WG6582-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LCS ID: WG6582-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP LD ID: WG6582-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MS ID: WG6582-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP MSD ID: WG6582-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB1019
Sample ID: M000975-004

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Reported: 10/11/00

Matrix: Soil
Units: mg/kg
% Solids: 75.9

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	0.0247	0.0030	0.0005	EPA 7471	WG6639	10-05-00	10-06-00	Duffy

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6639-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6639-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6639-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6639-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6639-5

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[redacted] C184

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Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0428
Sample ID: M000997-004

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Reported: 10/20/00

Matrix: Soil
Units: mg/kg
% Solids: 80.1

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	1	4.4	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-22-4	Silver	1	0.23 J	1.0	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7429-90-5	Aluminum	1	4750	18.	6.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-39-3	Barium	1	95.0	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-41-7	Beryllium	1	0.47	0.40	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-70-2	Calcium	1	31500	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-43-9	Cadmium	1	0.22 J	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-48-4	Cobalt	1	4.9	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-47-3	Chromium	1	7.42	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-50-8	Copper	1	10.6	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-89-6	Iron	1	25000	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-09-7	Potassium	1	625.	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-95-4	Magnesium	1	6660	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-96-5	Manganese	1	2030	0.80	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-23-5	Sodium	1	215ppm 68. J	80.	40	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-02-0	Nickel	1	12.0	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-92-1	Lead	1	99.2	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7782-49-2	Selenium	1	u	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-36-0	Antimony	1	u	4.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-28-0	Thallium	1	u	6.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-62-2	Vanadium	1	12.9	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-66-6	Zinc	1	66.3	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

Quality Assurance / Quality Control

ICP LCS ID: WG6671-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP MS ID: WG6671-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP Method Blank ID: WG6671-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LD ID: WG6671-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MSD ID: WG6671-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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C185

DEPARTMENT OF THE ARMY
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Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0428
Sample ID: M000997-004

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Reported: 10/11/00

Matrix: Soil
Units: mg/kg
% Solids: 80.1

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	0.0368	0.0030	0.0005	EPA 7471	WG6639	10-05-00	10-06-00	Duffy

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6639-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6639-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6639-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6639-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6639-5

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C156

DEPARTMENT OF THE ARMY
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Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0450
Sample ID: M000997-005

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Reported: 10/20/00

Matrix: Soil
Units: mg/kg
% Solids: 84.0

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	1	2.9 J	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-22-4	Silver	1	u	1.0	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7429-90-5	Aluminum	1	3590	18.	6.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-39-3	Barium	1	20.3	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-41-7	Beryllium	1	0.30 J	0.40	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-70-2	Calcium	1	9980	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-43-9	Cadmium	1	0.21 J	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-48-4	Cobalt	1	3.8	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-47-3	Chromium	1 38 ppm	9.44	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-50-8	Copper	1	19.8	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-89-6	Iron	1	12200	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-09-7	Potassium	1	467.	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-95-4	Magnesium	1	1850	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-96-5	Manganese	1	158.	0.80	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-23-5	Sodium	1 252 ppm	60. J	80.	40	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-02-0	Nickel	1 24.9 ppm	9.70	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-92-1	Lead	1	197.	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7782-49-2	Selenium	1	u	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-36-0	Antimony	1	u	4.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-28-0	Thallium	1	u	6.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-62-2	Vanadium	1	17.3	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-66-6	Zinc	1	70.4	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

Quality Assurance / Quality Control

ICP LCS ID: WG6671-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP MS ID: WG6671-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP Method Blank ID: WG6671-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LD ID: WG6671-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MSD ID: WG6671-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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C187

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0450
Sample ID: M000997-005

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Reported: 10/11/00

Matrix: Soil
Units: mg/kg
% Solids: 84.0

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	0.457	0.0030	0.0005	EPA 7471	WG6639	10-05-00	10-06-00	Duffy

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6639-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6639-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6639-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6639-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6639-5

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DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0453
Sample ID: M000997-006

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Reported: 10/20/00

Matrix: Soil
Units: mg/kg
% Solids: 86.9

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	1	4.6	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-22-4	Silver	1	u	1.0	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7429-90-5	Aluminum	1	2820	18.	6.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-39-3	Barium	1	20.1	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-41-7	Beryllium	1	0.26 J	0.40	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-70-2	Calcium	1	1430	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-43-9	Cadmium	1	0.17 J	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-48-4	Cobalt	1	2.6 J	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-47-3	Chromium	1	4.8	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-50-8	Copper	1	11.4	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-89-6	Iron	1	9140	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-09-7	Potassium	1	372.	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-95-4	Magnesium	1	595.	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-96-5	Manganese	1	88.1	0.80	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-23-5	Sodium	1	163 ppm 44. J	80.	40	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-02-0	Nickel	1	6.4	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-92-1	Lead	1	58.5	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7782-49-2	Selenium	1	u	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-36-0	Antimony	1	u	4.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-28-0	Thallium	1	u	6.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-62-2	Vanadium	1	9.7	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-66-6	Zinc	1	66.8	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

Quality Assurance / Quality Control

ICP Method Blank ID: WG6671-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LCS ID: WG6671-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP LD ID: WG6671-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MS ID: WG6671-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP MSD ID: WG6671-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0453
Sample ID: M000997-006

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Reported: 10/11/00

Matrix: Soil
Units: mg/kg
% Solids: 86.9

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	0.0531	0.0030	0.0005	EPA 7471	WG6639	10-05-00	10-06-00	Duffy

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6639-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6639-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6639-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6639-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6639-5

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DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0435
Sample ID: M000992-004

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Reported: 10/20/00

Matrix: Soil
Units: mg/kg
% Solids: 89.2

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	1	2.8 J	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-22-4	Silver	1	u	1.0	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7429-90-5	Aluminum	1	5190	18.	6.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-39-3	Barium	1	29.0	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-41-7	Beryllium	1	0.38 J	0.40	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-70-2	Calcium	1	37700	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-43-9	Cadmium	1	0.15 J	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-48-4	Cobalt	1	6.2	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-47-3	Chromium	1	8.48	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-50-8	Copper	1	8.70	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-89-6	Iron	1	12700	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-09-7	Potassium	1	1180	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-95-4	Magnesium	1	2190	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-96-5	Manganese	1	481.	0.80	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-23-5	Sodium	1	196 ppm 83	80.	40	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-02-0	Nickel	1	17.3	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-92-1	Lead	1	16.6	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7782-49-2	Selenium	1	u	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-36-0	Antimony	1	u	4.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-28-0	Thallium	1	u	6.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-62-2	Vanadium	1	11.	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-66-6	Zinc	1	81.6	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

Quality Assurance / Quality Control

ICP LCS ID: WG6671-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP MS ID: WG6671-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP Method Blank ID: WG6671-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LD ID: WG6671-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MSD ID: WG6671-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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C191

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB0435
Sample ID: M000992-004

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Reported: 10/11/00

Matrix: Soil
Units: mg/kg
% Solids: 89.2

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	0.00940	0.0030	0.0005	EPA 7471	WG6640	10-05-00	10-06-00	Duffy

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6640-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6640-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6640-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6640-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6640-5

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Method Blank

Method Blank ICP Sample ID: WG6582-1
Method Blank GFAA Sample ID:
Method Blank CVAA Sample ID:

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	u	3.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-22-4	Silver	u	1.0	0.2	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7429-90-5	Aluminum	u	18.	6.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-39-3	Barium	u	0.50	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-41-7	Beryllium	u	0.40	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-70-2	Calcium	u	60.	20	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-43-9	Cadmium	u	0.50	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-48-4	Cobalt	u	3.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-47-3	Chromium	u	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-50-8	Copper	u	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-89-6	Iron	u	24.	8.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-09-7	Potassium	u	60.	20	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-95-4	Magnesium	u	24.	8.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-96-5	Manganese	u	0.80	0.2	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-23-5	Sodium	u	80.	40	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-02-0	Nickel	u	2.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-92-1	Lead	u	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7782-49-2	Selenium	u	4.0	0.8	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-36-0	Antimony	u	4.0	1.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-28-0	Thallium	u	6.0	1.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-62-2	Vanadium	u	4.0	0.8	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-66-6	Zinc	u	2.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

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Laboratory Matrix Duplicate

Matrix Duplicate ICP Sample ID: WG6582-3
Matrix Duplicate GFAA Sample ID:
Matrix Duplicate CVAA Sample ID:

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	Sample Result	Dup Result	RPD	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	5.7	6.9	19.0	3.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-22-4	Silver	u	u	NC	1.0	0.2	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7429-90-5	Aluminum	5410	5570	2.9	18.	6.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-39-3	Barium	43.4	43.2	0.5	0.50	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-41-7	Beryllium	0.35 J	0.38 J	8.2	0.40	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-70-2	Calcium	5170	5030	2.8	60.	20	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-43-9	Cadmium	u	u	NC	0.50	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-48-4	Cobalt	7.3	7.4	1.4	3.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-47-3	Chromium	9.1	9.4	3.2	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-50-8	Copper	12.1	12.4	2.5	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-89-6	Iron	16100	17200	6.6	24.	8.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-09-7	Potassium	935.	955.	2.1	60.	20	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-95-4	Magnesium	2160	2200	1.8	24.	8.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-96-5	Manganese	296.	290.	2.1	0.80	0.2	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-23-5	Sodium	71. J	73.9 J	4.0	80.	40	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-02-0	Nickel	16.9	17.2	1.8	2.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-92-1	Lead	16.8	18.3	8.6	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7782-49-2	Selenium	u	u	NC	4.0	0.8	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-36-0	Antimony	u	u	NC	4.0	1.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-28-0	Thallium	u	u	NC	6.0	1.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-62-2	Vanadium	14.5	16.1	10.5	4.0	0.8	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-66-6	Zinc	44.3	46.3	4.4	2.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)
NC: Not Calculable
J: Estimated concentration below laboratory reporting limit

QC Sample: M000975-004

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Matrix Spike, Matrix Spike Duplicate

MS ICP Sample ID: WG6582-4 MSD ICP Sample ID: WG6582-5 Matrix: Soil
MS GFAA Sample ID: MSD GFAA Sample ID: Units: mg/kg
MS CVAA Sample ID: MSD CVAA Sample ID:

CAS Number	Analyte	Sample Result	MS Conc	Spike Added	%Rec MS	MSD Conc	%Rec MSD	RPD	Method	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	5.7	100.	100.	94.8	99.0	93.3	1.5	EPA 6010B	09-28-00	10-25-00	Shannon
7440-22-4	Silver	u	19.5	20.0	97.7	19.5	97.3	0.4	EPA 6010B	09-28-00	10-25-00	Shannon
7429-90-5	Aluminum	5410	7760	600.	NC *&	7320	NC *&	NC	EPA 6010B	09-28-00	10-25-00	Shannon
7440-39-3	Barium	43.4	146.	100.	103.	142.	98.1	3.1	EPA 6010B	09-28-00	10-25-00	Shannon
7440-41-7	Beryllium	0.35 J	38.8	40.0	96.2	38.7	95.9	0.3	EPA 6010B	09-28-00	10-25-00	Shannon
7440-70-2	Calcium	5170	7790	1500	175. *	6470	86.5	18.6	EPA 6010B	09-28-00	10-25-00	Shannon
7440-43-9	Cadmium	u	47.6	50.0	95.1	47.6	95.1	0.0	EPA 6010B	09-28-00	10-25-00	Shannon
7440-48-4	Cobalt	7.3	106.	100.	98.4	104.	96.7	1.6	EPA 6010B	09-28-00	10-25-00	Shannon
7440-47-3	Chromium	9.1	107.	100.	97.4	106.	96.5	0.9	EPA 6010B	09-28-00	10-25-00	Shannon
7440-50-8	Copper	12.1	112.	100.	100.	110.	97.7	2.1	EPA 6010B	09-28-00	10-25-00	Shannon
7439-89-6	Iron	16100	18000	600.	NC *&	15700	NC *&	NC	EPA 6010B	09-28-00	10-25-00	Shannon
7440-09-7	Potassium	935.	2160	1000	122. *	2110	117.	2.4	EPA 6010B	09-28-00	10-25-00	Shannon
7439-95-4	Magnesium	2160	3760	1500	106.	3570	93.7	5.1	EPA 6010B	09-28-00	10-25-00	Shannon
7439-96-5	Manganese	296.	425.	100.	129. *	359.	62.9 *	16.9	EPA 6010B	09-28-00	10-25-00	Shannon
7440-23-5	Sodium	71. J	1430	1500	90.2	1420	89.9	0.4	EPA 6010B	09-28-00	10-25-00	Shannon
7440-02-0	Nickel	16.9	115.	100.	98.3	112.	95.0	2.9	EPA 6010B	09-28-00	10-25-00	Shannon
7439-92-1	Lead	16.8	114.	100.	96.8	113.	96.5	0.2	EPA 6010B	09-28-00	10-25-00	Shannon
7782-49-2	Selenium	u	88.0	100.	88.0	87.1	87.1	1.0	EPA 6010B	09-28-00	10-25-00	Shannon
7440-36-0	Antimony	u	23.8	100.	23.8 *	26.8	26.8 *	11.8	EPA 6010B	09-28-00	10-25-00	Shannon
7440-28-0	Thallium	u	96.0	100.	96.0	96.0	96.0	0.1	EPA 6010B	09-28-00	10-25-00	Shannon
7440-62-2	Vanadium	14.5	116.	100.	101.	114.	99.9	1.1	EPA 6010B	09-28-00	10-25-00	Shannon
7440-66-6	Zinc	44.3	143.	100.	99.1	139.	95.1	2.8	EPA 6010B	09-28-00	10-25-00	Shannon

%Rec: Percent of the spike recovered from the matrix

u: Below Method Detection Limit

NC: Not Calculable

* Indicates the value is outside control limits (80-120) for %Rec.

*& = High analyte concentration prevented accurate determination of the matrix spike recovery.

J: Estimated concentration below laboratory reporting limit
QC Sample: M000975-004

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C195

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Laboratory Control Sample

LCS ICP Sample ID: WG6582-2
LCS GFAA Sample ID:
LCS CVAA Sample ID:

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	LCS Result	True Value	%Rec	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	102.	100.	102.	3.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-22-4	Silver	20.4	20.0	102.	1.0	0.2	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7429-90-5	Aluminum	582.	600.	97.0	18.	6.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-39-3	Barium	100.	100.	100.	0.50	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-41-7	Beryllium	39.7	40.0	99.1	0.40	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-70-2	Calcium	1500	1500	100.	60.	20	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-43-9	Cadmium	50.4	50.0	101.	0.50	0.1	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-48-4	Cobalt	102.	100.	102.	3.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-47-3	Chromium	99.8	100.	99.8	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-50-8	Copper	101.	100.	101.	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-89-6	Iron	597.	600.	99.6	24.	8.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-09-7	Potassium	986.	1000	98.6	60.	20	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-95-4	Magnesium	1470	1500	97.7	24.	8.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-96-5	Manganese	103.	100.	103.	0.80	0.2	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-23-5	Sodium	1390	1500	92.5	80.	40	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-02-0	Nickel	101.	100.	101.	2.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7439-92-1	Lead	102.	100.	102.	2.0	0.4	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7782-49-2	Selenium	97.2	100.	97.2	4.0	0.8	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-36-0	Antimony	93.1	100.	93.1	4.0	1.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-28-0	Thallium	101.	100.	101.	6.0	1.	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-62-2	Vanadium	101.	100.	101.	4.0	0.8	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon
7440-66-6	Zinc	102.	100.	102.	2.0	0.6	EPA 6010B	WG6582	09-28-00	10-25-00	Shannon

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C196

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Method Blank

Method Blank ICP Sample ID: WG6671-1
Method Blank GFAA Sample ID:
Method Blank CVAA Sample ID:

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	u	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-22-4	Silver	u	1.0	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7429-90-5	Aluminum	u	18.	6.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-39-3	Barium	u	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-41-7	Beryllium	u	0.40	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-70-2	Calcium	u	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-43-9	Cadmium	u	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-48-4	Cobalt	u	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-47-3	Chromium	u	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-50-8	Copper	u	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-89-6	Iron	u	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-09-7	Potassium	u	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-95-4	Magnesium	u	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-96-5	Manganese	u	0.80	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-23-5	Sodium	u	80.	40	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-02-0	Nickel	u	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-92-1	Lead	u	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7782-49-2	Selenium	u	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-36-0	Antimony	u	4.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-28-0	Thallium	u	6.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-62-2	Vanadium	u	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-66-6	Zinc	u	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

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C197

DEPARTMENT OF THE ARMY
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Laboratory Matrix Duplicate

Matrix Duplicate ICP Sample ID: WG6671-3
Matrix Duplicate GFAA Sample ID:
Matrix Duplicate CVAA Sample ID:

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	Sample Result	Dup Result	RPD	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	2.8 J	2.9 J	3.5	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-22-4	Silver	u	u	NC	1.0	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7429-90-5	Aluminum	5190	4950	4.7	18.	6.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-39-3	Barium	29.0	28.8	0.7	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-41-7	Beryllium	0.38 J	0.36 J	5.4	0.40	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-70-2	Calcium	37700	36100	4.3	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-43-9	Cadmium	0.15 J	0.14 J	6.9	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-48-4	Cobalt	6.2	5.9	5.0	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-47-3	Chromium	8.5	8.2	3.6	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-50-8	Copper	8.7	8.3	4.7	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-89-6	Iron	12700	12500	1.6	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-09-7	Potassium	1180	1150	2.6	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-95-4	Magnesium	2190	2200	0.5	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-96-5	Manganese	481.	453.	6.0	0.80	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-23-5	Sodium	83.1	83.9	1.	80.	40	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-02-0	Nickel	17.3	16.9	2.3	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-92-1	Lead	16.6	18.7	11.9	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7782-49-2	Selenium	u	u	NC	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-36-0	Antimony	u	u	NC	4.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-28-0	Thallium	u	u	NC	6.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-62-2	Vanadium	11.2	10.7	4.6	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-66-6	Zinc	81.6	50.9	46.3**	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)
NC: Not Calculable
J: Estimated concentration below laboratory reporting limit
** Indicates the value is outside control limits (25) for RPD.

QC Sample: M000992-004

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C198

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Matrix Spike, Matrix Spike Duplicate

MS ICP Sample ID: WG6671-4 MSD ICP Sample ID: WG6671-5 Matrix: Soil
MS GFAA Sample ID: MSD GFAA Sample ID: Units: mg/kg
MS CVAA Sample ID: MSD CVAA Sample ID:

CAS Number	Analyte	Sample Result	MS Conc	Spike Added	%Rec MS	MSD Conc	%Rec MSD	RPD	Method	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	2.8 J	97.4	100.	94.6	98.3	95.4	0.9	EPA 6010B	10-10-00	10-17-00	Shannon
7440-22-4	Silver	u	19.8	20.0	99.0	19.8	99.1	0.2	EPA 6010B	10-10-00	10-17-00	Shannon
7429-90-5	Aluminum	5190	6460	600.	NC *&	7250	NC *&	NC	EPA 6010B	10-10-00	10-17-00	Shannon
7440-39-3	Barium	29.0	129.	100.	99.8	130.	101.	1.1	EPA 6010B	10-10-00	10-17-00	Shannon
7440-41-7	Beryllium	0.38 J	39.5	40.0	97.8	39.3	97.4	0.5	EPA 6010B	10-10-00	10-17-00	Shannon
7440-70-2	Calcium	37700	36000	1500	NC *&	36200	NC *&	NC	EPA 6010B	10-10-00	10-17-00	Shannon
7440-43-9	Cadmium	0.15 J	48.1	50.0	95.9	48.0	95.7	0.2	EPA 6010B	10-10-00	10-17-00	Shannon
7440-48-4	Cobalt	6.2	103.	100.	96.4	103.	96.5	0.1	EPA 6010B	10-10-00	10-17-00	Shannon
7440-47-3	Chromium	8.5	105.	100.	96.7	106.	97.4	0.7	EPA 6010B	10-10-00	10-17-00	Shannon
7440-50-8	Copper	8.7	109.	100.	101.	110.	101.	0.2	EPA 6010B	10-10-00	10-17-00	Shannon
7439-89-6	Iron	12700	13600	600.	NC *&	13600	NC *&	NC	EPA 6010B	10-10-00	10-17-00	Shannon
7440-09-7	Potassium	1180	2050	1000	86.7	2310	113.	11.9	EPA 6010B	10-10-00	10-17-00	Shannon
7439-95-4	Magnesium	2190	3650	1500	97.2	3790	107.	3.8	EPA 6010B	10-10-00	10-17-00	Shannon
7439-96-5	Manganese	481.	544.	100.	NC *&	549.	NC *&	NC	EPA 6010B	10-10-00	10-17-00	Shannon
7440-23-5	Sodium	83.1	1460	1500	91.5	1460	92.1	0.7	EPA 6010B	10-10-00	10-17-00	Shannon
7440-02-0	Nickel	17.3	114.	100.	96.8	114.	96.9	0.1	EPA 6010B	10-10-00	10-17-00	Shannon
7439-92-1	Lead	16.6	114.	100.	97.7	112.	95.4	2.0	EPA 6010B	10-10-00	10-17-00	Shannon
7782-49-2	Selenium	u	88.0	100.	88.0	89.8	89.8	2.0	EPA 6010B	10-10-00	10-17-00	Shannon
7440-36-0	Antimony	u	31.8	100.	31.8 *	27.4	27.4 *	14.7	EPA 6010B	10-10-00	10-17-00	Shannon
7440-28-0	Thallium	u	94.7	100.	94.7	95.3	95.3	0.6	EPA 6010B	10-10-00	10-17-00	Shannon
7440-62-2	Vanadium	11.2	110.	100.	99.0	111.	99.8	0.8	EPA 6010B	10-10-00	10-17-00	Shannon
7440-66-6	Zinc	81.6	137.	100.	55.6 *	137.	55.4 *	0.2	EPA 6010B	10-10-00	10-17-00	Shannon

%Rec: Percent of the spike recovered from the matrix

u: Below Method Detection Limit

NC: Not Calculable

* Indicates the value is outside control limits (80-120) for %Rec.

*& = High analyte concentration prevented accurate determination of the matrix spike recovery.

J: Estimated concentration below laboratory reporting limit
QC Sample: M000992-004

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C199

DEPARTMENT OF THE ARMY
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Laboratory Control Sample

LCS ICP Sample ID: WG6671-2
LCS GFAA Sample ID:
LCS CVAA Sample ID:

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	LCS Result	True Value	%Rec	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-38-2	Arsenic	101.	100.	101.	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-22-4	Silver	20.4	20.0	102.	1.0	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7429-90-5	Aluminum	589.	600.	98.1	18.	6.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-39-3	Barium	101.	100.	101.	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-41-7	Beryllium	40.2	40.0	101.	0.40	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-70-2	Calcium	1540	1500	103.	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-43-9	Cadmium	51.1	50.0	102.	0.50	0.1	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-48-4	Cobalt	103.	100.	103.	3.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-47-3	Chromium	101.	100.	101.	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-50-8	Copper	100.	100.	100.	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-89-6	Iron	606.	600.	101.	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-09-7	Potassium	980.	1000	98.0	60.	20	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-95-4	Magnesium	1490	1500	99.2	24.	8.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-96-5	Manganese	104.	100.	104.	0.80	0.2	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-23-5	Sodium	1390	1500	92.5	80.	40	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-02-0	Nickel	102.	100.	102.	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7439-92-1	Lead	102.	100.	102.	2.0	0.4	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7782-49-2	Selenium	95.7	100.	95.7	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-36-0	Antimony	95.1	100.	95.1	4.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-28-0	Thallium	101.	100.	101.	6.0	1.	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-62-2	Vanadium	103.	100.	103.	4.0	0.8	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon
7440-66-6	Zinc	105.	100.	105.	2.0	0.6	EPA 6010B	WG6671	10-10-00	10-17-00	Shannon

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C200

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Method Blank

Method Blank ICP Sample ID:
Method Blank GFAA Sample ID:
Method Blank CVAA Sample ID: WG6639-1

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	u	0.0030	0.0005	EPA 7471	WG6639	10-05-00	10-06-00	Duffy

u: Below Sample Detection Limit (MDL x Dilution)

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C201.

DEPARTMENT OF THE ARMY
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Laboratory Matrix Duplicate

Matrix Duplicate ICP Sample ID:
Matrix Duplicate GFAA Sample ID:
Matrix Duplicate CVAA Sample ID: WG6639-3

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	Sample Result	Dup Result	RPD	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	0.016	0.015	6.5	0.0030	0.0005	EPA 7471	WG6639	10-05-00	10-06-00	Duffy

QC Sample: M000973-002

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C202

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Chemistry Quality Assurance Branch

Matrix Spike, Matrix Spike Duplicate

MS ICP Sample ID:
MS GFAA Sample ID:
MS CVAA Sample ID: WG6639-4

MSD ICP Sample ID:
MSD GFAA Sample ID:
MSD CVAA Sample ID: WG6639-5

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	Sample Result	MS Conc	Spike Added	%Rec MS	MSD Conc	%Rec MSD	RPD	Method	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	0.016	0.211	0.200	97.7	0.212	98.2	0.5	EPA 7471	10-05-00	10-06-00	Duffy

%Rec: Percent of the spike recovered from the matrix

QC Sample: M000973-002

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C203

DEPARTMENT OF THE ARMY
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Laboratory Control Sample

LCS ICP Sample ID:
LCS GFAA Sample ID:
LCS CVAA Sample ID: WG6639-2

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	LCS Result	True Value	%Rec	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	0.205	0.200	103.	0.0030	0.0005	EPA 7471	WG6639	10-05-00	10-06-00	Duffy

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C204

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Method Blank

Method Blank ICP Sample ID:
Method Blank GFAA Sample ID:
Method Blank CVAA Sample ID: WG6640-1

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	u	0.0030	0.0005	EPA 7471	WG6640	10-05-00	10-06-00	Duffy

u: Below Sample Detection Limit (MDL x Dilution)

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C205

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Laboratory Matrix Duplicate

Matrix Duplicate ICP Sample ID:
Matrix Duplicate GFAA Sample ID:
Matrix Duplicate CVAA Sample ID: WG6640-3

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	Sample Result	Dup Result	RPD	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	0.010	0.0095	5.1	0.0030	0.0005	EPA 7471	WG6640	10-05-00	10-06-00	Duffy

QC Sample: M000987-001

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C 206

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Matrix Spike, Matrix Spike Duplicate

MS ICP Sample ID:
MS GFAA Sample ID:
MS CVAA Sample ID: WG6640-4

MSD ICP Sample ID:
MSD GFAA Sample ID:
MSD CVAA Sample ID: WG6640-5

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	Sample Result	MS Conc	Spike Added	%Rec MS	MSD Conc	%Rec MSD	RPD	Method	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	0.010	0.209	0.200	99.5	0.208	99.0	0.5	EPA 7471	10-05-00	10-06-00	Duffy

%Rec: Percent of the spike recovered from the matrix

QC Sample: M000987-001

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C207

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Laboratory Control Sample

LCS ICP Sample ID:
LCS GFAA Sample ID:
LCS CVAA Sample ID: WG6640-2

Matrix: Soil
Units: mg/kg

CAS Number	Analyte	LCS Result	True Value	%Rec	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	0.205	0.200	103.	0.0030	0.0005	EPA 7471	WG6640	10-05-00	10-06-00	Duffy

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C208

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB2017
Sample ID: M000975-003

Date Sampled: 09/18/00
Date Received: 09/20/00
Date Reported: 10/12/00

Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	1	290	90.	30	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-36-0	Antimony	1	u	20.	6.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-38-2	Arsenic	1	u	15.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-39-3	Barium	1	39.1	2.5	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-41-7	Beryllium	1	u	2.0	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-43-9	Cadmium	1	u	2.5	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-70-2	Calcium	1	184000	300	100	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-47-3	Chromium	1	u	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-48-4	Cobalt	1	u	15.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-50-8	Copper	1	u	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-89-6	Iron	1	410	120	40	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-92-1	Lead	1	u	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-95-4	Magnesium	1	41100	120	40	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-96-5	Manganese	1	54.8	4.0	1.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-02-0	Nickel	1	4.7 JB	10.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-09-7	Potassium	1	1810	300	100	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7782-49-2	Selenium	1	u	20.	4.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-22-4	Silver	1	u	5.0	1.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-23-5	Sodium	1	4930	400	200	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-28-0	Thallium	1	u	30.	6.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-62-2	Vanadium	1	u	20.	4.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-66-6	Zinc	1	u	10.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

B: Analyte also present in the method blank.

Quality Assurance / Quality Control

ICP Method Blank ID: WG6580-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LCS ID: WG6580-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP LD ID: WG6580-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MS ID: WG6580-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP MSD ID: WG6580-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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C209

DEPARTMENT OF THE ARMY
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Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB2017
Sample ID: M000975-003
Date Sampled: 09/18/00
Date Received: 09/20/00
Date Reported: 10/11/00
Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	u	0.050	0.01	EPA 7470	WG6637	10-05-00	10-06-00	Duffy

u: Below Sample Detection Limit (MDL x Dilution)

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6637-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6637-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6637-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6637-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6637-5

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C210

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB2019
Sample ID: M000975-006

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Reported: 10/12/00

Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	1	150	90.	30	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-36-0	Antimony	1	u	20.	6.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-38-2	Arsenic	1	u	15.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-39-3	Barium	1	34.9	2.5	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-41-7	Beryllium	1	u	2.0	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-43-9	Cadmium	1	u	2.5	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-70-2	Calcium	1	215000	300	100	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-47-3	Chromium	1	u	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-48-4	Cobalt	1	u	15.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-50-8	Copper	1	u	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-89-6	Iron	1	103 ppm 480	120	40	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-92-1	Lead	1	u	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-95-4	Magnesium	1	45400	120	40	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-96-5	Manganese	1	236.	4.0	1.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-02-0	Nickel	1	9.2 JB	10.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-09-7	Potassium	1	1400	300	100	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7782-49-2	Selenium	1	u	20.	4.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-22-4	Silver	1	u	5.0	1.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-23-5	Sodium	1	4960	400	200	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-28-0	Thallium	1	u	30.	6.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-62-2	Vanadium	1	u	20.	4.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-66-6	Zinc	1	7.7 J	10.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

B: Analyte also present in the method blank.

Quality Assurance / Quality Control

ICP LCS ID: WG6580-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP MS ID: WG6580-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP Method Blank ID: WG6580-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LD ID: WG6580-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MSD ID: WG6580-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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C 211

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB2019
Sample ID: M000975-006

Date Sampled: 09/19/00
Date Received: 09/21/00
Date Reported: 10/11/00

Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	u	0.050	0.01	EPA 7470	WG6637	10-05-00	10-06-00	Duffy

u: Below Sample Detection Limit (MDL x Dilution)

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6637-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6637-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6637-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6637-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6637-5

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C212

DEPARTMENT OF THE ARMY
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Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AA3012 (DISSOLVED)
Sample ID: M000992-002

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Reported: 10/20/00

Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	1	u	90.	30	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-36-0	Antimony	1	u	20.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-38-2	Arsenic	1	u	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-39-3	Barium	1	22.6	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-41-7	Beryllium	1	u	2.0	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-43-9	Cadmium	1	0.82 J	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-70-2	Calcium	1	260000	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-47-3	Chromium	1	u	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-48-4	Cobalt	1	5.9 J	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-50-8	Copper	1	u	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-89-6	Iron	1	63. J	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-92-1	Lead	1	u	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-95-4	Magnesium	1	19100	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-96-5	Manganese	1	2340	4.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-02-0	Nickel	1	8.9 J	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-09-7	Potassium	1	2260	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7782-49-2	Selenium	1	u	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-22-4	Silver	1	u	5.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-23-5	Sodium	1	6270	400	200	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-62-2	Vanadium	1	u	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-66-6	Zinc	1	23.	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

Sample AA3012 is reported in TNT Area A package according to IT lab.

Quality Assurance / Quality Control

ICP Method Blank ID: WG6617-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LCS ID: WG6617-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP LD ID: WG6617-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MS ID: WG6617-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP MSD ID: WG6617-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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C213

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AA3012 (DISSOLVED)
Sample ID: M000992-002
Date Sampled: 09/26/00
Date Received: 09/27/00
Date Reported: 10/20/00
Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-28-0	Thallium	1	u	2.0	0.6	EPA 7841	WG6722	10-17-00	10-20-00	J. Bond

u: Below Sample Detection Limit (MDL x Dilution)

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: WG6722-1
CVAA Method Blank ID: NA

ICP LCS ID: NA
GFAA LCS ID: WG6722-2
CVAA LCS ID: NA

ICP LD ID: NA
GFAA LD ID: WG6722-3
CVAA LD ID: NA

ICP MS ID: NA
GFAA MS ID: WG6722-4
CVAA MS ID: NA

ICP MSD ID: NA
GFAA MSD ID: WG6722-5
CVAA MSD ID: NA

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C214

DEPARTMENT OF THE ARMY
Corps of Engineers
Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AA3012 (DISSOLVED)
Sample ID: M000992-002

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Reported: 10/11/00

Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	u	0.050	0.01	EPA 7470	WG6637	10-05-00	10-06-00	Duffy

u: Below Sample Detection Limit (MDL x Dilution)

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6637-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6637-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6637-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6637-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6637-5

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C215

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AA3012
Sample ID: M000992-003

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Reported: 10/20/00

Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	1	1620	90.	30	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-36-0	Antimony	1	u	20.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-38-2	Arsenic	1	u	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-39-3	Barium	1	31.2	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-41-7	Beryllium	1	u	2.0	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-43-9	Cadmium	1	1.1 J	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-70-2	Calcium	1	272000	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-47-3	Chromium	1	2.3 J	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-48-4	Cobalt	1	7.5 J	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-50-8	Copper	1	6.0 J	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-89-6	Iron	1	3860	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-92-1	Lead	1	2.0 J	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-95-4	Magnesium	1	25400	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-96-5	Manganese	1	2080	4.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-02-0	Nickel	1	18.	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-09-7	Potassium	1	2540	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7782-49-2	Selenium	1	u	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-22-4	Silver	1	u	5.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-23-5	Sodium	1	6550	400	200	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-62-2	Vanadium	1	5.9 J	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-66-6	Zinc	1	89.9	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

Quality Assurance / Quality Control

ICP Method Blank ID: WG6617-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LCS ID: WG6617-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP LD ID: WG6617-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MS ID: WG6617-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP MSD ID: WG6617-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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C216

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AA3012
Sample ID: M000992-003

Date Sampled: 09/26/00
Date Received: 09/27/00
Date Reported: 10/20/00

Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-28-0	Thallium	1	u	2.0	0.6	EPA 7841	WG6722	10-17-00	10-20-00	J. Bond

u: Below Sample Detection Limit (MDL x Dilution)

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: WG6722-1
CVAA Method Blank ID: NA

ICP LCS ID: NA
GFAA LCS ID: WG6722-2
CVAA LCS ID: NA

ICP LD ID: NA
GFAA LD ID: WG6722-3
CVAA LD ID: NA

ICP MS ID: NA
GFAA MS ID: WG6722-4
CVAA MS ID: NA

ICP MSD ID: NA
GFAA MSD ID: WG6722-5
CVAA MSD ID: NA

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C217

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AA3012
Sample ID: M000992-003
Date Sampled: 09/26/00
Date Received: 09/27/00
Date Reported: 10/11/00
Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	0.019 J	0.050	0.01	EPA 7470	WG6637	10-05-00	10-06-00	Duffy

J: Estimated concentration below laboratory reporting limit.

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6637-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6637-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6637-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6637-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6637-5

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C213

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB3012 (DISSOLVED)
Sample ID: M000997-002
Date Sampled: 09/27/00
Date Received: 09/28/00
Date Reported: 10/20/00
Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	1	u	90.	30	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-36-0	Antimony	1	u	20.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-38-2	Arsenic	1	u	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-39-3	Barium	1	16.7	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-41-7	Beryllium	1	u	2.0	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-43-9	Cadmium	1	u	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-70-2	Calcium	1	140000	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-47-3	Chromium	1	u	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-48-4	Cobalt	1	u	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-50-8	Copper	1	u	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-89-6	Iron	1	u	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-92-1	Lead	1	u	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-95-4	Magnesium	1	12000	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-96-5	Manganese	1	119.	4.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-02-0	Nickel	1	u	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-09-7	Potassium	1	4790	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7782-49-2	Selenium	1	u	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-22-4	Silver	1	u	5.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-23-5	Sodium	1	2600	400	200	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-28-0	Thallium	1	u	30.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-62-2	Vanadium	1	u	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-66-6	Zinc	1	16.	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

Quality Assurance / Quality Control

ICP Method Blank ID: WG6617-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LCS ID: WG6617-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP LD ID: WG6617-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MS ID: WG6617-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP MSD ID: WG6617-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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C219

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB3012 (DISSOLVED)
Sample ID: M000997-002

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Reported: 10/11/00

Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	u	0.050	0.01	EPA 7470	WG6637	10-05-00	10-06-00	Duffy

u: Below Sample Detection Limit (MDL x Dilution)

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6637-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6637-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6637-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6637-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6637-5

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C 220

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB3012
Sample ID: M000997-003

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Reported: 10/20/00

Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	1	3780	90.	30	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-36-0	Antimony	1	u	20.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-38-2	Arsenic	1	u	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-39-3	Barium	1	44.4	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-41-7	Beryllium	1	u	2.0	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-43-9	Cadmium	1	u	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-70-2	Calcium	1	194000	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-47-3	Chromium	1	6.3 J	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-48-4	Cobalt	1	6.3 J	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-50-8	Copper	1	13.	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-89-6	Iron	1	8060	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-92-1	Lead	1	15.	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-95-4	Magnesium	1	19200	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-96-5	Manganese	1	356.	4.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-02-0	Nickel	1	17.	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-09-7	Potassium	1	6970	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7782-49-2	Selenium	1	u	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-22-4	Silver	1	u	5.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-23-5	Sodium	1	3430	400	200	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-28-0	Thallium	1	u	30.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-62-2	Vanadium	1	13. J	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-66-6	Zinc	1	73.3	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit.

Quality Assurance / Quality Control

ICP Method Blank ID: WG6617-1
GFAA Method Blank ID: NA
CVAA Method Blank ID: NA

ICP LCS ID: WG6617-2
GFAA LCS ID: NA
CVAA LCS ID: NA

ICP LD ID: WG6617-3
GFAA LD ID: NA
CVAA LD ID: NA

ICP MS ID: WG6617-4
GFAA MS ID: NA
CVAA MS ID: NA

ICP MSD ID: WG6617-5
GFAA MSD ID: NA
CVAA MSD ID: NA

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C221

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Total Metals

Project Name: Former Plumbrook Ordnance Works - TNT Area C
Project Number: 6008
Client Sample ID: AB3012
Sample ID: M000997-003

Date Sampled: 09/27/00
Date Received: 09/28/00
Date Reported: 10/11/00

Matrix: Water
Units: ug/L

CAS Number	Analyte	Dilution	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	1	u	0.050	0.01	EPA 7470	WG6637	10-05-00	10-06-00	Duffy

u: Below Sample Detection Limit (MDL x Dilution)

Quality Assurance / Quality Control

ICP Method Blank ID: NA
GFAA Method Blank ID: NA
CVAA Method Blank ID: WG6637-1

ICP LCS ID: NA
GFAA LCS ID: NA
CVAA LCS ID: WG6637-2

ICP LD ID: NA
GFAA LD ID: NA
CVAA LD ID: WG6637-3

ICP MS ID: NA
GFAA MS ID: NA
CVAA MS ID: WG6637-4

ICP MSD ID: NA
GFAA MSD ID: NA
CVAA MSD ID: WG6637-5

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C22

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Method Blank

Method Blank ICP Sample ID: WG6580-1
Method Blank GFAA Sample ID:
Method Blank CVAA Sample ID:

Matrix: Water
Units: ug/L

CAS Number	Analyte	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	u	90.	30	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-36-0	Antimony	u	20.	6.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-38-2	Arsenic	u	15.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-39-3	Barium	u	2.5	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-41-7	Beryllium	u	2.0	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-43-9	Cadmium	u	2.5	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-70-2	Calcium	u	300	100	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-47-3	Chromium	u	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-48-4	Cobalt	u	15.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-50-8	Copper	u	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-89-6	Iron	u	120	40	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-92-1	Lead	u	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-95-4	Magnesium	u	120	40	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-96-5	Manganese	u	4.0	1.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-02-0	Nickel	3.3 J	10.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-09-7	Potassium	u	300	100	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7782-49-2	Selenium	u	20.	4.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-22-4	Silver	u	5.0	1.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-23-5	Sodium	u	400	200	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-28-0	Thallium	u	30.	6.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-62-2	Vanadium	u	20.	4.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-66-6	Zinc	u	10.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

J: Estimated concentration below laboratory reporting limit

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C223

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Laboratory Matrix Duplicate

Matrix Duplicate ICP Sample ID: WG6580-3
Matrix Duplicate GFAA Sample ID:
Matrix Duplicate CVAA Sample ID:

Matrix: Water
Units: ug/L

CAS Number	Analyte	Sample Result	Dup Result	RPD	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	66. J	55.5 J	17.3	90.	30	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-36-0	Antimony	u	u	NC	20.	6.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-38-2	Arsenic	u	u	NC	15.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-39-3	Barium	24.1	24.1	0.0	2.5	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-41-7	Beryllium	u	u	NC	2.0	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-43-9	Cadmium	u	u	NC	2.5	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-70-2	Calcium	37800	37900	0.3	300	100	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-47-3	Chromium	u	u	NC	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-48-4	Cobalt	u	u	NC	15.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-50-8	Copper	u	u	NC	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-89-6	Iron	153.	169.	9.9	120	40	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-92-1	Lead	u	u	NC	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-95-4	Magnesium	9230	9240	0.1	120	40	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-96-5	Manganese	46.6	46.9	0.6	4.0	1.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-02-0	Nickel	u	u	NC	10.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-09-7	Potassium	1970	1990	1.0	300	100	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7782-49-2	Selenium	u	u	NC	20.	4.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-22-4	Silver	u	u	NC	5.0	1.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-23-5	Sodium	9870	9850	0.2	400	200	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-28-0	Thallium	u	u	NC	30.	6.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-62-2	Vanadium	u	u	NC	20.	4.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-66-6	Zinc	u	4.3 J	NC	10.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)
NC: Not Calculable
J: Estimated concentration below laboratory reporting limit
B: Analyte also present in the method blank.

QC Sample: M000976-003

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C224

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Matrix Spike, Matrix Spike Duplicate

MS ICP Sample ID: WG6580-4 MSD ICP Sample ID: WG6580-5 Matrix: Water
MS GFAA Sample ID: MSD GFAA Sample ID: Units: ug/L
MS CVAA Sample ID: MSD CVAA Sample ID:

CAS Number	Analyte	Sample Result	MS Conc	Spike Added	%Rec MS	MSD Conc	%Rec MSD	RPD	Method	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	66. J	6100	6000	101.	6090	100.	0.1	EPA 6010B	09-27-00	10-11-00	Shannon
7440-36-0	Antimony	u	1010	1000	101.	1010	101.	0.3	EPA 6010B	09-27-00	10-11-00	Shannon
7440-38-2	Arsenic	u	1050	1000	105.	1050	105.	0.2	EPA 6010B	09-27-00	10-11-00	Shannon
7440-39-3	Barium	24.1	1060	1000	104.	1060	104.	0.1	EPA 6010B	09-27-00	10-11-00	Shannon
7440-41-7	Beryllium	u	412.	400.	103.	410.	102.	0.4	EPA 6010B	09-27-00	10-11-00	Shannon
7440-43-9	Cadmium	u	512.	500.	102.	511.	102.	0.1	EPA 6010B	09-27-00	10-11-00	Shannon
7440-70-2	Calcium	37800	53500	15000	104.	53200	103.	0.5	EPA 6010B	09-27-00	10-11-00	Shannon
7440-47-3	Chromium	u	1010	1000	101.	1010	101.	0.1	EPA 6010B	09-27-00	10-11-00	Shannon
7440-48-4	Cobalt	u	1030	1000	103.	1030	103.	0.1	EPA 6010B	09-27-00	10-11-00	Shannon
7440-50-8	Copper	u	1040	1000	104.	1040	104.	0.2	EPA 6010B	09-27-00	10-11-00	Shannon
7439-89-6	Iron	153.	6240	6000	101.	6240	102.	0.0	EPA 6010B	09-27-00	10-11-00	Shannon
7439-92-1	Lead	u	1030	1000	103.	1030	103.	0.0	EPA 6010B	09-27-00	10-11-00	Shannon
7439-95-4	Magnesium	9230	24600	15000	103.	24500	102.	0.4	EPA 6010B	09-27-00	10-11-00	Shannon
7439-96-5	Manganese	46.6	1100	1000	105.	1090	105.	0.1	EPA 6010B	09-27-00	10-11-00	Shannon
7440-02-0	Nickel	u	1030	1000	103.	1030	103.	0.0	EPA 6010B	09-27-00	10-11-00	Shannon
7440-09-7	Potassium	1970	12000	10000	100.	12100	101.	0.5	EPA 6010B	09-27-00	10-11-00	Shannon
7782-49-2	Selenium	u	1030	1000	103.	1030	103.	0.3	EPA 6010B	09-27-00	10-11-00	Shannon
7440-22-4	Silver	u	210.	200.	105.	209.	105.	0.2	EPA 6010B	09-27-00	10-11-00	Shannon
7440-23-5	Sodium	9870	25400	15000	104.	25300	103.	0.3	EPA 6010B	09-27-00	10-11-00	Shannon
7440-28-0	Thallium	u	1040	1000	104.	1040	104.	0.2	EPA 6010B	09-27-00	10-11-00	Shannon
7440-62-2	Vanadium	u	1030	1000	103.	1030	103.	0.1	EPA 6010B	09-27-00	10-11-00	Shannon
7440-66-6	Zinc	u	1030	1000	103.	1030	103.	0.2	EPA 6010B	09-27-00	10-11-00	Shannon

%Rec: Percent of the spike recovered from the matrix

u: Below Method Detection Limit

B: Analyte also present in method blank

J: Estimated concentration below laboratory reporting limit
QC Sample: M000976-003

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C225

DEPARTMENT OF THE ARMY
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Laboratory Control Sample

LCS ICP Sample ID: WG6580-2
LCS GFAA Sample ID:
LCS CVAA Sample ID:

Matrix: Water
Units: ug/L

CAS Number	Analyte	LCS Result	True Value	%Rec	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	5920	6000	98.7	90.	30	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-36-0	Antimony	994.	1000	99.4	20.	6.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-38-2	Arsenic	1040	1000	104.	15.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-39-3	Barium	1030	1000	103.	2.5	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-41-7	Beryllium	405.	400.	101.	2.0	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-43-9	Cadmium	511.	500.	102.	2.5	0.5	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-70-2	Calcium	14700	15000	98.0	300	100	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-47-3	Chromium	1000	1000	100.	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-48-4	Cobalt	1030	1000	103.	15.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-50-8	Copper	1020	1000	102.	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-89-6	Iron	6020	6000	100.	120	40	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-92-1	Lead	1030	1000	103.	10.	2.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-95-4	Magnesium	15200	15000	101.	120	40	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7439-96-5	Manganese	1040	1000	104.	4.0	1.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-02-0	Nickel	1020	1000	102.	10.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-09-7	Potassium	9960	10000	99.6	300	100	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7782-49-2	Selenium	1030	1000	103.	20.	4.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-22-4	Silver	208.	200.	104.	5.0	1.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-23-5	Sodium	14000	15000	93.1	400	200	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-28-0	Thallium	1040	1000	104.	30.	6.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-62-2	Vanadium	1030	1000	103.	20.	4.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon
7440-66-6	Zinc	1030	1000	103.	10.	3.	EPA 6010B	WG6580	09-27-00	10-11-00	Shannon

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C226

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Method Blank

Method Blank ICP Sample ID: WG6617-1
Method Blank GFAA Sample ID:
Method Blank CVAA Sample ID:

Matrix: Water
Units: ug/L

CAS Number	Analyte	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	u	90.	30	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-36-0	Antimony	u	20.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-38-2	Arsenic	u	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-39-3	Barium	u	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-41-7	Beryllium	u	2.0	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-43-9	Cadmium	u	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-70-2	Calcium	u	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-47-3	Chromium	u	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-48-4	Cobalt	u	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-50-8	Copper	u	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-89-6	Iron	u	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-92-1	Lead	u	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-95-4	Magnesium	u	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-96-5	Manganese	u	4.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-02-0	Nickel	u	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-09-7	Potassium	u	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7782-49-2	Selenium	u	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-22-4	Silver	u	5.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-23-5	Sodium	u	400	200	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-28-0	Thallium	u	30.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-62-2	Vanadium	u	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-66-6	Zinc	u	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)

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C227

DEPARTMENT OF THE ARMY
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Laboratory Matrix Duplicate

Matrix Duplicate ICP Sample ID: WG6617-3
Matrix Duplicate GFAA Sample ID:
Matrix Duplicate CVAA Sample ID:

Matrix: Water
Units: ug/L

CAS Number	Analyte	Sample Result	Dup Result	RPD	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	u	u	NC	90.	30	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-36-0	Antimony	u	u	NC	20.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-38-2	Arsenic	u	u	NC	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-39-3	Barium	16.7	16.4	1.8	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-41-7	Beryllium	u	u	NC	2.0	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-43-9	Cadmium	u	u	NC	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-70-2	Calcium	140000	140000	0.0	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-47-3	Chromium	u	u	NC	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-48-4	Cobalt	u	u	NC	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-50-8	Copper	u	2.5 J	NC	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-89-6	Iron	u	u	NC	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-92-1	Lead	u	u	NC	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-95-4	Magnesium	12000	12000	0.0	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-96-5	Manganese	119.	119.	0.0	4.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-02-0	Nickel	u	u	NC	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-09-7	Potassium	4790	4790	0.0	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7782-49-2	Selenium	u	u	NC	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-22-4	Silver	u	u	NC	5.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-23-5	Sodium	2650	2620	1.1	400	200	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-28-0	Thallium	u	u	NC	30.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-62-2	Vanadium	u	u	NC	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-66-6	Zinc	16.5	16.6	0.6	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon

u: Below Sample Detection Limit (MDL x Dilution)
NC: Not Calculable
J: Estimated concentration below laboratory reporting limit

QC Sample: M000997-002

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C225

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Matrix Spike, Matrix Spike Duplicate

MS ICP Sample ID: WG6617-4 MSD ICP Sample ID: WG6617-5 Matrix: Water
MS GFAA Sample ID: MSD GFAA Sample ID: Units: ug/L
MS CVAA Sample ID: MSD CVAA Sample ID:

CAS Number	Analyte	Sample Result	MS Conc	Spike Added	%Rec MS	MSD Conc	%Rec MSD	RPD	Method	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	u	6070	6000	101.	6070	101.	0.0	EPA 6010B	10-04-00	10-17-00	Shannon
7440-36-0	Antimony	u	1010	1000	101.	1010	101.	0.2	EPA 6010B	10-04-00	10-17-00	Shannon
7440-38-2	Arsenic	u	1070	1000	107.	1060	106.	0.5	EPA 6010B	10-04-00	10-17-00	Shannon
7440-39-3	Barium	16.7	1050	1000	104.	1060	104.	0.1	EPA 6010B	10-04-00	10-17-00	Shannon
7440-41-7	Beryllium	u	409.	400.	102.	407.	102.	0.5	EPA 6010B	10-04-00	10-17-00	Shannon
7440-43-9	Cadmium	u	510.	500.	102.	509.	102.	0.2	EPA 6010B	10-04-00	10-17-00	Shannon
7440-70-2	Calcium	140000	156000	15000	105.	156000	105.	0.0	EPA 6010B	10-04-00	10-17-00	Shannon
7440-47-3	Chromium	u	1010	1000	101.	1010	101.	0.4	EPA 6010B	10-04-00	10-17-00	Shannon
7440-48-4	Cobalt	u	1040	1000	104.	1030	103.	0.1	EPA 6010B	10-04-00	10-17-00	Shannon
7440-50-8	Copper	u	1040	1000	104.	1040	104.	0.1	EPA 6010B	10-04-00	10-17-00	Shannon
7439-89-6	Iron	u	6110	6000	102.	6100	102.	0.3	EPA 6010B	10-04-00	10-17-00	Shannon
7439-92-1	Lead	u	1040	1000	104.	1040	104.	0.1	EPA 6010B	10-04-00	10-17-00	Shannon
7439-95-4	Magnesium	12000	27400	15000	103.	27300	102.	0.0	EPA 6010B	10-04-00	10-17-00	Shannon
7439-96-5	Manganese	119.	1170	1000	105.	1170	105.	0.2	EPA 6010B	10-04-00	10-17-00	Shannon
7440-02-0	Nickel	u	1020	1000	102.	1020	102.	0.0	EPA 6010B	10-04-00	10-17-00	Shannon
7440-09-7	Potassium	4790	14700	10000	98.6	14700	99.0	0.2	EPA 6010B	10-04-00	10-17-00	Shannon
7782-49-2	Selenium	u	1040	1000	104.	1040	104.	0.1	EPA 6010B	10-04-00	10-17-00	Shannon
7440-22-4	Silver	u	213.	200.	106.	212.	106.	0.3	EPA 6010B	10-04-00	10-17-00	Shannon
7440-23-5	Sodium	2650	16600	15000	93.3	16600	93.2	0.1	EPA 6010B	10-04-00	10-17-00	Shannon
7440-28-0	Thallium	u	1040	1000	104.	1040	104.	0.1	EPA 6010B	10-04-00	10-17-00	Shannon
7440-62-2	Vanadium	u	1040	1000	104.	1040	104.	0.4	EPA 6010B	10-04-00	10-17-00	Shannon
7440-66-6	Zinc	16.5	1040	1000	103.	1040	102.	0.4	EPA 6010B	10-04-00	10-17-00	Shannon

%Rec: Percent of the spike recovered from the matrix

u: Below Method Detection Limit

QC Sample: M000997-002

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C229

DEPARTMENT OF THE ARMY
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Chemistry Quality Assurance Branch

Laboratory Control Sample

LCS ICP Sample ID: WG6617-2
LCS GFAA Sample ID:
LCS CVAA Sample ID:

Matrix: Water
Units: ug/L

CAS Number	Analyte	LCS Result	True Value	%Rec	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7429-90-5	Aluminum	6090	6000	101.	90.	30	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-36-0	Antimony	1050	1000	105.	20.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-38-2	Arsenic	1040	1000	104.	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-39-3	Barium	1050	1000	105.	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-41-7	Beryllium	414.	400.	103.	2.0	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-43-9	Cadmium	522.	500.	104.	2.5	0.5	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-70-2	Calcium	14800	15000	98.6	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-47-3	Chromium	1020	1000	102.	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-48-4	Cobalt	1030	1000	103.	15.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-50-8	Copper	1040	1000	104.	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-89-6	Iron	6110	6000	102.	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-92-1	Lead	1030	1000	103.	10.	2.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-95-4	Magnesium	15300	15000	102.	120	40	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7439-96-5	Manganese	1050	1000	105.	4.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-02-0	Nickel	1040	1000	104.	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-09-7	Potassium	10000	10000	100.	300	100	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7782-49-2	Selenium	1030	1000	103.	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-22-4	Silver	207.	200.	103.	5.0	1.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-23-5	Sodium	14100	15000	93.8	400	200	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-28-0	Thallium	1040	1000	104.	30.	6.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-62-2	Vanadium	1040	1000	104.	20.	4.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon
7440-66-6	Zinc	1040	1000	104.	10.	3.	EPA 6010B	WG6617	10-04-00	10-17-00	Shannon

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C 230

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Chemistry Quality Assurance Branch

Method Blank

Method Blank ICP Sample ID:
Method Blank GFAA Sample ID: WG6722-1
Method Blank CVAA Sample ID:

Matrix: Water
Units: ug/L

CAS Number	Analyte	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-28-0	Thallium	u	2.0	0.6	EPA 7841	WG6722	10-17-00	10-20-00	J. Bond

u: Below Sample Detection Limit (MDL x Dilution)

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Laboratory Matrix Duplicate

Matrix Duplicate ICP Sample ID:
Matrix Duplicate GFAA Sample ID: WG6722-3
Matrix Duplicate CVAA Sample ID:

Matrix: Water
Units: ug/L

CAS Number	Analyte	Sample Result	Dup Result	RPD	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-28-0	Thallium	u	u	NC	2.0	0.6	EPA 7841	WG6722	10-17-00	10-20-00	J. Bond

u: Below Sample Detection Limit (MDL x Dilution)
NC: Not Calculable

QC Sample: M000992-002

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Matrix Spike, Matrix Spike Duplicate

MS ICP Sample ID:
MS GFAA Sample ID: WG6722-4
MS CVAA Sample ID:

MSD ICP Sample ID:
MSD GFAA Sample ID: WG6722-5
MSD CVAA Sample ID:

Matrix: Water
Units: ug/L

CAS Number	Analyte	Sample Result	MS Conc	Spike Added	%Rec MS	MSD Conc	%Rec MSD	RPD	Method	Date Digested	Date Analyzed	Analyst
7440-28-0	Thallium	u	18.5	20.0	92.7	18.3	91.6	1.2	EPA 6010B	10-17-00	10-20-00	J. Bond

%Rec: Percent of the spike recovered from the matrix

u: Below Method Detection Limit

QC Sample: M000992-002

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Laboratory Control Sample

LCS ICP Sample ID:
LCS GFAA Sample ID: WG6722-2
LCS CVAA Sample ID:

Matrix: Water
Units: ug/L

CAS Number	Analyte	LCS Result	True Value	%Rec	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7440-28-0	Thallium	20.7	20.0	103.	2.0	0.6	EPA 7841	WG6722	10-17-00	10-20-00	J. Bond

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Method Blank

Method Blank ICP Sample ID:
Method Blank GFAA Sample ID:
Method Blank CVAA Sample ID: WG6637-1

Matrix: Water
Units: ug/L

CAS Number	Analyte	Result	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	u	0.050	0.01	EPA 7470	WG6637	10-05-00	10-06-00	Duffy

u: Below Sample Detection Limit (MDL x Dilution)

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Laboratory Matrix Duplicate

Matrix Duplicate ICP Sample ID:
Matrix Duplicate GFAA Sample ID:
Matrix Duplicate CVAA Sample ID: WG6637-3

Matrix: Water
Units: ug/L

CAS Number	Analyte	Sample Result	Dup Result	RPD	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	u	u	NC	0.050	0.01	EPA 7470	WG6637	10-05-00	10-06-00	Duffy

u: Below Sample Detection Limit (MDL x Dilution)
NC: Not Calculable

QC Sample: M000997-002

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Matrix Spike, Matrix Spike Duplicate

MS ICP Sample ID:
MS GFAA Sample ID:
MS CVAA Sample ID: WG6637-4

MSD ICP Sample ID:
MSD GFAA Sample ID:
MSD CVAA Sample ID: WG6637-5

Matrix: Water
Units: ug/L

CAS Number	Analyte	Sample Result	MS Conc	Spike Added	%Rec MS	MSD Conc	%Rec MSD	RPD	Method	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	u	1.89	2.00	94.5	1.88	94.0	0.5	EPA 7470	10-05-00	10-06-00	Duffy

%Rec: Percent of the spike recovered from the matrix

u: Below Method Detection Limit

QC Sample: M000997-002

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Laboratory Control Sample

LCS ICP Sample ID:
LCS GFAA Sample ID:
LCS CVAA Sample ID: WG6637-2

Matrix: Water
Units: ug/L

CAS Number	Analyte	LCS Result	True Value	%Rec	Sample Quant Limit	Det Limit	Method	Batch ID	Date Digested	Date Analyzed	Analyst
7439-97-6	Mercury	2.03	2.00	102.	0.050	0.01	EPA 7470	WG6637	10-05-00	10-06-00	Duffy

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Explosives Sample Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Sampled:	09/27/00	Matrix:	Soil
Client Sample ID:	AB0428	Date Received:	09/28/00	Units:	mg/kg
Sample ID:	M000997-004	Date Extracted:	10/05/00	Dilution Factor:	1
Method:	SW-846 Method 8330	Date Dried:	09/28/00		
Batch ID:	WG6634	Date Analyzed:	10/25/00		
Analyst:	Schnitker	Date Reported:	12/26/00		

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	2.2	0.2
121-82-4	RDX	u	1.0	0.6
99-35-4	1,3,5-Trinitrobenzene	u	0.25	0.02
99-65-0	1,3-Dinitrobenzene	u	0.25	0.1
479-45-8	Tetryl	u	0.65	0.2
618-87-1	3,5-Dinitroaniline	u	0.65	0.08
98-95-3	Nitrobenzene	u	0.26	0.03
118-96-7	2,4,6-Trinitrotoluene	0.2 J	0.25	0.1
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	0.26	0.09
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.25	0.1
606-20-2	2,6-Dinitrotoluene	0.1 JC	0.26	0.02
121-14-2	2,4-Dinitrotoluene	0.44	0.25	0.04
88-72-2	2-Nitrotoluene	u	0.25	0.02
99-99-0	4-Nitrotoluene	u	0.25	0.04
99-08-1	3-Nitrotoluene	u	0.25	0.03

u: Below Method Detection Limit
J: Estimated concentration above Method Detection Limit but below Lab Reporting Limit.
C: Result not confirmed due to matrix interference.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (mg/kg)
3,4-Dinitrotoluene	97	71-122	1.25

Matrix Spike : WG6634-4
Laboratory Duplicate : WG6634-3
Laboratory Control Sample : WG6634-2
Matrix Spike Duplicate : WG6634-5
Method Blank : WG6634-1

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Explosives Sample Report

Project Name:	Former Plumbrook Ordnance Work				
Project Number:	6008	Date Sampled:	09/27/00	Matrix:	Soil
Client Sample ID:	AB0450	Date Received:	09/28/00	Units:	mg/kg
Sample ID:	M000997-005	Date Extracted:	10/05/00	Dilution Factor:	1
Method:	SW-846 Method 8330	Date Dried:	09/28/00		
Batch ID:	WG6634	Date Analyzed:	10/25/00		
Analyst:	Schnitker	Date Reported:	12/26/00		

CAS Number	Target Analyte	Result	Laboratory Reporting Limit	Method Detection Limit
2691-41-0	HMX	u	2.2	0.2
121-82-4	RDX	1.2 C	1.0	0.6
99-35-4	1,3,5-Trinitrobenzene	6.9 C	0.25	0.02
99-65-0	1,3-Dinitrobenzene	u	0.25	0.1
479-45-8	Tetryl	0.5 JC	0.65	0.2
618-87-1	3,5-Dinitroaniline	u	0.65	0.08
98-95-3	Nitrobenzene	u	0.26	0.03
118-96-7	2,4,6-Trinitrotoluene	2740 D	100	0.1
1946-51-0	4-Amino-2,6-Dinitrotoluene	u	100	0.09
355-72-78-2	2-Amino-4,6-Dinitrotoluene	u	0.25	0.1
606-20-2	2,6-Dinitrotoluene	u	0.26	0.02
121-14-2	2,4-Dinitrotoluene	1.7 C	0.25	0.04
88-72-2	2-Nitrotoluene	0.1 JC	0.25	0.02
99-99-0	4-Nitrotoluene	u	0.25	0.04
99-08-1	3-Nitrotoluene	u	0.25	0.03

D: Result is from a 1:400 dilution.
u: Below Method Detection Limit.
J: Estimated concentration above Method Detection Limit but below Lab Reporting Limit.
C: Result not confirmed due to matrix interference.

Laboratory Comments:

Quality Control

Surrogate Standard	Recovery (%)	Acceptable	Spike (mg/kg)
3,4-Dinitrotoluene	89	71-122	1.25

Matrix Spike : WG6634-4
Laboratory Duplicate : WG6634-3
Laboratory Control Sample : WG6634-2
Matrix Spike Duplicate : WG6634-5
Method Blank : WG6634-1

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