



Wayne

RAVENNA ARSENAL, INC.
8451 STATE ROUTE 5, RAVENNA, OHIO 44266-9297
TELEPHONE: (216) 358-7111 • FAX: (216) 297-3216

June 15, 1990

THRU: Contracting Officer's Representative
Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266-9297

TO: Commander
U.S. Army Armament, Munitions and Chemical Command
ATTN: AMSMC-ISE (Mr. Cyril Onewokae)
Rock Island, IL 61299-6000

Subject: Underground storage tanks project completion reports

Dear Sir:

Of the 17 registered underground storage tanks at Ravenna Army Ammunition Plant, nine were declared abandoned and were removed; three failed a tank tightness test and were removed; and five remain in service.

FY89 Environmental Restoration Project 5892910-007 (Clin 46AD, MOD 88) provided \$186,100 for the removal of twelve underground storage tanks (nine registered and three non-registered). FY90 Environmental Restoration Project 5902910-04 (Clin 46AE, MOD 92) provided \$94,000 to remove four underground storage tanks (three registered and one non-registered) which were found to be leaking by tank tightness tests.

All work on both projects has now been completed. A final report on removal of the leaking underground storage tanks has been received from contractor R & R International. A final report on the closure of the abandoned tanks has not yet been received from contractor Cardamone Construction Company. Cardamone is awaiting receipt of a copy of the permit to close these tanks from the State Fire Marshal's Office in order to complete their report. Both reports will be forwarded to your attention immediately upon our receipt of the completed report on the closure of the abandoned tanks.

The point of contact at this installation for this subject is Susan McCauslin, DSN 346-3220.

Sincerely,

RAVENNA ARSENAL, INC.



H.R. Cooper
Plant Engineer

HRC/SM/ade/90016

cc: N. Wulff
W. Carkido
S. McCauslin
File

Date August 24, 1989

QUOTATION RECAP

RAVENNA ARSENAL, INC.

Contract No. DAAA09-88-Z-0001
614-459-2050

NB
1. HAVENS AND EMERSON, INC.
700 BOND COURT BLDG.
CLEVELAND, OHIO 44114
ATTN: D.SHAPER

2. ALL STATES ANTI-POLLUTION
6801 ENGLE RD., SUITE N
MIDDLEBURG, OHIO 44130
ATTN: BOLLAGIA DOSUNIMU

3. BURGESS NIPPLE LTD.
5085 REED RD.
COLUMBUS, OHIO 43220
ATTN: SCOTT DAILEY

4. MALCOLM PRINIE INC.
6161 BUSCH BLVD.
COLUMBUS, OHIO 43229
ATTN: HARRY BHATT

5. R & R INTERNATIONAL, INC.
1234 S. CLEVELAND-MASSILLO
AKRON, OHIO 44321 RI
ATTN: JIM SMITH

Requisition No.

PURCHASE APPROVED BECAUSE

Quotation Requested
Not Later Than

Lowest Price _____ Quality
G.S.A. _____ Required Design
G.S. Contract _____ Only Source
Proprietary 666-2200

9/13/89

Explain Fully

9/16

Item No.	1	2	3	4	5
<p>SUBCONTRACT ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO REMOVE 12 UNDERGROUND STORAGE TANKS AT THE RAVENNA ARMY AMMUNITIONS PLANT.</p> <p>PER SPECIFICATION BY HAVENS AND EMERSON DATED JULY 1989 AND RAI SPECIFICATION PS-666 DATED AUGUST 17, 1989.</p>	<i>NB</i>	<i>NB</i>			<p><i>R&R</i> 336 495 <i>Memo</i> 312 945</p>

Date August 24, 1989

QUOTATION RECAP

283-1100

RAVENNA ARSENAL, INC.

Contract No. DAAA09-88-Z-0001
614-761-2006

- 6. ENVIRONMENTAL DESIGN
1533 COMMERCE DR.
STOW, OHIO 44224
ATTN: LYN RYCHLIK
- 7. URS CONSULTANTS
3605 WARRENSVILLE CENTER RD
CLEVELAND, OHIO 44122
ATTN: GARY HRIBAR
- 8. ENGINEERING & ENVIRONMENTAL
255 BRADENTON AVE. SUITE 150
DUBLIN, OHIO 43017
ATTN: STEPHANIE STOW
- 9. JOHN C. BOSLEY CONSTRUCTION
P.O. BOX 67
MINERAL WELLS, WV 26150
ATTN: THOMAS GARRETT
- 10. CADDUM, INC.
475 METROPLEX DR. SUITE 505
NASHVILLE, TN 37211
ATTN: JAMES REYNOLDS

Requisition No.


PURCHASE APPROVED BECAUSE
489-1120

Quotation Requested
Not Later Than

9/13/89

Lowest Price _____ Quality _____
 G.S.A. _____ Required Design _____
 G.S. Contract _____ Only Source _____
 Proprietary _____
 615-331-0013

Explain Fully

Item No.	6	7	8	9	10
SUBCONTRACT ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO REMOVE 12 UNDERGROUND STORAGE TANKS AT THE RAVENNA ARMY AMMUNITIONS PLANT. PER SPECIFICATION BY HAVENS AND EMERSON DATED JULY 1989 AND RAI SPECIFICATION PS-666 DATED AUGUST 17, 1989.	 EMG 212,500			BOSELEY 214,043.00	

Date August 24, 1989

QUOTATION RECAP

313-625-8700

RAVENNA ARSENAL, INC.

Contract No. DAAA09-88-Z-0001
606-259-3779

11. APEC LTD
415 W. MAPLE ST.
KALAMAZOO, MI 49001

12. CLAWSON TANK CO.
4701 WHITE LAKE RD.
CLARKSTON, MI 48016

13. CLYCAN ALPHA LTD
P.O. BOX 22306
LEXINGTON, KY 40522

Requisition No.

Quotation Requested
Not Later Than

9/13/89

PURCHASE APPROVED BECAUSE
313-545-3115

Lowest Price _____ Quality
G.S.A. _____ Required Design
G.S. Contract _____ Only Source
Proprietary
800-686-2476

Explain Fully 8/31

14. WAGNER ENTERPRISE, INC.
950 E. NINE MILE RD.
HAZEL PARK, MI 48030

15. CARDAMONE CONSTRUCTION
4865 CHAINCRAFT RD.
CLEVELAND, OHIO 44125 ✓

Item No.	11	12	13	14	15
SUBCONTRACT ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO REMOVE 12 UNDERGROUND STORAGE TANKS AT THE RAVENNA ARMY AMMUNITIONS PLANT. PER SPECIFICATION BY HAVENS AND EMERSON DATED JULY 1989 AND RAI SPECIFICATION PS-666 DATED AUGUST 17, 1989.					<i>Cardamone</i> 291659 ⁶³

RAVENNA ARSENAL, INC.

D.O. No. C-3

8451 STATE ROUTE 5
RAVENNA, OHIO 44266-9297

Inquiry No. BJJ-776

D.M.S. Reg. No. 1

CONTRACTS NO. DAAA09-88-Z-0001

Date: August 24, 1989

REQUEST FOR QUOTATION

TO:

THIS IS NOT AN ORDER

Please quote price - f.o.b. shipping point and f.o.b. destination, delivery, and cash terms. Your quotation should also show shipping weight and point of shipment. Price each item separately. Quotations must be submitted in duplicate. Our inquiry number must appear on your quotation. We reserve the right to reject all or any part of your quotation.

QUANTITY	DESCRIPTION
1	<p>RAVENNA ARSENAL, INC., PRIME CONTRACTOR FOR THE RAVENNA ARMY AMMUNITION PLANT IS CURRENTLY SOLICITING SEALED BIDS FOR REMOVAL OF 12 UNDERGROUND STORAGE TANKS LOCATED AT THE PLANT.</p> <p>THE REMOVAL OF THE 12 TANKS WILL BE ACCOMPLISHED BASED ON HAVENS AND EMERSON UST REMOVAL SPECIFICATION DATED JULY 1989 AND RAVENNA ARSENAL, INC. SPECIFICATION PS-666 DATED AUGUST 17, 1989.</p> <p>THIS PROJECT WILL BE AWARDED ONLY AFTER MONIES ARE APPROVED BY THE UNITED STATES ARMY, THEREFORE, ALL BIDS MUST BE VALID FOR THIS APPROVAL PERIOD AND DURATION OF THE CONTRACT.</p> <p>BIDS ARE TO BE SUBMITTED BY SEPTEMBER 13, 1989.</p> <p>SITE VISITS MAY BE ARRANGED BY CONTACTING WAYNE CARKIDO, RAVENNA ARSENAL, INC. ENGINEER AT (216)297-3237. DRAWINGS WILL BE PROVIDED AT TIME OF SITE VISIT.</p> <p>ANY QUESTIONS OR NEED FOR ADDITIONAL INFORMATION SHOULD BE DIRECTED TO MY ATTENTION AT (216)297-3107.</p> <p style="text-align: right;">CONTINUED</p> <p>Your Quotation Must Be In Our Hands By: <u>September 13, 1989</u></p>

All correspondence related to the above inquiry should be addressed to the attention of:

B. J. Jenkins

B. J. JENKINS, ADMINISTRATOR
CONTRACTS/PROCUREMENT & PURCHAISING

**Procurement & Materials
Control Division**

D.O. No. C3

8451 STATE ROUTE 5

Inquiry No. BJJ-776

D.M.S. Reg. No. 1

RAVENNA, OHIO 44266-9297

CONTRACT NO. DAAA09-88-Z-0001

Date: August 24, 1989

REQUEST FOR QUOTATION

TO: []

[]

THIS IS NOT AN ORDER
 Please quote price - f.o.b. shipping point and f.o.b. destination, delivery, and cash terms. Your quotation should also show shipping weight and point of shipment. Price each item separately. Quotations must be submitted in duplicate. Our inquiry number must appear on your quotation. We reserve the right to reject all or any part of your quotation.

QUANTITY	DESCRIPTION
	<p>YOUR BID MUST MEET THE FOLLOWING REQUIREMENTS:</p> <ol style="list-style-type: none"> 1. ATTACHED TERMS AND CONDITIONS FOR MAINTENANCE, CONSTRUCTION, AND ENGINEERING CONTRACTS AND SPECIAL TERMS AND CONDITIONS APPLICABLE TO SUBCONTRACTS AND PURCHASE ORDERS ISSUED UNDER GOVERNMENT PRIME CONTRACTS OR GOVERNMENT SUBCONTRACTS. <p><u>PLEASE PAY PARTICULAR ATTENTION TO CLAUSES 11 AND 16; ALSO 18 THROUGH 25 WHICH ARE APPLICABLE TO THE DAVIS-BACON ACT.</u></p> <ol style="list-style-type: none"> 2. U.S. DEPARTMENT OF LABOR DECISION OH89-1 WITH MODIFICATIONS 1 THRU 3. 3. COMPLIANCE WITH SAFETY AND SECURITY REGULATIONS OF RAVENNA ARSENAL, INC. AND THE OCCUPATIONAL SAFETY AND HEALTH ACT AND THE SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION (VOLUME 36, NUMBER 75, PART II OF THE FEDERAL REGISTER). ALL REGULATIONS WILL BE STRICTLY ENFORCED. 4. BUY-AMERICAN ACT CERTIFICATION (ATTACHED); TO BE COMPLETED AND RETURNED. 5. ASSURANCE OF NONSEGREGATED FACILITIES (ATTACHED); TO BE COMPLETED AND RETURNED. 6. BIDDER'S MAILING LIST APPLICATION FORM SF-129 (ATTACHED); TO BE COMPLETED AND RETURNED. 7. YOUR QUOTATION MUST SHOW THAT PRICES ARE FIRM FOR THE DURATION <p>Your Quotation Must Be In Our Hands By: <u>SEE PAGE ONE</u></p>

All correspondence related to the above inquiry should be addressed to the attention of:

B. J. Jenkins
 B. J. JENKINS, ADMINISTRATOR
 CONTRACT/PROCUREMENT & PURCHASING

D.O. No. C3

8451 STATE ROUTE 5

Inquiry No. BJJ-776

D.M.S. Reg. No. 1

RAVENNA, OHIO 44266-9297

CONTRACT NO. DAAA09-88-Z-0001

Date: August 24, 1989

REQUEST FOR QUOTATION :

TO: []
[]

[]
[]

THIS IS NOT AN ORDER
Please quote price - f.o.b. shipping point and f.o.b. destination, delivery, and cash terms. Your quotation should also show shipping weight and point of shipment. Price each item separately. Quotations must be submitted in duplicate. Our inquiry number must appear on your quotation. We reserve the right to reject all or any part of your quotation.

QUANTITY

DESCRIPTION

OF THE SCHEDULE AS OFFERED, AND THAT ANY CONTRACT OR PURCHASE ORDER RESULTING THEREOF WILL BE IN CONFORMITY WITH THE SPECIAL TERMS AND CONDITIONS.

- 8. THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FURNISH A PERFORMANCE BOND AND PAYMENT BOND PRIOR TO COMMENCING ANY WORK ON THE CONTRACT. THE COST OF WHICH SHOULD NOT BE INCLUDED IN THE QUOTATION.
- 9. IN ADDITION TO THE ABOVE, PLEASE STATE IN THE PROPOSAL THAT THE PRICES ARE IN ACCORDANCE WITH THE SPECIFICATIONS.
- 10. ALL SUBCONTRACTORS SHALL SUBMIT THEIR BIDS IN SEALED ENVELOPES IDENTIFIED BY THE NAME AND ADDRESS OF THE BIDDER, THE NUMBER OF THE INQUIRY, AND DATE OF BID CLOSING.

IF THERE IS NO INTENTION TO PROVIDE A QUOTATION, THE COMPLETE BID PACKAGE MUST BE RETURNED AS AN ATTACHMENT TO YOUR LETTERHEAD.

Your Quotation Must Be In Our Hands By: SEE PAGE ONE

All correspondence related to the above inquiry should be addressed to the attention of:

B. J. Jenkins
B. J. JENKINS, ADMINISTRATOR
CONTRACT/PROCUREMENT & PURCHASING

Put together Spread Sheet
Est. Start Comp & %'s

Fire Marshall Inspector

Carl Dick - Estimator (not in attendance)
John Cardamone -

State certified thru 89
took test 1990

Start up → Jan 22, 1990 Based on Inspector Approval

Completion → (60 days) March 30 1990

→ People 4 (6)

Come Back for Seeding.

ORIGINAL → 1 ft around

in land
Lake County

~~1.5 yd³/ton~~

1.5 ton/yd³

1000
1.5
<hr/>
5000
10000
<hr/>
1500. ton

Total 185 177

Net 30 (15 & 30 Progress Pmt.)

Need transportation & Disposal

Sites

①

empty tanks Prior to Excavations
to avoid Spills

+ Spill Alert forms +

Sand Blast

ERT will be drummed & shipped out
as non haz. solid waste

EP toxic on sand waste refig.
Clean-up (he will submit)

- Assoc. PIPING REMOVAL + ALSO +

— UP TO BLDGS & SLABS

— & BLDGS IF READY ACCESSABLE —

P.O. 19

5% BACK FOR SANDING (9259.00)

AMSMC-ISE

SUBJECT: Verification of Underground Storage Tanks (USTS) Summary Matrix Compiled by Corps of Engineers (COE), Huntsville Division

DISTRIBUTION:

Commander

Pine Bluff Arsenal, ATTN: SMCPS- FM , Pine Bluff, AR 71602-9500
Rock Island Arsenal, ATTN: SMCRI-SEM-EC Rock Island, IL 61299-5000
Watervliet Arsenal, ATTN: SMCWV- EHE , Watervliet, NY 12189-4050

U.S. Army Armament Research, Development and Engineering Center, ATTN: SMCAR-EA(D) Picatinny Arsenal, NJ 07806-5000

U.S. Army Chemical Research, Development and Engineering Center, ATTN: SMCCR-EM(A) APG, MD 21010-5423

McAlester AAP, ATTN: SMCMC- ISF-C, McAlester, OK 74501-5000
McAlester AAP, ATTN: SMCMTS-XXXXXXXXXXXX, McAlester, OK 74501-5000

Hawthorne AAP, ATTN: SMCHW-OR , Hawthorne, NV 89415-5000
Holston AAP, ATTN: SMCHO- EN , Kingsport, TN 37660-9982
Indiana AAP, ATTN: SMCIN- EN , Charlestown, IN 47111-9667
Iowa AAP, ATTN: SMCIO- EN , Middletown, IA 52538-5000
Kansas AAP, ATTN: SMCKA- OR , Parsons, KS 67357-9107
Lake City AAP, ATTN: SMCLC- EN-E, Independence, MO 64051-0330
Lone Star AAP, ATTN: SMCLC- EN , Texarkana, TX 75505-9101
Longhorn AAP, ATTN: SMCLC- EN , Marshall, TX 75671-1059
Louisiana AAP, ATTN: SMCLA- SF , P.O. Box 30053, Shreveport, LA 71130-0053
Milan AAP, ATTN: SMCMI- EN , Milan, TN 38358-5000
Mississippi AAP, ATTN: SMCMS- EN , Stennis Space Center, MS 39529-7000
Newport AAP, ATTN: SMCNE- EN , Newport, IN 47966-0121
Radford AAP, ATTN: SMCRA- EN , Caller Service 2, Radford, VA 24141-0298
Riverbank AAP, ATTN: SMCRB- ER , Riverbank, CA 95367-0673
Scranton AAP, ATTN: SMCSC- EN , 156 Cedar Avenue, Scranton, PA 18505-1138
Sunflower AAP, ATTN: SMCSS- EV , P.O. Box 540, DeSoto, KS 66019-0640

Routing slip with checkboxes for various departments: CB-COR, CONT ADM, PROP ADM, OASAS, SECURITY, RAI, RETURN FOR FILE. Includes handwritten initials 'Engg' and 'Jule'.

General Manager
Ravenna Arsenal, Inc.
FWD FOR
Information
Compliance as applicable
Reply NLT

Commander's Representative

Alabama AAP, ATTN: SMCAL- 110 Highway No. 035, Childersburg, AL 35044-1021
Badger AAP, ATTN: SMCBA- CR , Baraboo, WI 53913-5000
Cannonusker AAP, ATTN: SMCCKO, P.O. Box 2041, Grand Island, NE 68802-2041
Hays AAP, ATTN: SMCHE, Pittsburgh, PA 15207-1969
Joliet AAP, ATTN: SMCJO- EN , Joliet, IL 60436-5000
Ravenna AAP, ATTN: SMCRAV, 8481 State Route 5, Ravenna, OH 44266-9297

Twin Cities AAP, ATTN: SMCTC- EN , New Brighton, MN 55112-5000
Volunteer AAP, ATTN: SMCVO- CR , P.O. Box 20607, Chattanooga, TN 37422-2607
Ethan Allen Firing Range, General Electric Firing Range, General Electric Co., Lakeside Avenue, Burlington, VT 05402-5501

DA PEO/PM OFFICES-AMCCOM MATRIX SUPPORTED

PEO Armament, ATTN: AMCPEO-AR, Picatinny Arsenal, NJ 07806-5000
Product Mgr, Howitzer Improvement Program (HIP), ATTN: AMCPM-HIP, Picatinny Arsenal, NJ 07806-5000
Project Mgr, Autonomous Precision Guided Munitions (APGM) ATTN: AMCPM-APGM, Picatinny Arsenal, NJ 07806-5000
Project Mgr, Tank Main Armament System (TMAS), ATTN: AMCPM-TMAS, Picatinny Arsenal, NJ 07806-5000
Product Mgr, GMM, ATTN: AMCPM-GMM, Rock Island, IL 61299-7150
Project Mgr, Sense & Destroy Armor (S&DARM), ATTN: AMCPM-SD, Picatinny Arsenal, NJ 07806-5000

CF: Other

Commander

U.S. Army Armament Research, Development and Engineering Center, ATTN: SMCAR-DC, Picatinny Arsenal, NJ 07806-5000
U.S. Army Armament Research, Development and Engineering Center, ATTN: SMCAR-CC, Picatinny Arsenal, NJ 07806-5000
U.S. Army Armament Research, Development and Engineering Center, ATTN: SMCAR-FS, Picatinny Arsenal, NJ 07806-5000
U.S. Army Chemical Research, Development and Engineering Center, ATTN: SMCCR-DC, APG, MD 21010-5423



DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND
ROCK ISLAND, ILLINOIS 61299-6000



REPLY TO
ATTENTION OF

3: 1 May 1990

AMSMC-ISE (200-1a)

4 APR 1990

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Verification of Underground Storage Tanks (USTs) Summary Matrix
Compiled by Corps of Engineers (COE), Huntsville Division

1. Headquarters, AMSMC-ISE-E is in the process of requesting that the COE, Huntsville Division do some additional UST work at U.S. Army Armament, Munitions and Chemical Command (AMCCOM) installations.
2. The enclosed 'AMCCOM - UST Summary Matrix' compiled by the COE, Huntsville Division does not correspond with the AMSMC-ISE list compiled on 20 November 1989 and verified by AMCCOM installations.
3. Headquarters, AMSMC-ISE assumes that the COE figures might be accurate because they conducted the UST investigation and evaluation studies at AMCCOM installations last year.
4. Request that you verify the accuracy and/or make appropriate corrections of all the information in each column of the enclosure for your installation.
5. Request that you specify if funds required to accomplish the permanent closure and removal of Defense Environmental Restoration Account (DERA) eligible USTs should be released to your installation or if the funds should be made available to the COE, Huntsville Division to accomplish the permanent closure and removal of DERA eligible USTs at your installation.
6. This is an easy exercise and a response is required WLT 1 May 1990.
7. This action has AMSMC-PL and AMSMC-PCG (R) concurrence.
8. The point of contact for this action is Mr. Cyril Onwokae, AMSMC-ISE-E, DSN 793-1350.

FOR THE COMMANDER:

Encl

RONALD T. SHINBORI
Chief, Environmental Quality Div

AMCCON - UNDERGROUND STORAGE TANKS SUMMARY MATRIX

3/ 6/1990

INSTALLATION	REGULATED TANKS										TOTAL TANKS		DERA ELIGIBLE	DERA COST (\$)
	NO OF TANKS	UNKNOWN OR BY 1965	NUMBER INSTALLED				REPAIRATOR	INACTIVE	NO OF TANKS	INACTIVE				
			65-69	70-74	75-79	AFTER 1980								
ALABAMA MAP	3	3	-	-	-	-	1	3	3	3	0	3	31,800	
BAUGER MAP	3	1	-	1	-	-	1	0	10	0	0	0	159,500	
CORNUSKER MAP	21	9	1	6	5	-	7	14	47	39	33	63,800		
CRUDC	33	11	5	6	4	-	12	0	26	0	0	-		
ETHAN ALLEN FR	24	1	-	1	10	-	9	51	98	51	8	327,600		
HANTHORNE MAP	95	84	1	-	1	-	-	8	8	8	2	261,100		
HAYS MAP	8	12	4	4	1	-	3	5	30	6	2	2,000		
HOLSTON MAP	24	12	4	10	5	-	20	5	35	5	2	10,000		
INDIANA MAP	35	-	-	5	1	-	-	4	24	5	2	833,000		
IOAK MAP	8	1	1	2	2	-	2	16	70	56	1	19,000		
JOLIET MAP	23	17	4	1	2	-	4	0	19	0	0	-		
KANSAS MAP	11	4	-	-	2	-	2	7	12	7	1	2,200		
LAKE CITY MAP	5	7	-	-	2	-	2	0	7	1	0	-		
LORE STAR MAP	9	3	-	-	3	-	7	5	20	9	3	19,600		
LONGCHON MAP	5	4	-	-	1	-	7	0	69	5	0	-		
LOUISIANA MAP	14	7	-	-	1	-	6	0	6	0	0	-		
MILAN MAP	15	7	-	-	1	-	7	0	18	10	10	42,000		
MISSISSIPPI MAP	6	11	-	2	-	-	2	10	18	32	20	209,000		
NEWPORT MAP	15	13	-	-	5	-	7	18	74	46	40	481,500		
PICATINNY ARS	26	43	1	8	5	-	15	46	72	35	33	478,000		
PIKE BLUFF ARS	72	18	2	2	1	-	-	15	50	14	14	153,800		
RAVENNA MAP	23	12	2	-	1	-	-	4	29	6	3	12,100		
RIVERBANK MAP	13	8	1	1	3	-	7	0	12	0	0	-		
ROCK ISLAND ARS	20	5	-	-	-	-	11	5	5	5	5	96,000		
RADFORD MAP	11	5	-	-	-	-	-	5	21	12	11	70,000		
ST. LOUIS MAP	5	12	-	2	3	-	-	12	9	6	1	27,000		
SUNFLOWER MAP	17	-	-	-	-	-	3	-	22	12	12	206,000		
TWIN CITIES MAP	3	-	-	1	4	-	-	11	36	8	8	211,500		
VOLANTEER MAP	19	14	-	1	-	-	-	-	-	-	-	-		
WATERLIDT ARS	26	9	1	4	-	-	12	8	-	-	-	-		



**WADSWORTH/ALERT
LABORATORIES, INC.**
Sampling, testing, mobile labs

5405 E. Schaaf Rd./P.O. Box 31454/Cleveland, OH 44131/(216) 642-9151

ANALYTICAL REPORT

Project No. 5047

Presented to :

John Cardamone

Cardamone Construction, Inc.

WADSWORTH/ALERT LABORATORIES, INC.

Dale L. Mori
Laboratory Manager - Cleveland

April 12, 1990



CORPORATE AND LABORATORY: North Canton, Ohio (216) 497-9396
LABORATORY: Cleveland, Ohio (216) 642-9151
LABORATORY: Bartow, Florida (813) 533-2150
SOUTHEAST REGIONAL OFFICE: Lexington, South Carolina (803) 957-6590
24 HOURS (216) 497-9336



WADSWORTH/ALERT
LABORATORIES, INC.

Sampling, testing, mobile labs

5405 E. Schaaf Rd./P.O. Box 31454/Cleveland, OH 44131/(216) 642-9151

April 13, 1990

Cardamone Construction, Inc.
4865 Chaincraft Road
Garfield Heights, OH 44125

Re: Laboratory Project #: 5047
Site: Ravenna Arsenal
Attn: John Cardamone

At the request of Cardamone Construction, Inc., Wadsworth/ALERT Laboratories analyzed two (2) solid samples. The samples received February 22, 1990 were identified as Fuel Oil Sludge and Gas Tank.

All samples received in the laboratory are included in the QA/QC plan which consists of laboratory blanks, check samples and spike/spike duplicate analysis on 20% of all samples by parameter.

The analysis was conducted by SW846 Methods as follows.

<u>Parameter</u>	<u>Method</u>
Total Cyanide	SW846 9010
Total Sulfide	SW846 9030
Polychlorinated Biphenyls	SW846 8080
Pesticides	SW846 8080
Herbicides	SW846 8150
Volatile Organic Compounds	SW846 8010

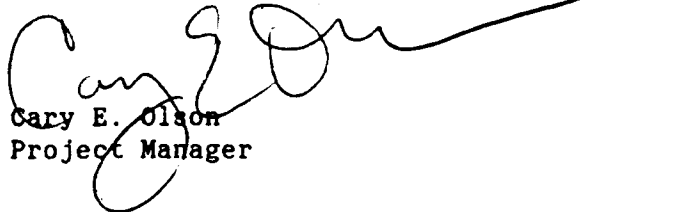
References:

SW846 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods," Third Edition, September 1986.

If you have any questions feel free to contact Dale Mori or myself.

Very truly yours,

Wadsworth/ALERT Laboratories, Inc.



Cary E. Olson
Project Manager





WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5047-57033
MATRIX : SOLID

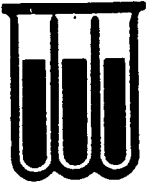
DATE RECEIVED: 4/ 4/90

SAMPLE ID : FUEL OIL SLUDGE

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Cyanide	4/ 6/90	0.9	0.1 mg/kg
Sulfide	4/ 9/90	68	25 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5047-57033
MATRIX: SOLID

DATE RECEIVED: 4/ 4/90
DATE EXTRACTED: 4/ 4/90
DATE ANALYZED: 4/ 5/90

SAMPLE ID: FUEL OIL SLUDGE

POLYCHLORINATED BIPHENYLS
METHOD 8080 LIST - GC

PCB-1016	ND
PCB-1221	ND
PCB-1232	ND
PCB-1242	ND
PCB-1248	ND
PCB-1254	ND*
PCB-1260	ND*
PCB-1262	--

NOTE: ND (None Detected, lower detectable limit = 2 mg/kg)
ND* (None Detected, lower detectable limit = 4 mg/kg)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5047-57033
MATRIX: SOLID

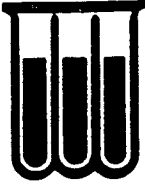
DATE RECEIVED: 4/ 4/90
DATE EXTRACTED: 4/ 4/90
DATE ANALYZED: 4/ 5/90

SAMPLE ID: FUEL OIL SLUDGE

CHLORINATED PESTICIDES
METHOD 8080 LIST - GC

	RESULT (mg/kg)	DETECTION LIMIT
Alpha-BHC	ND	0.1
Beta-BHC	ND	0.2
Delta-BHC	ND	0.2
Lindane	ND	0.1
Heptachlor	ND	0.2
Aldrin	ND	0.2
Heptachlor Epoxide	ND	0.2
Endosulfan I	ND	0.4
Dieldrin	ND	0.4
4,4'-DDE	ND	0.4
Endrin	ND	0.6
Endosulfan II	ND	0.4
4,4'-DDD	ND	0.8
Endrin Aldehyde	ND	0.8
Endosulfan Sulfate	ND	0.8
4,4'-DDT	ND	0.8
Methoxychlor	ND	0.8
Chlordane	ND	2
Toxaphene	ND	10

NOTE: ND (None Detected) as rec'd
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5047-57033
MATRIX: SOLID

DATE RECEIVED: 4/ 4/90
DATE EXTRACTED: 4/ 5/90
DATE ANALYZED: 4/ 6/90

SAMPLE ID: FUEL OIL SLUDGE

HERBICIDES
ANALYTICAL REPORT

2,4-D	ND
Silvex	ND*

NOTE: ND (None Detected, lower detectable limit = 0.5 mg/kg)
ND* (None Detected, lower detectable limit = 0.1 mg/kg)
ND** (None Detected, lower detectable limit = mg/kg)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5047-57034
MATRIX: SOLID

DATE RECEIVED: 4/ 4/90
DATE EXTRACTED: 4/ 6/90
DATE ANALYZED: 4/ 6/90

SAMPLE ID: GAS TANK

VOLATILE ORGANICS
METHOD 8010 - GC

Benzyl chloride	ND	Dichlorodifluoromethane	ND
Bromobenzene	ND	1,1-Dichloroethane	ND
Bromodichloromethane	ND	1,2-Dichloroethane	ND
Bromoform	ND	1,1-Dichloroethylene	ND
Bromomethane	ND	cis-1,2-Dichloroethylene	ND
Carbon tetrachloride	ND	trans-1,2-Dichloroethylene	ND
Chlorobenzene	ND	Dichloromethane	ND
Chloroethane	ND	1,2-Dichloropropane	ND
Chloroform	ND	trans-1,3-Dichloropropylene	ND
1-Chlorohexane	ND	1,1,2,2-Tetrachloroethane	ND
2-Chloroethyl vinyl ether	ND	1,1,1,2-Tetrachloroethane	ND
Chloromethane	ND	Tetrachloroethylene	ND
Chlorotoluene	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
Dibromomethane	ND	Trichloroethylene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Trichloropropane	ND
1,4-Dichlorobenzene	ND	Vinyl chloride	ND

NOTE: ND (None Detected, lower detectable limit = 10 mg/kg) as rec'd
ND* (None Detected, lower detectable limit = mg/kg) as rec'd
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5047-57034
MATRIX : SOLID

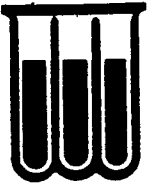
DATE RECEIVED: 4/ 4/90

SAMPLE ID : GAS TANK

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Cyanide	4/ 6/90	1.1	0.1	mg/kg
Sulfide	4/ 9/90	ND	25	mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5047-57034
MATRIX: SOLID

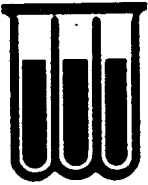
DATE RECEIVED: 4/ 4/90
DATE EXTRACTED: 4/ 4/90
DATE ANALYZED: 4/ 5/90

SAMPLE ID: GAS TANK

POLYCHLORINATED BIPHENYLS
METHOD 8080 LIST - GC

PCB-1016	ND
PCB-1221	ND
PCB-1232	ND
PCB-1242	ND
PCB-1248	ND
PCB-1254	ND*
PCB-1260	ND*
PCB-1262	--

NOTE: ND (None Detected, lower detectable limit = 2 mg/kg)
ND* (None Detected, lower detectable limit = 4 mg/kg)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5047-57034
MATRIX: SOLID

DATE RECEIVED: 4/ 4/90
DATE EXTRACTED: 4/ 4/90
DATE ANALYZED: 4/ 5/90

SAMPLE ID: GAS TANK

CHLORINATED PESTICIDES
METHOD 8080 LIST - GC

	RESULT (mg/kg)	DETECTION LIMIT
Alpha-BHC	ND	0.1
Beta-BHC	ND	0.2
Delta-BHC	ND	0.2
Lindane	ND	0.1
Heptachlor	ND	0.2
Aldrin	ND	0.2
Heptachlor Epoxide	ND	0.2
Endosulfan I	ND	0.4
Dieldrin	ND	0.4
4,4'-DDE	ND	0.4
Endrin	ND	0.6
Endosulfan II	ND	0.4
4,4'-DDD	ND	0.8
Endrin Aldehyde	ND	0.8
Endosulfan Sulfate	ND	0.8
4,4'-DDT	ND	0.8
Methoxychlor	ND	0.8
Chlordane	ND	2
Toxaphene	ND	10

NOTE: ND (None Detected) as rec'd
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5047-57034
MATRIX: SOLID

DATE RECEIVED: 4/ 4/90
DATE EXTRACTED: 4/ 5/90
DATE ANALYZED: 4/ 6/90

SAMPLE ID: GAS TANK

HERBICIDES
ANALYTICAL REPORT

2,4-D
Silvex

ND
ND*

NOTE: ND (None Detected, lower detectable limit = 0.5 mg/kg)
ND* (None Detected, lower detectable limit = 0.1 mg/kg)
ND** (None Detected, lower detectable limit = mg/kg)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5047-57033
MATRIX: SOLID

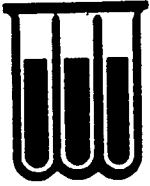
DATE RECEIVED: 4/ 4/90
DATE EXTRACTED: 4/ 6/90
DATE ANALYZED: 4/ 6/90

SAMPLE ID: FUEL OIL SLUDGE

VOLATILE ORGANICS
METHOD 8010 - GC

Benzyl chloride	ND	Dichlorodifluoromethane	ND
Bromobenzene	ND	1,1-Dichloroethane	ND
Bromodichloromethane	ND	1,2-Dichloroethane	ND
Bromoform	ND	1,1-Dichloroethylene	ND
Bromomethane	ND	cis-1,2-Dichloroethylene	ND
Carbon tetrachloride	ND	trans-1,2-Dichloroethylene	ND
Chlorobenzene	ND	Dichloromethane	ND
Chloroethane	ND	1,2-Dichloropropane	ND
Chloroform	ND	trans-1,3-Dichloropropylene	ND
1-Chlorohexane	ND	1,1,2,2-Tetrachloroethane	ND
2-Chloroethyl vinyl ether	ND	1,1,1,2-Tetrachloroethane	ND
Chloromethane	ND	Tetrachloroethylene	ND
Chlorotoluene	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
Dibromomethane	ND	Trichloroethylene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Trichloropropane	ND
1,4-Dichlorobenzene	ND	Vinyl chloride	ND

NOTE: ND (None Detected, lower detectable limit = 10 mg/kg) as rec'd
ND* (None Detected, lower detectable limit = mg/kg) as rec'd
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

QUALITY CONTROL SECTION



WADSWORTH/ALERT
LABORATORIES, INC.

April 13, 1990

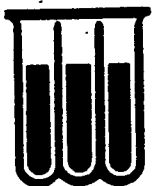
QUALITY CONTROL NARRATIVE

Wadsworth/ALERT Laboratories, Inc. received samples from Cardamone Construction that were sampled on February 16th. The following parameters were analyzed past the recommended holding time due to the late request date:

<u>Parameter:</u>	<u>Recommended Holding Time:</u>
Cyanide	14 days
Sulfide	7 days
GC Volatiles	14 days
Polychlorinated biphenyls	14 days (to extraction)
Pesticides	14 days (to extraction)
Herbicides	14 days (to extraction)

The above parameters were requested on April 4th.

Opal Davis-Johnson
Quality Control Coordinator
Cleveland Laboratory



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
900314	Cyanide	68	67	SOLID	(43-130)
900227	Sulfide	67	59	SOLID	(24-139)
900320	Herbicides	42	39	SOLID	(22-106)
900403	Polychlorinated Biphenyls	95	103	SOLID	(65-142)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
PESTICIDE COMPOUNDS					
900327	Lindane	95	110	SOLID	(46-127)
	Heptachlor	95	95		(35-130)
	Aldrin	90	90		(34-132)
	Dieldrin	120	120		(31-134)
	Endrin	108	104		(42-139)
	1,4'-DDT	104	104		(23-134)
GC VOLATILE COMPOUNDS					
900403	1,1-Dichloroethene	94	65	SOLID	(67-122)
	Trichloroethene	82	70		(71-119)
	Chlorobenzene	104	87		(76-121)
	Toluene	94	79		(64-126)
	Benzene	101	85		(64-128)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories
LAB #: 9290-92406
MATRIX : SOLID

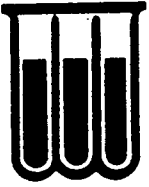
DATE RECEIVED: 4/ 6/90

SAMPLE ID : INTRA-LAB BLANK

GENERAL ANALYTICAL BLANK REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Cy... Cyclide	4/ 6/90	ND	0.1 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories
LAB #: 9290-92409
MATRIX : SOLID

DATE RECEIVED: 4/ 9/90

SAMPLE ID : INTRA-LAB BLANK

GENERAL ANALYTICAL BLANK REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Sulfide	4/ 9/90	ND	25 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB #: 9290-92405
MATRIX: SOLID

DATE RECEIVED: 4/ 5/90
DATE EXTRACTED: 4/ 5/90
DATE ANALYZED: 4/ 7/90

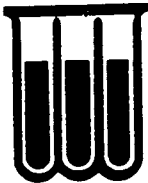
SAMPLE ID: INTRA-LAB BLANK

HERBICIDES ANALYTICAL BLANK REPORT

2,4-D
Silvex

ND
ND*

NOTE: ND (None Detected, lower detectable limit = 0.5 mg/kg)
ND* (None Detected, lower detectable limit = 0.1 mg/kg)
ND** (None Detected, lower detectable limit = mg/kg)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories
LAB #: 9290-92404
MATRIX: SOLID

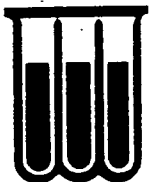
DATE RECEIVED: 4/ 4/90
DATE EXTRACTED: 4/ 4/90
DATE ANALYZED: 4/ 5/90

SAMPLE ID: INTRA-LAB BLANK 04/04/90

POLYCHLORINATED BIPHENYLS
ANALYTICAL BLANK REPORT

PCB-1016	ND
PCB-1221	ND
PCB-1232	ND
PCB-1242	ND
PCB-1248	ND
PCB-1254	ND
PCB-1260	ND
PCB-1262	--

NOTE: ND (None Detected, lower detectable limit = 0.5 mg/kg) as rec'd
ND* (None Detected, lower detectable limit = mg/kg) as rec'd
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB #: 9290-92404
MATRIX: SOLID

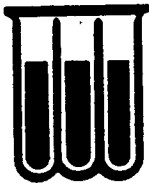
DATE RECEIVED: 4/ 4/90
DATE EXTRACTED: 4/ 4/90
DATE ANALYZED: 4/ 5/90

SAMPLE ID: INTRA-LAB BLANK 04/04/90

CHLORINATED PESTICIDES ANALYTICAL BLANK REPORT
SELECTED LIST

	RESULT (mg/kg)	DETECTION LIMIT
Alpha-BHC	ND	0.05
Beta-BHC	ND	0.05
Delta-BHC	ND	0.05
Lindane	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor Epoxide	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.1
4,4'-DDE	ND	0.1
Endrin	ND	0.1
Endosulfan II	ND	0.1
4,4'-DDD	ND	0.1
Endrin Aldehyde	ND	0.1
Endosulfan Sulfate	ND	0.1
4,4'-DDT	ND	0.1
Methoxychlor	ND	0.5
Endrin Ketone	ND	0.1
Chlordane	ND	0.5
Alpha Chlordane	ND	0.5
Gamma Chlordane	ND	0.5
Toxaphene	ND	1
Kepone	ND	0.5
Alachlor	--	
Metolachlor	--	
Methyl Parathion		
Parathion		

NOTE: ND (None Detected) as rec'd



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB #: 9290-92406
MATRIX: SOLID

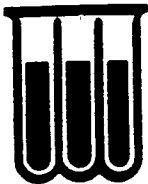
DATE RECEIVED: 4/ 6/90
DATE EXTRACTED: 4/ 6/90
DATE ANALYZED: 4/ 6/90

SAMPLE ID: INTRA-LAB BLANK

VOLATILE ORGANICS
METHOD 8010/8020 BLANK LIST

Benzene	ND	1,4-Dichlorobenzene	ND
Benzyl chloride	ND	Dichlorodifluoromethane	ND
Bromobenzene	ND	1,1-Dichloroethane	ND
Bromodichloromethane	ND	1,2-Dichloroethane	ND
Bromoform	ND	1,1-Dichloroethylene	ND
Bromomethane	ND	cis-1,2-Dichloroethylene	ND
Carbon tetrachloride	ND	trans-1,2-Dichloroethylene	ND
Chlorobenzene	ND	Dichloromethane	ND
Chloroethane	ND	1,2-Dichloropropane	ND
Chloroform	ND	trans-1,3-Dichloropropylene	ND
1-Chlorohexane	ND	Ethylbenzene	ND
2-Chloroethyl vinyl ether	ND	1,1,2,2-Tetrachloroethane	ND
Chloromethane	ND	1,1,1,2-Tetrachloroethane	ND
Chlorotoluene	ND	Tetrachloroethylene	ND
Dibromochloromethane	ND	Toluene	ND
Dibromomethane	ND	1,1,1-Trichloroethane	ND
1,2-Dichlorobenzene	ND	1,1,2-Trichloroethane	ND
1,3-Dichlorobenzene	ND	Trichloroethylene	ND

NOTE: ND (None Detected, lower detectable limit = 2 ug/kg) as rec'd
ND* (None Detected, lower detectable limit = ug/kg) as rec'd
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB #: 9290-92406
MATRIX: SOLID

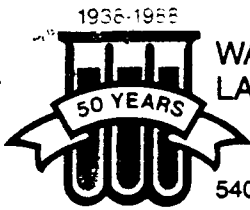
DATE RECEIVED: 4/ 6/90
DATE EXTRACTED: 4/ 6/90
DATE ANALYZED: 4/ 6/90

SAMPLE ID: INTRA-LAB BLANK

VOLATILE ORGANICS
METHOD 8010/8020 BLANK LIST

Trichlorofluoromethane	ND
Trichloropropane	ND
Vinyl chloride	ND
Xylenes	ND

NOTE: ND (None Detected, lower detectable limit = 2 ug/kg) as rec'd
ND* (None Detected, lower detectable limit = ug/kg) as rec'd
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES, INC.
Sampling, testing, mobile labs

5405 E. Schaaf Rd./P.O. Box 31454/Cleveland, OH 44131/(216) 642-9151

ANALYTICAL REPORT

Ravenna Arsenal

W/A Project No. 5255

Presented to :

John Cardamone

Cardamone Construction, Inc.

WADSWORTH/ALERT LABORATORIES, INC.

Dale L. Mori
Laboratory Manager - Cleveland

April 23, 1990



CORPORATE AND LABORATORY: North Canton, Ohio (216) 497-9396
LABORATORY: Cleveland, Ohio (216) 642-9151
LABORATORY: Bartow, Florida (813) 533-2150
SOUTHEAST REGIONAL OFFICE: Lexington, South Carolina (803) 957-6590
24-HOUR SERVICE: (216) 497-9338



WADSWORTH/ALERT
LABORATORIES, INC.

April 24, 1990

Cardamone Construction, Inc.
4865 Chaincraft Road
Garfield Heights, OH 44125

Re: Laboratory Project #: 5255
Site: Ravenna Arsenal
Attn: John Cardamone

At the request of Cardamone Construction, Inc., Wadsworth/ALERT Laboratories analyzed four (4) solid samples. The samples received April 18, 1990 were identified as U-3, U-6, Old Atlas and Freedom.

All samples received in the laboratory are included in the QA/QC plan which consists of laboratory blanks, check samples and spike/spike duplicate analysis on 20% of all samples by parameter.

The analysis was conducted by SW846 Methods as follows.

<u>Parameter</u>	<u>Method</u>
Total Metals: Cr, Pb	SW846 7000 Series

References:

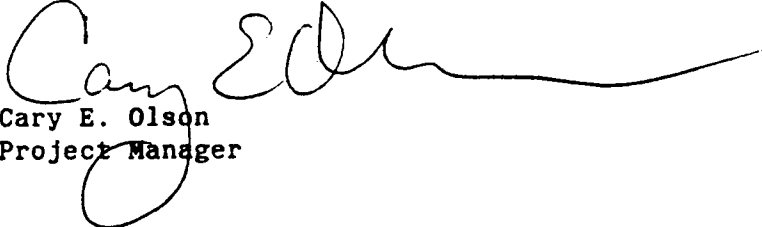
SW846 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods," Third Edition, September 1986.

This report is not a complete closure report but is supplementary information required for a closure report.

If you have any questions feel free to contact Dale Mori or myself.

Very truly yours,

Wadsworth/ALERT Laboratories, Inc.


Cary E. Olson
Project Manager



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.

DATE RECEIVED: 4/18/90

LAB #: 5255-57956

MATRIX : SOLID

SAMPLE ID : U-3

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	4/19/90	17	5 mg/kg
Lead	4/19- 4/20/90	11	10 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5255-57957
MATRIX : SOLID

DATE RECEIVED: 4/18/90

SAMPLE ID : U-6

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	4/19/90	14	5 mg/kg
Lead	4/19- 4/20/90	18	10 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5255-57958
MATRIX : SOLID

DATE RECEIVED: 4/18/90

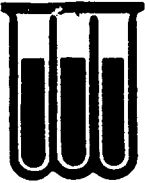
SAMPLE ID : OLD ATLAS

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	4/19/90	13	5 mg/kg
Lead	4/19- 4/20/90	ND	10 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5255-57959
MATRIX : SOLID

DATE RECEIVED: 4/18/90

SAMPLE ID : FREEDOM

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

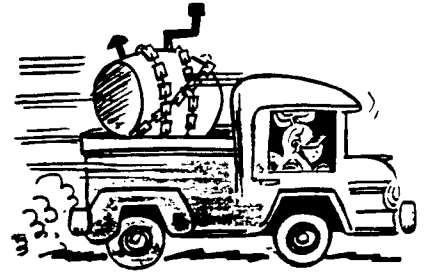
ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	4/19/90	11	5 mg/kg
Lead	4/19- 4/20/90	23	10 mg/kg

NOTE: ND (None Detected)



Cardamone
CONSTRUCTION INC.

4865
Chaincraft Road
Garfield Heights
Ohio 44125
216•581•1133
1•800•686•2476



May 16, 1990

Mr. Wayne Carkido
Ravenna Arsenal
8451 State Route 5
Ravenna, Ohio 44266-9297

Dear Mr. Carkido:

Enclosed are copies of the Analytical Reports; Project No. 4425,
#5255 and #5047 that you do not have.

If you have any questions, please feel free to call us.

Sincerely,

John S. Cardamone,
President

JSC/mb

Enclosures



WADSWORTH/ALERT
LABORATORIES, INC.
Sampling, testing, mobile labs

5405 E. Schaaf Rd./P.O. Box 31454/Cleveland, OH 44131/(216) 642-9151

ANALYTICAL REPORT

90704/Ravenna Arsenal

W/A Project No. 4425

Presented to :

John Cardamone

Cardamone Construction, Inc.

WADSWORTH/ALERT LABORATORIES, INC.

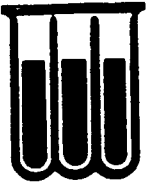
Dale L. Mori

Dale L. Mori
Laboratory Manager - Cleveland

March 12, 1990



CORPORATE AND LABORATORY: North Canton, Ohio (216) 497-9396
LABORATORY: Cleveland, Ohio (216) 642-9151
LABORATORY: Bartow, Florida (813) 533-2150
SOUTHEAST REGIONAL OFFICE: Lexington, South Carolina (803) 957-6590
24-HOUR (216) 497-9396



WADSWORTH/ALERT
LABORATORIES, INC.

March 12, 1990

Cardamone Construction, Inc.
4865 Chaincraft Road
Garfield Heights, OH 44125

Re: Laboratory Project # 4425
Site: Ravenna

Attn: John Cardamone

At the request of Cardamone Construction, Inc., Wadsworth/ALERT Laboratories analyzed 2 solid samples. The samples received February 22, 1990 were identified as Atlas Background and U-3 Supply Lines.

All samples received in the laboratory are included in the QA/QC plan which consists of laboratory blanks, check samples and spike/spike duplicate analysis on 20% of all samples by parameter.

The analysis was conducted by SW846 and EPA Methods as follows.

<u>Parameter</u>	<u>Method</u>
Benzene, Toluene, Xylenes, Ethylbenzene	SW846 8020
Total Recoverable Petroleum Hydrocarbons	SW846 9071/EPA 418.1
Total Metals: Cr, Pb	SW846 7000 Series
EP Toxicity Extraction	SW846 1310

References:

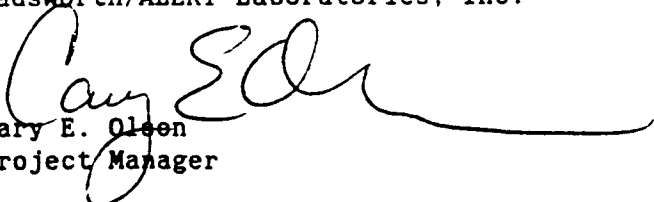
- SW846 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods," Third Edition, September 1986.
- EPA 600/4-79-02, "Methods for Chemical Analysis of Water and Wastes," March 1983.

This report is not a complete closure report but is supplementary information required for a closure report.

If you have any questions feel free to contact Dale Mori or myself.

Very truly yours,

Wadsworth/ALERT Laboratories, Inc.


Cary E. Olsen
Project Manager



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4425-54080
MATRIX: SOLID

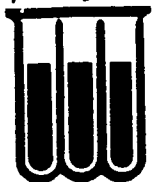
DATE RECEIVED: 2/22/90
DATE EXTRACTED: 3/ 7/90
DATE ANALYZED: 3/ 7/90

SAMPLE ID: ATLAS BACKGROUND

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	120	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4425-54080
MATRIX : SOLID

DATE RECEIVED: 2/22/90

SAMPLE ID : ATLAS BACKGROUND

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/27- 2/28/90	9.6	5 mg/kg
Lead	2/27- 2/28/90	20	10 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4425-54081
MATRIX: SOLID

DATE RECEIVED: 2/22/90
DATE EXTRACTED: 3/ 7/90
DATE ANALYZED: 3/ 7/90

SAMPLE ID: U-3 SUPPLY LINES

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	37	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4425-54081
MATRIX: SOLID

DATE RECEIVED: 2/22/90
DATE EXTRACTED: 2/26/90
DATE ANALYZED: 2/27/90

SAMPLE ID: U-3 SUPPLY LINES

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4425-54081
MATRIX : SOLID

DATE RECEIVED: 2/22/90

SAMPLE ID : U-3 SUPPLY LINES

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/28/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Chromium	3/ 1- 3/ 6/90	ND	0.05	mg/l
Lead	3/ 1/90	ND	0.1	mg/l

NOTE: ND (None Detected)

Initial pH	7.5	su
Final pH	5.1	su
Amount of acetic acid used per method	16	ml



WADSWORTH/ALERT
LABORATORIES, INC.
Sampling, testing, mobile labs

5405 E. Schaaf Rd./P.O. Box 31454/Cleveland, OH 44131/(216) 642-9151

*Wayne -
your copy*

ANALYTICAL REPORT

90704/Ravenna Arsenal

W/A Project No. 4285

*Wayne -
More results
from Cardamone*

Presented to :

John Cardamone

Cardamone Construction, Inc.

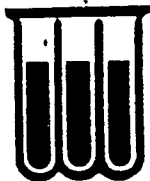
WADSWORTH/ALERT LABORATORIES, INC.

**Dale L. Mori
Laboratory Manager - Cleveland**

February 28, 1990



**CORPORATE AND LABORATORY: North Canton, Ohio (216) 497-9396
LABORATORY: Cleveland, Ohio (216) 642-9151
LABORATORY: Bartow, Florida (813) 533-2150
SOUTHEAST REGIONAL OFFICE: Lexington, South Carolina (803) 957-6590
24-HOUR ALERT LINE: (216) 497-9338**



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53530
MATRIX: SOLID

DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/20/90
DATE ANALYZED: 2/20/90

SAMPLE ID: A-61550 BOT SOUTH

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect.)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4285-53530
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : A-6 550 BOT SOUTH

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/15/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Chromium	2/19- 2/20/90	ND	0.05	mg/l
Lead	2/19- 2/20/90	ND	0.1	mg/l

NOTE: ND (None Detected)

Initial pH	7.6	su
Final pH	5.0	su
Amount of acetic acid used per method	7	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53530
MATRIX: SOLID

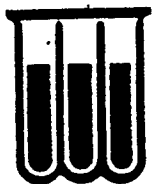
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DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: A-6 550 BOT SOUTH

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	ND	1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect.)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53531
MATRIX: SOLID

DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/20/90
DATE ANALYZED: 2/20/90

SAMPLE ID: A-6 550 BOT NORTH

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect.)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4285-53531
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : A-6 550 BOT NORTH

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/15/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	8.9	su
Final pH	5.0	su
Amount of acetic acid used per method	220	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53531
MATRIX: SOLID

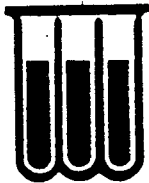
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DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: A-6 550 BOT NORTH

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	ND	1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect.)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4285-53532
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : A-6 550 LANDFILL }

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Flash Point (PMCC)	2/23/90	>210	Deg. F
pH	2/14/90	7.0	su

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53532
MATRIX: SOLID

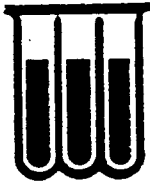
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DATE ANALYZED: 2/20/90

SAMPLE ID: A-6 550 LANDFILL 1

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4285-53532
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : A-6 550 LANDFILL /

METALS ANALYTICAL REPORT
SELECTED LIST

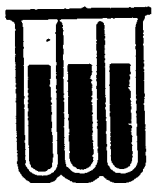
Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/15/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	7.8	su
Final pH	5.0	su
Amount of acetic acid used per method	27	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53532
MATRIX: SOLID

DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: A-6 550 LANDFILL 4

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	ND	1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53533
MATRIX: SOLID

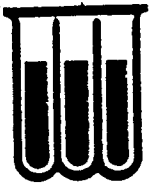
DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/20/90
DATE ANALYZED: 2/20/90

SAMPLE ID: A-1 5000 BOT WEST

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	16	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect.)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4285-53533
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : A-1 5000 BOT WEST

METALS ANALYTICAL REPORT
SELECTED LIST

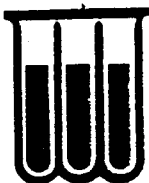
Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Chromium	2/19- 2/20/90	ND	0.05	mg/l
Lead	2/19- 2/20/90	ND	0.1	mg/l

NOTE: ND (None Detected)

Initial pH	8.8	su
Final pH	5.0	su
Amount of acetic acid used per method	72	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53533
MATRIX: SOLID

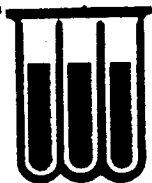
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DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: A-1 5000 BOT WEST /

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	ND	1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53534
MATRIX: SOLID

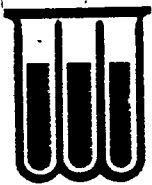
DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/20/90
DATE ANALYZED: 2/20/90

SAMPLE ID: A-155000 BOT EAST

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect.)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4285-53534
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : A-1 5000 BOT EAST/

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	8.8	su
Final pH	4.9	su
Amount of acetic acid used per method	70	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53534
MATRIX: SOLID

DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: A-1 5000 BOT EAST

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	ND	1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4285-53535
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : A-1-5000 LANDFILL

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Flash Point (PMCC)	2/23/90	>210	Deg. F
pH	2/14/90	6.7	su

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53535
MATRIX: SOLID

DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/20/90
DATE ANALYZED: 2/20/90

SAMPLE ID: A-1 5000 LANDFILL

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	100	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB # : 4285-53535
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : A-F 5000 LANDFILL

METALS ANALYTICAL REPORT
SELECTED LIST

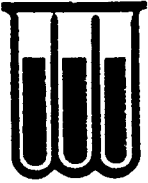
Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	7.9	su
Final pH	5.0	su
Amount of acetic acid used per method	17	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4285-53535
MATRIX: SOLID

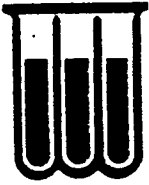
DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: A-1-5000 LANDFILL

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	1	1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect.)



WADSWORTH/ALERT
LABORATORIES, INC.

QUALITY CONTROL SECTION



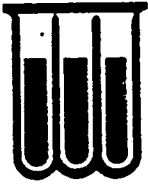
WADSWORTH/ALERT
LABORATORIES, INC.

February 28, 1990

QUALITY CONTROL NARRATIVE

Wadsworth/ALERT Laboratories, Inc. received samples from Cardamone Construction on February 13th which were sampled on February 7th and February 9th. One of the requested parameters was pH which has a recommended holding time of twenty-four hours from sampling to analysis. Due to the late arrival of the samples, the pH was analyzed past its recommended holding time.

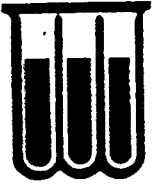
Opal Davis-Johnson
Quality Control Coordinator
Cleveland Laboratory



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
900220	Total Petroleum Hydrocarbons (S)	118	119	SOLID	(61-124)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
900219	Lead	94	100	WATER	(80-124)
	Chromium	100	98		(72-138)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
	SELECTED ORGANIC COMPOUNDS				
900216	Benzene	118	102	SOLID	(50-146)
	Toluene	84	74		(57-139)
	Xylene	83	73		(38-144)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB ID: 9290-92220
MATRIX : SOLID

DATE RECEIVED: 2/20/90
DATE EXTRACTED: 2/20/90
DATE ANALYZED: 2/20/90

SAMPLE ID: INTRA-LAB BLANK , 2 /20/90

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS BLANK REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/kg	15

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc.
LABORATORY ID : 9290-92214
SAMPLE MATRIX : SOLID

RECEIVING DATE : 2/14/90

SAMPLE ID : INTRA-LAB BLANK , 2 /14/90

**METALS ANALYTICAL BLANK REPORT
SELECTED LIST**

Leachate testing in accordance with USEPA Manual SW846 Method 1310.

EP TOXICITY EXTRACTION DATE: 2/14/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/14- 2/15/90	ND	0.05 mg/l
Lead	2/14- 2/15/90	ND	0.1 mg/l

ND - NONE DETECTED



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc.
LABORATORY ID : 9090-90219
SAMPLE MATRIX : WATER

RECEIVING DATE : 2/19/90

SAMPLE ID : INTRA-LAB BLANK , 2 /19/90

METALS ANALYTICAL BLANK REPORT
SELECTED LIST

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

ND - NONE DETECTED



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB #: 9290-92219
MATRIX: SOLID

DATE RECEIVED: 2/19/90
DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: INTRA-LAB BLANK , 2 /19/90

SELECTED ORGANIC COMPOUNDS ANALYTICAL BLANK REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	ND	1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1

NOTE: ND (None Detected)

WADSWORTH/ALERT LABORATORIES

5405 EAST SCHAAF RD./CLEVELAND, OH 44131
(216) 642-9151

1372

Chain-of Custody Record

PROJ. NO.	PROJECT NAME/LOCATION		STATION LOCATION	NO. OF CON-TAINERS	PARAMETER				REMARKS					
	DATE	TIME			COMP	GRAB	ZPPH	BTKF		EPbX LEAD	EPbTX CHROMIUM	FLASH TRAMP	PB	
40704	RAVENNA													
SAMPLERS: (Signature) G.E.M. x [Signature]														
#1	2/7	PM	X	X	X	X	X	X	X	X	X	X		
#2	2/7	PM	X	X	X	X	X	X	X	X	X	X		
#3	2/7	PM	X	X	X	X	X	X	X	X	X	X		
#1	2/9	AM	X	X	X	X	X	X	X	X	X	X		
#2	2/9	AM	X	X	X	X	X	X	X	X	X	X		
#3	2/9	AM	X	X	X	X	X	X	X	X	X	X		
Relinquished by: (Signature) [Signature] Date / Time [Date] Received by: (Signature) [Signature] Date / Time [Date]														
Relinquished by: (Signature) [Signature] Date / Time [Date] Received by: (Signature) [Signature] Date / Time [Date]														
Relinquished by: (Signature) [Signature] Date / Time [Date] Received by: (Signature) [Signature] Date / Time [Date]														
Remarks										INVOICE JOHN CAEDANOME (2157) RESULTS TO G.E.M				



WADSWORTH/ALERT
LABORATORIES, INC.
Sampling, testing, mobile labs

5405 E. Schaaf Rd./P.O. Box 31454/Cleveland, OH 44131/(216) 642-9151

ANALYTICAL REPORT

90704/Ravenna Arsenal

W/A Project No. 4286

Presented to :

John Cardamone

Cardamone Construction, Inc.

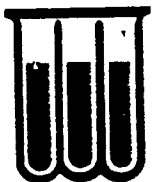
WADSWORTH/ALERT LABORATORIES, INC.

Dale L. Mori
Laboratory Manager - Cleveland

February 28, 1990



CORPORATE AND LABORATORY: North Canton, Ohio (216) 497-9396
LABORATORY: Cleveland, Ohio (216) 642-9151
LABORATORY: Bartow, Florida (813) 533-2150
SOUTHEAST REGIONAL OFFICE: Lexington, South Carolina (803) 957-6590



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53536
MATRIX: SOLID

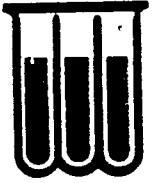
DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/26/90

SAMPLE ID: TANK #47 FREEDOM BOT. SOUTH /

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4286-53536
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : TANK #47 FREEDOM BOT. SOUTH

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Chromium	2/19- 2/20/90	ND	0.05	mg/l
Lead	2/19- 2/20/90	ND	0.1	mg/l

NOTE: ND (None Detected)

Initial pH	6.7	su
Final pH	5.2	su
Amount of acetic acid used per method	2	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53536
MATRIX: SOLID

DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: TANK #47. FREEDOM BOT. SOUTH

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53537
MATRIX: SOLID

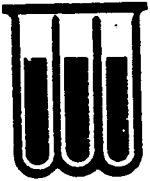
DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/26/90

SAMPLE ID: TANK #47 FREEDOM BOT. NORTH

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect.)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4286-53537
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : TANK #47 FREEDOM BOT. NORTH

METALS ANALYTICAL REPORT
SELECTED LIST

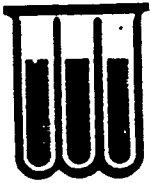
Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Chromium	2/19- 2/20/90	ND	0.05	mg/l
Lead	2/19- 2/20/90	ND	0.1	mg/l

NOTE: ND (None Detected)

Initial pH	7.0	su
Final pH	5.1	su
Amount of acetic acid used per method	4	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4286-53538
MATRIX : SOLID

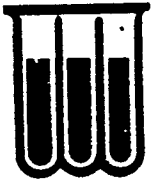
DATE RECEIVED: 2/13/90

SAMPLE ID : TANK #47 LAND FILL

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Flash Point (PMCC)	2/23/90	>210	Deg.F
pH	2/14/90	7.1	su

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53538
MATRIX: SOLID

DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/26/90

SAMPLE ID: TANK #47 LAND FILL

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	49	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4286-53538
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : TANK #47 LAND FILL

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/15/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	7.7	su
Final pH	5.0	su
Amount of acetic acid used per method	14	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53538
MATRIX: SOLID

DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/20/90
DATE ANALYZED: 2/20/90

SAMPLE ID: TANK #47 LAND FILL

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53539
MATRIX: SOLID

DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/26/90

SAMPLE ID: POST #24 BOT. SOUTH

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	1,200	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4286-53539
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : POST #24 BOT. SOUTH

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	6.1	su
Final pH	4.9	su
Amount of acetic acid used per method	1.5	ml.



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53539
MATRIX: SOLID

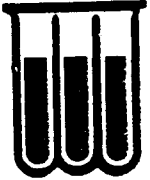
DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: POST #24 BOT. SOUTH J

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53540
MATRIX: SOLID

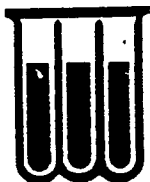
DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/26/90

SAMPLE ID: POST #24 BOT. NORTH

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	300	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4286-53540
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : POST #24 BOT. NORTH

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	6.0	su
Final pH	4.8	su
Amount of acetic acid used per method	1	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53540
MATRIX: SOLID

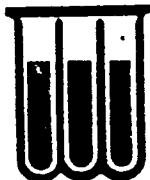
DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: POST #24 BOT. NORTH

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4286-53541
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : POST #24 LANDFILL

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Flash Point (PMCC)	2/23/90	>210	Deg. F
pH	2/14/90	5.7	su

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53541
MATRIX: SOLID

DATE RECEIVED: 2/13/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/26/90

SAMPLE ID: POST #24 LANDFILL

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	890	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4286-53541
MATRIX : SOLID

DATE RECEIVED: 2/13/90

SAMPLE ID : POST #24 LANDFILL

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	6.9	su
Final pH	4.9	su
Amount of acetic acid used per method	24	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4286-53541
MATRIX: SOLID

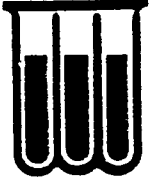
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DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: POST #24 LANDFILL

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

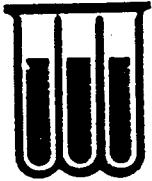
PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	1.2	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect.)



WADSWORTH/ALERT
LABORATORIES, INC.

QUALITY CONTROL SECTION



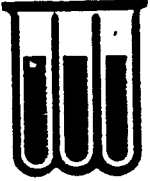
WADSWORTH/ALERT
LABORATORIES, INC.

February 28, 1990

QUALITY CONTROL NARRATIVE

Wadsworth/ALERT Laboratories, Inc. received samples from Cardamone Construction on February 13th which were sampled on February 7th and February 9th. One of the requested parameters was pH which has a recommended holding time of twenty-four hours from sampling to analysis. Due to the late arrival of the samples, the pH was analyzed past its recommended holding time.

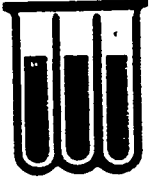
Opal Davis-Johnson
Quality Control Coordinator
Cleveland Laboratory



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

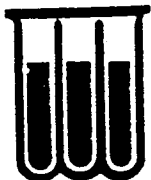
LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
53538	Total Petroleum Hydrocarbons (S)	102	104	SOLID	(61-124)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

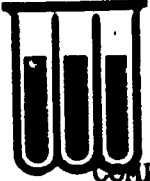
LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
53536	Lead	94	100	WATER	(80-124)
	Chromium	100	98		(72-138)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
	SELECTED ORGANIC COMPOUNDS				
900216	Benzene	118	102	SOLID	(50-146)
	Toluene	84	74		(57-139)
	Xylene	83	73		(38-144)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB ID: 9290-92223
MATRIX : SOLID

DATE RECEIVED: 2/23/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/23/90

SAMPLE ID: INTRA-LAB BLANK , 2 /23/90

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS BLANK REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/kg	15

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc.
LABORATORY ID : 9290-92214
SAMPLE MATRIX : SOLID

RECEIVING DATE : 2/14/90

SAMPLE ID : INTRA-LAB BLANK , 2 /14/90

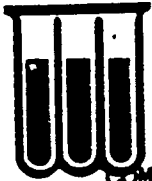
**METALS ANALYTICAL BLANK REPORT
SELECTED LIST**

Leachate testing in accordance with USEPA Manual SW846 Method 1310.

EP TOXICITY EXTRACTION DATE: 2/14/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/14- 2/15/90	ND	0.05 mg/l
Lead	2/14- 2/15/90	ND	0.1 mg/l

ND - NONE DETECTED



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc.
LABORATORY ID : 9090-90219
SAMPLE MATRIX : WATER

RECEIVING DATE : 2/19/90

SAMPLE ID : INTRA-LAB BLANK , 2 /19/90

**METALS ANALYTICAL BLANK REPORT
SELECTED LIST**

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

ND - NONE DETECTED



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB #: 9290-92219
MATRIX: SOLID

DATE RECEIVED: 2/19/90
DATE EXTRACTED: 2/19/90
DATE ANALYZED: 2/19/90

SAMPLE ID: INTRA-LAB BLANK , 2 /19/90

SELECTED ORGANIC COMPOUNDS ANALYTICAL BLANK REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB #: 9290-92220
MATRIX: SOLID

DATE RECEIVED: 2/20/90
DATE EXTRACTED: 2/20/90
DATE ANALYZED: 0/20/90

SAMPLE ID: INTRA-LAB BLANK , 2 /20/90

SELECTED ORGANIC COMPOUNDS ANALYTICAL BLANK REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)

WADSWORTH/ALERT LABORATORIES
 5405 EAST SCHAAF RD./CLEVELAND, OH 44131
 (216) 642-9151

1370

Chain-of Custody Record

PROJ. NO. 09704	PROJECT NAME/LOCATION BALEENNA		STATION LOCATION			NO. OF CON-TAINERS	PARAMETER	PARAMETER												
			COMP	GRAB				TRPH	BTEX	EP20LEAD	EP70X CHROMIUM	FISH POINT	PB							
			DATE	TIME																
#1	2/7	PM	X	X	TANK #47 FREEDOM POT SWATH	1	X	X	X	X	X	X								
#2	2/7	PM	X	X	TANK #47 FREEDOM POT SWATH	1	X	X	X	X	X	X								
#3	2/7	PM	X	X	TANK #47 LAUNDRELL	1	X	X	X	X	X	X								
#1	2/9	AM	X	X	PST #24 BOT. SWATH	1	X	X	X	X	X	X								
#2	2/9	AM	X	X	PST #24 BOT. SWATH	1	X	X	X	X	X	X								
#3	2/9	AM	X	X	PST #24 LAUNDRELL	1	X	X	X	X	X	X								
Relinquished by: (Signature) CARDAMONE CONSTRUCTION			Date / Time			Received by: (Signature) Donald O'Neil			Date / Time			Relinquished by: (Signature)			Date / Time			Received by: (Signature)		
Relinquished by: (Signature)			Date / Time			Received for Laboratory by: (Signature)			Date / Time			Relinquished by: (Signature)			Date / Time			Received by: (Signature)		
Relinquished by: (Signature)			Date / Time			Received for Laboratory by: (Signature)			Date / Time			Relinquished by: (Signature)			Date / Time			Received by: (Signature)		
Remarks			Date / Time			Remarks			Date / Time			Remarks			Date / Time			Remarks		
						FAUCO TO M CADAMONE CONST						RESULTS TO G.E.M								



WADSWORTH/ALERT
LABORATORIES, INC.
Sampling, testing, mobile labs

5405 E. Schaaf Rd./P.O. Box 31454/Cleveland, OH 44131/(216) 642-9151

ANALYTICAL REPORT

90704/Ravenna Arsenal

W/A Project No. 4306

Presented to :

John Cardamone

Cardamone Construction, Inc.

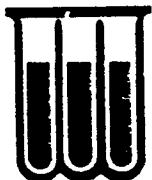
WADSWORTH/ALERT LABORATORIES, INC.

Dale L. Mori
Laboratory Manager - Cleveland

February 28, 1990



CORPORATE AND LABORATORY: North Canton, Ohio (216) 497-9396
LABORATORY: Cleveland, Ohio (216) 642-9151
LABORATORY: Bartow, Florida (813) 533-2150
SOUTHEAST REGIONAL OFFICE: Lexington, South Carolina (803) 957-6590
24-HOUR ALERT LINE: (216) 497-9338



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4306-53656
MATRIX: SOLID

DATE RECEIVED: 2/14/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/26/90

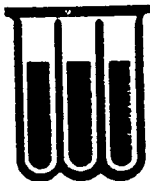
SAMPLE ID: ~~EAST~~BOTTOM

ATLAS

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	16	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4306-53656
MATRIX : SOLID

DATE RECEIVED: 2/14/90

SAMPLE ID : EAST BOTTOM

METALS ANALYTICAL REPORT
SELECTED LIST

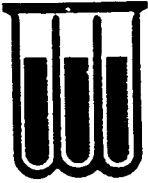
Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	8.9	su
Final pH	4.9	su
Amount of acetic acid used per method	320	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4306-53656
MATRIX: SOLID

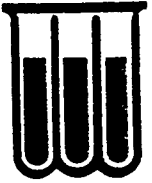
DATE RECEIVED: 2/14/90
DATE EXTRACTED: 2/16/90
DATE ANALYZED: 2/16/90

SAMPLE ID: ~~EAST BOTTOM~~

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4306-53657
MATRIX: SOLID

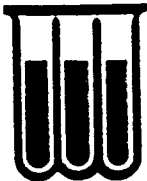
DATE RECEIVED: 2/14/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/26/90

SAMPLE ID: ~~WEST WALL~~

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4306-53657
MATRIX : SOLID

DATE RECEIVED: 2/14/90

SAMPLE ID : ~~WESTWALL~~

METALS ANALYTICAL REPORT
SELECTED LIST

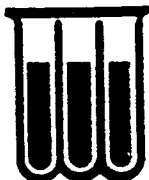
Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	9.0	su
Final pH	4.9	su
Amount of acetic acid used per method	170	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4306-53657
MATRIX: SOLID

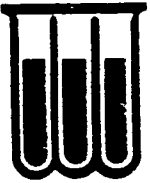
DATE RECEIVED: 2/14/90
DATE EXTRACTED: 2/16/90
DATE ANALYZED: 2/16/90

SAMPLE ID: WEST WALL

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4306-53658
MATRIX : SOLID

DATE RECEIVED: 2/14/90

SAMPLE ID : ~~LAND FILL PILE~~

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Flash Point (PMCC)	2/23/90	>210	Deg.F
pH	2/15/90	7.8	su

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4306-53658
MATRIX: SOLID

DATE RECEIVED: 2/14/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/26/90

SAMPLE ID: LANDFILL PILE

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	170	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4306-53658
MATRIX : SOLID

DATE RECEIVED: 2/14/90

SAMPLE ID : ~~EAND FILE PIPE~~

METALS ANALYTICAL REPORT
SELECTED LIST

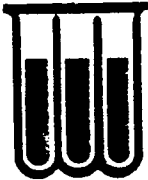
Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 2/16/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	8.6	su
Final pH	4.8	su
Amount of acetic acid used per method	75	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4306-53658
MATRIX: SOLID

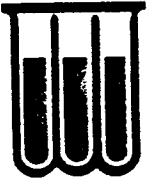
DATE RECEIVED: 2/14/90
DATE EXTRACTED: 2/16/90
DATE ANALYZED: 2/16/90

SAMPLE ID: ~~LAND FILL PILE~~

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

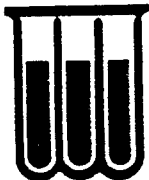
PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

QUALITY CONTROL SECTION



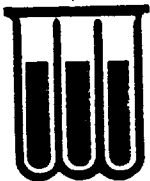
WADSWORTH/ALERT
LABORATORIES, INC.

February 28, 1990

QUALITY CONTROL NARRATIVE

Wadsworth/ALERT Laboratories, Inc. received samples from Cardamone Construction on February 13th which were sampled on February 6th. One of the requested parameters was pH which has a recommended holding time of twenty-four hours from sampling to analysis. Due to the late arrival of the samples, the pH was analyzed past its recommended holding time.

Opal Davis-Johnson
Quality Control Coordinator
Cleveland Laboratory



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

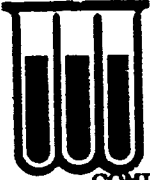
LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
53657	Lead	108	110	WATER	(80-124)
	Chromium	108	108		(72-138)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
	SELECTED ORGANIC COMPOUNDS				
900216	Benzene	118	102	SOLID	(50-146)
	Toluene	84	74		(57-139)
	Xylene	83	73		(38-144)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB ID: 9290-92223
MATRIX : SOLID

DATE RECEIVED: 2/23/90
DATE EXTRACTED: 2/23/90
DATE ANALYZED: 2/23/90

SAMPLE ID: INTRA-LAB BLANK , 2 /23/90

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS BLANK REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/kg	15

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc.
LABORATORY ID : 9290-92214
SAMPLE MATRIX : SOLID

RECEIVING DATE : 2/14/90

SAMPLE ID : INTRA-LAB BLANK , 2 /14/90

**METALS ANALYTICAL BLANK REPORT
SELECTED LIST**

Leachate testing in accordance with USEPA Manual SW846 Method 1310.

EP TOXICITY EXTRACTION DATE: 2/14/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/14- 2/15/90	ND	0.05 mg/l
Lead	2/14- 2/15/90	ND	0.1 mg/l

ND - NONE DETECTED



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc.
LABORATORY ID : 9090-90219
SAMPLE MATRIX : WATER

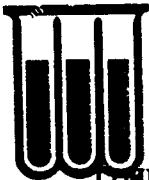
RECEIVING DATE : 2/19/90

SAMPLE ID : INTRA-LAB BLANK , 2 /19/90

**METALS ANALYTICAL BLANK REPORT
SELECTED LIST**

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

ND - NONE DETECTED



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB #: 9290-92216
MATRIX: SOLID

DATE RECEIVED: 2/16/90
DATE EXTRACTED: 2/16/90
DATE ANALYZED: 2/16/90

SAMPLE ID: INTRA-LAB BLANK , 2 /16/90

SELECTED ORGANIC COMPOUNDS ANALYTICAL BLANK REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)

WADSWORTH/ALERT LABORATORIES

5405 EAST SCHAAF RD./CLEVELAND, OH 44131

(216) 642-9151

2082

Chain-of Custody Record

PROJ. NO.	PROJECT NAME/LOCATION	NO. OF CONTAINERS	PARAMETER					REMARKS
			TOX	BIKE	EPID	EPID	FLUOR	
90704	Harwood							
SAMPLERS: (Signature) <i>Harwood</i>								
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION			
#1	2/6/90	3:01		X	EAST BOTTOM (ATLAS)		X	X
#2	2/6/90	2:58		X	WEST well (ATLAS)		X	X
#3	2/6/90	2:53	X		LAND FILL pile (ATLAS)		X	X
Relinquished by: (Signature) _____ Date / Time _____ Received by: (Signature) _____								
Relinquished by: (Signature) _____ Date / Time _____ Received by: (Signature) _____								
Relinquished by: (Signature) _____ Date / Time _____ Received by: (Signature) _____								
Relinquished by: (Signature) _____ Date / Time _____ Received by: (Signature) _____								

2/23/90

10AM
Phone calls
↓
Condomone
Dove - gem test
JILBERT (214) 781-4120
A-6 550

No Background
Samples as of yet.

TRPH - ND
BSOUTH
CHROM - ND
LEAD - ND
BTXE ND
NORTH END
TRPH ND
CHROM ND LEACHABLE
LEAD ND LEACHABLE
BTXE ND

LAND FILL SPOILS
PH-7 ND
TRPH ND LEACHABLE
CHROM ND LEACHABLE
LEAD ND LEACHABLE
EYLENE BTXE ND

can be put back
in hole?

A-1 5000 gal @ Power House

BOTT WEST
TRPH - 16
CHROME ND
LEAD ND
BTXE ND
BOTTOM EAST
TRPH ND
CHROM ND
LEAD ND
BTXE ND

Parts/Million

leads & chrome
leachables

LAND FILL SPOILS
PH-6.7
TRPH - 100
CHROM - ND
LEAD - ND
EYLENE BTXE - 1 MICROGRAM

(non hazardous
but able to put back
in hole?)

HAVENS AND EMERSON INCORPORATED

CONSULTING ENGINEERS

ENVIRONMENTAL
ENGINEERING

GARY M. SIEGEL
ROBERT L. KAERCHER
LAWRENCE J. PAPES
JAMES L. BUTTLE
JAMES P. HARRIS
JOSEPH E. DIETERMAN
JOSEPH J. BASISTA
DAVID L. KLUNZINGER
JEFFREY D. SHARON
LARRY H. SOBEL
KENNETH L. ZACHARIAS

CLEVELAND OFFICE:
BOND COURT BUILDING
1300 EAST 9TH STREET
CLEVELAND, OHIO 44114
216/621-2407

WATER RESOURCES
POLLUTION CONTROL
SEWERAGE-DRAINAGE
WASTEWATER TREATMENT
INDUSTRIAL WASTES
SOLID WASTES DISPOSAL
AIR POLLUTION CONTROL
RATE INVESTIGATIONS
SANITARY LABORATORIES
AREAWIDE PLANNING

June 15, 1989

Division of State Fire Marshall
Inspection Bureau
8895 East Main Street
Reynoldsburg, OH 43068

Attention: Ms. Kate Greth

Dear Ms. Greth:

Havens and Emerson, Inc. (H&E) has been retained by Ravenna Arsenal, Inc. (RAI) to submit a tank removal permit application and produce specifications for the actual tank removal.

Enclosed please find a permit application and fee for the removal of twelve former fuel storage tanks at the Ravenna Arsenal in Ravenna, Ohio. Also included are engineering plans of eleven of the twelve tank configurations. Ravenna Arsenal personnel are currently searching for plans for the twelfth tank (No. 52). If available, a plan for this tank will be forwarded, or a sketch will be produced. A summary of the twelve tanks is provided below.

<u>Arsenal Tank No</u>	<u>Location</u>	<u>Capacity</u>	<u>Registered</u>
13	Building U-6 (North)	12,000	Yes
14	Building U-6 (South)	12,000	Yes
15	Building U-3 (South)	12,000	Yes
16	Building U-3 (North)	12,000	Yes
17	Building A-6 (North)	3,900	Yes
18	Building A-6 (Center)	3,900	Yes
19	Building A-6 (South)	3,900	Yes
--	Building A-6 (East)	550	No
37	Building A-1	5,000	Yes
47	Post 32 (Freedom Gate)	500	No
10	Post 24 (Charlestown)	500	No
52	Old Atlas - Boiler House	1,000	Yes



Ms. Kate Greth
June 15, 1989
Page 2

The plans provided illustrate the locations of tank piping and existing and former buildings. Tank Nos. 10 and 47 are located near former gatehouses and are approximately 70' and 120', respectively, from the Arsenal property line. The Arsenal property is relatively large (over 22,000 acres) and none of the other tank locations is within one half mile of the property border. Hence, for the remaining ten tanks, the distance to the property line is probably not applicable.

As discussed above, H&E is also preparing specifications for the actual tank removal. Using these specifications as a scope of work, RAI will award the tank removal contract through competitive bidding. At this time, it is not possible to complete Item No. 4 in the permit application, "Contractor Information."

I will provide a plan or sketch of the twelfth tank (No. 52) and will contact you in several weeks regarding the status of the permit application. Should you have any questions or comments, please do not hesitate to contact Havens and Emerson.

Very truly yours,

HAVENS AND EMERSON, INC.

David A. Shaper
David A. Shaper

DAS:il
Enclosures

HAVENS AND EMERSON, INC.
CONSULTING ENGINEERS
BOND COURT BUILDING
CLEVELAND, OHIO 44114

18138

June 15 19 89

6-68
410

PAY TO THE ORDER OF STATE FIRE MARSHAL

\$ 50.00

PAYED 500000

DOLLARS

AMERITRUST COMPANY
NATIONAL ASSOCIATION
MAIN OFFICE
900 EUCLID AVENUE
CLEVELAND, OHIO 44101-0937

Ameritrust

HAVENS AND EMERSON, INC.

David A. Shaper

FOR _____

⑈018138⑈ ⑆041000687⑆ 50015⑈0225⑈

HAVENS AND EMERSON, INC.

HAVENS AND EMERSON
INCORPORATED

CONSULTING ENGINEERS

ENVIRONMENTAL
ENGINEERING

GARY M. SIEGEL
ROBERT L. KAERCHER
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JOSEPH E. DIETERMAN
JOSEPH J. BASISTA
DAVID L. KLUNZINGER
JEFFREY D. SHARON
LARRY H. SOBEL
KENNETH L. ZACHARIAS

CLEVELAND OFFICE:

BOND COURT BUILDING
1300 EAST 9TH STREET
CLEVELAND, OHIO 44114
216/621-2407

WATER RESOURCES
POLLUTION CONTROL
SEWERAGE-DRAINAGE
WASTEWATER TREATMENT
INDUSTRIAL WASTES
SOLID WASTES DISPOSAL
AIR POLLUTION CONTROL
RATE INVESTIGATIONS
SANITARY LABORATORIES
AREAWIDE PLANNING

June 21, 1989

Division of State Fire Marshal
Inspection Bureau
8895 East Main Street
Reynoldsburg, OH 43068

Attn: Ms. Kate Greth

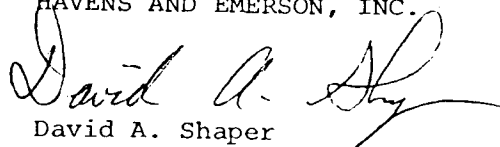
Dear Ms. Greth:

The enclosed sketch is intended to complete the tank removal permit application that Havens and Emerson (H&E) has prepared on behalf of the Ravenna Arsenal, Inc. This sketch is a schematic of Tank No. 52, the Old Atlas Boiler House tank. Arsenal personnel have no plans for this tank in their files; the sketch was produced from field observations. The tank is located by a former boiler house that was razed; the area is currently used for the storage of scrap metal.

Should you need any additional information to approve the permit application, please do not hesitate to contact Havens and Emerson.

Very truly yours,

HAVENS AND EMERSON, INC.


David A. Shaper

DAS/sb

Enclosure



Approximation of Cubic Yds

Old Atlas	75 yd ³	} ≈ 2300 yd ³
Freedom	35 yd ³	
U-6	600 yd ³	
U-3	750 yd ³	
3-3900 + 1-extra 550	550 yd ³	
A-1	200	
Charlestown	100	



WADSWORTH/ALERT
LABORATORIES, INC.
Sampling, testing, mobile labs

5405 E. Schaaf Rd./P.O. Box 31454/Cleveland, OH 44131/(216) 642-9151

ANALYTICAL REPORT

Wayne -
Your copies of
Cardamone lab
results

SMc

Ravenna Arsenal

W/A Project No. 5048

Presented to :

John Cardamone

Cardamone Construction, Inc.

WADSWORTH/ALERT LABORATORIES, INC.

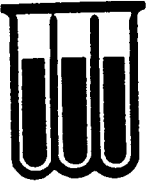
Dale L. Mori

Dale L. Mori
Laboratory Manager - Cleveland

April 11, 1990



CORPORATE AND LABORATORY: North Canton, Ohio (216) 497-9396
LABORATORY: Cleveland, Ohio (216) 642-9151
LABORATORY: Bartow, Florida (813) 533-2150
SOUTHEAST REGIONAL OFFICE: Lexington, South Carolina (803) 957-6590



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5048-57035
MATRIX: SOLID

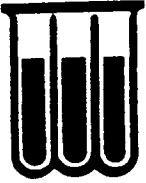
DATE RECEIVED: 4/ 5/90
DATE EXTRACTED: 4/ 6/90
DATE ANALYZED: 4/ 6/90

SAMPLE ID: SOUTH EAST BOTTOM

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5048-57035
MATRIX : SOLID

DATE RECEIVED: 4/ 5/90

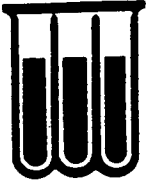
SAMPLE ID : SOUTH EAST BOTTOM

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	4/ 9- 4/10/90	5.4	5 mg/kg
Lead	4/ 9- 4/10/90	ND	10 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5048-57035
MATRIX : SOLID

DATE RECEIVED: 4/ 5/90

SAMPLE ID : SOUTH EAST BOTTOM

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 4/ 6/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	4/ 6/90	ND	0.05 mg/l
Lead	4/ 6/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	6.9	su
Final pH	5.1	su
Amount of acetic acid used per method	2	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5048-57035
MATRIX: SOLID

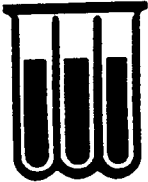
DATE RECEIVED: 4/ 5/90
DATE EXTRACTED: 4/ 7/90
DATE ANALYZED: 4/ 7/90

SAMPLE ID: SOUTH EAST BOTTOM

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	ND	4
Benzene	ND	4
Toluene	ND	4
Ethylbenzene	ND	4

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5048-57036
MATRIX: SOLID

DATE RECEIVED: 4/ 5/90
DATE EXTRACTED: 4/ 6/90
DATE ANALYZED: 4/ 6/90

SAMPLE ID: PILE

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5048-57036
MATRIX : SOLID

DATE RECEIVED: 4/ 5/90

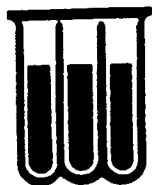
SAMPLE ID : PILE

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	4/ 9- 4/10/90	6.1	5 mg/kg
Lead	4/ 9- 4/10/90	ND	10 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5048-57036
MATRIX : SOLID

DATE RECEIVED: 4/ 5/90

SAMPLE ID : PILE

METALS ANALYTICAL REPORT
SELECTED LIST

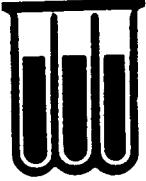
Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 4/ 6/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Chromium	4/ 6/90	ND	0.05	mg/l
Lead	4/ 6/90	ND	0.1	mg/l

NOTE: ND (None Detected)

Initial pH	5.8	su
Final pH	5.1	su
Amount of acetic acid used per method	1.3	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5048-57036
MATRIX: SOLID

DATE RECEIVED: 4/ 5/90
DATE EXTRACTED: 4/ 5/90
DATE ANALYZED: 4/ 5/90

SAMPLE ID: PILE

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	ND	5
Benzene	ND	5
Toluene	ND	5
Ethylbenzene	ND	5

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5048-57037
MATRIX: SOLID

DATE RECEIVED: 4/ 5/90
DATE EXTRACTED: 4/ 6/90
DATE ANALYZED: 4/ 6/90

SAMPLE ID: SOUTH WEST BOTTOM

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	27	15

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5048-57037
MATRIX : SOLID

DATE RECEIVED: 4/ 5/90

SAMPLE ID : SOUTH WEST BOTTOM

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	4/ 9- 4/10/90	ND	5 mg/kg
Lead	4/ 9- 4/10/90	ND	10 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 5048-57037
MATRIX : SOLID

DATE RECEIVED: 4/ 5/90

SAMPLE ID : SOUTH WEST BOTTOM

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 4/ 6/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	4/ 6/90	ND	0.05 mg/l
Lead	4/ 6/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	8.4	su
Final pH	5.0	su
Amount of acetic acid used per method	40	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 5048-57037
MATRIX: SOLID

DATE RECEIVED: 4/ 5/90
DATE EXTRACTED: 4/ 6/90
DATE ANALYZED: 4/ 6/90

SAMPLE ID: SOUTH WEST BOTTOM

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	0.2	0.2
Benzene	0.2	0.2
Toluene	ND	0.2
Ethylbenzene	0.2	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
900320	Total Petroleum Hydrocarbons (S)	102	72	SOLID	(60-127)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

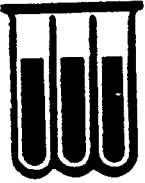
LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
56059	Chromium	102	104	WATER	(87-132)
	Lead	103	104		(75-130)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
	SELECTED ORGANIC COMPOUNDS				
900316	Benzene	102	98	SOLID	(52-132)
	Toluene	90	86		(59-133)
	Xylene	81	80		(50-131)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB ID: 9290-92326
MATRIX : SOLID

DATE RECEIVED: 3/26/90
DATE EXTRACTED: 3/26/90
DATE ANALYZED: 3/26/90

SAMPLE ID: INTRA-LAB BLANK , 3 /26/90

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS BLANK REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/kg	17

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc.
LABORATORY ID : 9090-90327
SAMPLE MATRIX : WATER

RECEIVING DATE : 3/27/90

SAMPLE ID : INTRA-LAB BLANK , 3 /27/90

METALS ANALYTICAL BLANK REPORT
SELECTED LIST

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	3/27- 3/28/90	ND	0.05 mg/l
Lead	3/27- 3/28/90	ND	0.1 mg/l



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc.
LABORATORY ID : 9290-92327
SAMPLE MATRIX : SOLID

RECEIVING DATE : 3/27/90

SAMPLE ID : INTRA-LAB BLANK , 3 /27/90

**METALS ANALYTICAL BLANK REPORT
SELECTED LIST**

Leachate testing in accordance with USEPA Manual SW846 Method 1310.

EP TOXICITY EXTRACTION DATE: 3/27/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	3/27- 3/28/90	ND	0.05 mg/l
Lead	3/27/90	ND	0.1 mg/l



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB #: 9290-92323
MATRIX: SOLID

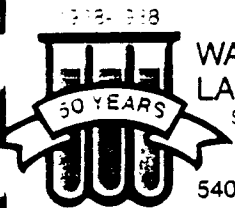
DATE RECEIVED: 3/23/90
DATE EXTRACTED: 3/23/90
DATE ANALYZED: 3/23/90

SAMPLE ID: INTRA-LAB BLANK , 3 /23/90

SELECTED ORGANIC COMPOUNDS ANALYTICAL BLANK REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	ND	1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.
Sampling, testing, mobile labs

5405 E. Schaaf Rd./P.O. Box 31454/Cleveland, OH 44131/(216) 642-9151

ANALYTICAL REPORT

Ravenna Arsenal

W/A Project No. 4871

Presented to :

John Cardamone

Cardamone Construction, Inc.

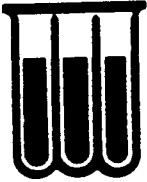
WADSWORTH/ALERT LABORATORIES, INC.

Dale L. Mori
Laboratory Manager - Cleveland

March 30, 1990



CORPORATE AND LABORATORY: North Canton, Ohio (216) 497-9396
LABORATORY: Cleveland, Ohio (216) 642-9151
LABORATORY: Bartow, Florida (813) 533-2150
SOUTHEAST REGIONAL OFFICE: Lexington, South Carolina (803) 957-6590



WADSWORTH/ALERT
LABORATORIES, INC.

April 3, 1990

Cardamone Construction, Inc.
4865 Chaincraft Road
Garfield Heights, OH 44125

Re: Laboratory Project #: 4871
Site: Ravenna Arsenal
Attn: John Cardamone

At the request of Cardamone Construction, Inc., Wadsworth/ALERT Laboratories analyzed 2 solid samples. The samples received March 23, 1990 were identified as North Bottom and South Bottom.

All samples received in the laboratory are included in the QA/QC plan which consists of laboratory blanks, check samples and spike/spike duplicate analysis on 20% of all samples by parameter.

The analysis was conducted by SW846 and EPA Methods as follows.

<u>Parameter</u>	<u>Method</u>
Benzene, Toluene, Xylenes, Ethylbenzene	SW846 8020
Total Recoverable Petroleum Hydrocarbons	SW846 9071/EPA 418.1
Metals: Cr, Pb	SW846 7000 Series
EP Toxicity Extraction	SW846 1310

References:

SW846 "Test Methods for Evaluating Solid Waste Physical/Chemical
Methods," Third Edition, September 1986.

This report is not a complete closure report but is supplementary information required for a closure report.

If you have any questions feel free to contact Dale Mori or myself.

Very truly yours,

Wadsworth/ALERT Laboratories, Inc.


Cary E. Olson
Project Manager



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4871-56059
MATRIX: SOLID

DATE RECEIVED: 3/23/90
DATE EXTRACTED: 3/26/90
DATE ANALYZED: 3/26/90

SAMPLE ID: #1 NORTH BOTTOM

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	17

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4871-56059
MATRIX : SOLID

DATE RECEIVED: 3/23/90

SAMPLE ID : #1 NORTH BOTTOM

METALS ANALYTICAL REPORT
SELECTED LIST

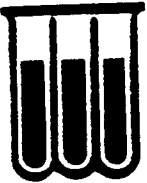
Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 3/27/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	3/27- 3/28/90	ND	0.05 mg/l
Lead	3/27- 3/28/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	6.6	su
Final pH	5.1	su
Amount of acetic acid used per method	6	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4871-56059
MATRIX: SOLID

DATE RECEIVED: 3/23/90
DATE EXTRACTED: 3/23/90
DATE ANALYZED: 3/23/90

SAMPLE ID: #1 NORTH BOTTOM

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	3.2	2
Benzene	ND	2
Toluene	ND	2
Ethylbenzene	ND	2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4871-56060
MATRIX: SOLID

DATE RECEIVED: 3/23/90
DATE EXTRACTED: 3/26/90
DATE ANALYZED: 3/26/90

SAMPLE ID: #2 SOUTH BOTTOM

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	500	17

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Cardamone Construction, Inc.
LAB #: 4871-56060
MATRIX : SOLID

DATE RECEIVED: 3/23/90

SAMPLE ID : #2 SOUTH BOTTOM

METALS ANALYTICAL REPORT
SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310

EP EXTRACTION DATE: 3/27/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	3/27- 3/28/90	ND	0.05 mg/l
Lead	3/27- 3/28/90	ND	0.1 mg/l

NOTE: ND (None Detected)

Initial pH	8.7	su
Final pH	5.0	su
Amount of acetic acid used per method	70	ml



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4871-56060
MATRIX: SOLID

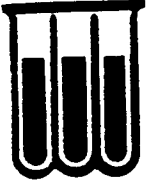
DATE RECEIVED: 3/23/90
DATE EXTRACTED: 3/23/90
DATE ANALYZED: 3/23/90

SAMPLE ID: #2 SOUTH BOTTOM

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

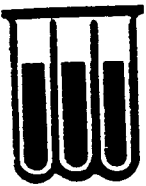
PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.1
Benzene	ND	0.1
Toluene	ND	0.1
Ethylbenzene	ND	0.1

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)



WADSWORTH/ALERT
LABORATORIES, INC.

QUALITY CONTROL SECTION



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

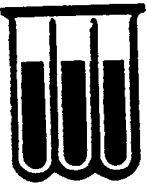
LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
900320	Total Petroleum Hydrocarbons (S)	102	72	SOLID	(60-127)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

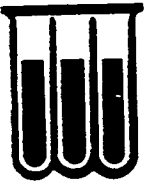
LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
56059	Chromium	102	104	WATER	(87-132)
	Lead	103	104		(75-130)



WADSWORTH/ALERT
LABORATORIES, INC.

MATRIX SPIKE DATA

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
	SELECTED ORGANIC COMPOUNDS				
900316	Benzene	102	98	SOLID	(52-132)
	Toluene	90	86		(59-133)
	Xylene	81	80		(50-131)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB ID: 9290-92326
MATRIX : SOLID

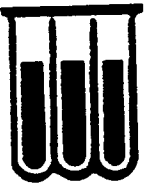
DATE RECEIVED: 3/26/90
DATE EXTRACTED: 3/26/90
DATE ANALYZED: 3/26/90

SAMPLE ID: INTRA-LAB BLANK , 3 /26/90

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS BLANK REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/kg	17

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc.
LABORATORY ID : 9090-90327
SAMPLE MATRIX : WATER

RECEIVING DATE : 3/27/90

SAMPLE ID : INTRA-LAB BLANK , 3 /27/90

**METALS ANALYTICAL BLANK REPORT
SELECTED LIST**

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	3/27- 3/28/90	ND	0.05 mg/l
Lead	3/27- 3/28/90	ND	0.1 mg/l



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc.
LABORATORY ID : 9290-92327
SAMPLE MATRIX : SOLID

RECEIVING DATE : 3/27/90

SAMPLE ID : INTRA-LAB BLANK , 3 /27/90

**METALS ANALYTICAL BLANK REPORT
SELECTED LIST**

Leachate testing in accordance with USEPA Manual SW846 Method 1310.

EP TOXICITY EXTRACTION DATE: 3/27/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	3/27- 3/28/90	ND	0.05 mg/l
Lead	3/27/90	ND	0.1 mg/l



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Wadsworth/Alert Laboratories
LAB #: 9290-92323
MATRIX: SOLID

DATE RECEIVED: 3/23/90
DATE EXTRACTED: 3/23/90
DATE ANALYZED: 3/23/90

SAMPLE ID: INTRA-LAB BLANK , 3 /23/90

SELECTED ORGANIC COMPOUNDS ANALYTICAL BLANK REPORT

PARAMETER	RESULT (ug/kg)	DETECTION LIMIT
Xylenes	ND	1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.
LAB #: 4413-54044
MATRIX: SOLID

DATE RECEIVED: 2/21/90
DATE EXTRACTED: 2/28/90
DATE ANALYZED: 2/28/90

SAMPLE ID: A1 5000 PRODUCT LINE

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Xylenes	ND	0.2
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)
J (Detected, but below quantitation limit; quantitation suspect)

SUBCONTRACT WEEKLY STATUS REPORT

WEEK ENDING

15 JUNE 90

P.O. NUMBER

19506

P.O. DESCRIPTION

12 UST REMOVAL
(CARDAMONE)

WEATHER CONDITIONS

PERSONNEL ON JOB

DAYS WORKED

WORK PERFORMED THIS WEEK

CARDAMONE IS STILL WORKING ON FINAL
CLOSURE REPORT

PERCENT COMPLETE

98%

REMARKS

SOME OF THE LANGUAGE IS UNACCEPTABLE & MIS-
LEADING. WE HAVE ASKED CARDAMONE TO CORRECT
THIS LANGUAGE TO ONLY REFLECT ACTUAL EVENTS. FOR SOME
REASON CARDAMONE IS CONTINUING TO WRITE IN THE MIS-
LEADING LANGUAGE. IT IS BECOMING A NUISANCE TO KEEP
ASKING FOR THE SAME CORRECTIONS

PROJECT ENGINEER

Wayne A. Cartier

18 JUNE 90

SUBCONTRACT WEEKLY STATUS REPORT

WEEK ENDING

25 May 90

P.O. NUMBER

19506

P.O. DESCRIPTION

121st Removal
(Carclamore)

WEATHER CONDITIONS

PERSONNEL ON JOB

DAYS WORKED

WORK PERFORMED THIS WEEK

Carclamore submitted a draft of the closure report for RAI review.

PERCENT COMPLETE

98%

REMARKS

PROJECT ENGINEER

Wayne A. Parkers 29 May 90

SUBCONTRACT WEEKLY STATUS REPORT

WEEK ENDING

18 May 90

P.O. NUMBER

1950

P.O. DESCRIPTION

12 I/S Removal
(Cardamone)

WEATHER CONDITIONS

Rainy 60°

PERSONNEL ON JOB

3

DAYS WORKED

15

WORK PERFORMED THIS WEEK

This week Cardamone needed all 12 I/S excavations. We still have a concern with settlement of the larger excavations. Cardamone still owes RAI the Closure

PERCENT COMPLETE

92%

REMARKS

reports & test results for lead & chrome.

PROJECT ENGINEER

William A. Carter

18 May 90

June 13, 1990

Ravenna Arsenal
8451 State Route 5
Ravenna, Ohio 44266

Attention: Mr. William Jenkins

Regarding: Ravenna Arsenal
UST Closures
Ravenna, Ohio

Gentleman:

As per your conversation of 6/5/90 with Karen Fortuna, the following are our interpretations of the revisions of the letters dated March 21, 1990 and April 12, 1990 to reflect the changes you requested. We will change all words in Appendix Q referred to as groundwater to run-off water. Also, the changes you requested in Section Q will appear in Appendix Q.

Sincerely,

John S. Cardamone,
President

cc: Mr. Wayne Carkido

SUBCONTRACT WEEKLY STATUS REPORT

WEEK ENDING

11 May 90

P.O. NUMBER

19506

P.O. DESCRIPTION

1st Removal (12 tanks)
Cardamone)

WEATHER CONDITIONS

PERSONNEL ON JOB

2-3

DAVE WORKED

1

WORK PERFORMED THIS WEEK

Cardamone came in & seeded & mulched
all excavations
We are still awaiting final sample data &
closure report

PERCENT COMPLETE

98%

REMARKS

PROJECT ENGINEER

Wayne A. Carls 11 May 90

SUBCONTRACT WEEKLY STATUS REPORT

WEEK ENDING

30 March 90

P.O. NUMBER

19506

P.O. DESCRIPTION

UST Removal

(Cardamone)

WEATHER CONDITIONS

fair

PERSONNEL ON JOB

108-10

DAYS WORKED

3 1/2

WORK PERFORMED THIS WEEK

Cardamone removed - no Sludge from the Site
They have also removed 1 cft of contaminated
soil by weeks end & only house
left.

PERCENT COMPLETE

8.5%

REMARKS

They still have to repair the sidewalk
@ freedom gate & seed & mulch all sites

PROJECT ENGINEER

W. James G. Carls

SUBCONTRACT WEEKLY STATUS REPORT

WEEK ENDING

73 March 90

P.O. NUMBER

19506

P.O. DESCRIPTION

WST Removal

(Cardamons)

WEATHER CONDITIONS

Fair

PERSONNEL ON JOB

5-8

DAYS WORKED

2

WORK PERFORMED THIS WEEK

Cardamons has started to backfill all open excavations (except Charleston gate see below) By Tuesday March 27 - Soil should be ready to remove ~~the~~ contaminated materials off site

PERCENT COMPLETE

75%

REMARKS

Charleston gate: After some further excavation of Charleston gate (due to bad sample results) to the 5x5 excavation size it was determined that ~~we~~ we would need further funding to remove all of the contaminated soil @ this time. To do so the building foundation will have to be removed to

PROJECT ENGINEER

Wayne A. Carlock

26 March 90

enable further excavation. We ~~are~~ are currently seeking additional funding. The contamination appears to have been cleaned up in the north end & now is only @ the south location. Cardamone took (2) more samples 1 north & 1 south which we should have results on by Tues. March 27.

SUBCONTRACT WEEKLY STATUS REPORT

WEEK ENDING 16 March 90

P.O. NUMBER 19506

P.O. DESCRIPTION

WST Removal
(Cardamone)

WEATHER CONDITIONS

Great (60-70)

PERSONNEL ON JOB

0

DAYS WORKED

0

WORK PERFORMED THIS WEEK

Cardamone is ~~still~~ continuing to forward sample
results. they only have some back ground
samples & Sludge samples to forward yet.

PERCENT COMPLETE

53%

REMARKS

Cardamone is suggest ~~to~~ get together
with myself and S. McCauslin and day now
to go over the excavated material piles to show
us how it was ~~separated~~ contaminated from non-
contaminated ~~to~~ so that we can determine which
material & how much material shall be remove

PROJECT ENGINEER

Wayne A. Pickett

19 March 90

off site. (material removal will be based on results of samples & proper separation of materials.)
No graph this week due to no change.

SUBCONTRACT WEEKLY STATUS REPORT

WEEK ENDING 9 March 90

P.O. NUMBER 19506

P.O. DESCRIPTION WST Removal

(Cardamone)

WEATHER CONDITIONS fair

PERSONNEL ON JOB -

DAYS WORKED -

WORK PERFORMED THIS WEEK

Cardamone sent thru more results for excavated material. We are currently review the results to see if any more are still required. They came back on fri morning (3/9) to recover the excavated fill piles

PERCENT COMPLETE 52%

REMARKS

PROJECT ENGINEER Wayne J. Carlock 12 March 90

8 MARCH 90

CARDAMONE

PROJ. COMPLETION

DATE 3/30/90

PERCENT COMPLETE 52%

PERCENT COMPLETE TASK

PHASE & JOB PERCENTAGE	0	25	50	75	100
PHASE ONE					
25%	EXCAVATION	INHIBITOR REMOVAL	REMOVE SLUDGE FROM TANKS	CLEAN AND RULL TANKS AND APPENDAGES	
50%	DISPOSE OF TANKS APPENDAGES AND OTHER FLUIDS	SAMPLES - SLUDGE & BACKGROUND	SLUDGE DISPOSAL		
75%	EXCAVATION SCREENING & SAMPLES	EXCAVATED SOIL DISPOSAL	BACKFILL	EXCAVATION	
100%	TOPSOIL, GRADE, SEED, FERTILIZER, APPLIC TANKS	RECLAIM	BOREHOLE AREA	JOB	CERTIFICATION

LAYAWAY/RELOCATION PROJECT STATUS REPORT
(AMCCOMR 235-5)

AS OF EOM

April 6, 1990

REQUIREMENTS CONTROL SYMBOL:

SMCPB-1005

TO: Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock Island, IL 61299-6000	FROM:	DATE: 4/6/90
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1. PROJECT TITLE FY89 Environmental Restoration Project Remove 12 USTs		
2. PROJECT NO 5892910-007	3. CONTRACT NO CLIN 46AD MOD88	4. PCT PHYSICALLY COMPLETE (Calculate using accepted earned value concept Block 4, Appendix, AMCCOMR 235-5)
5. PRON	6. PCT FINANCIALLY COMPLETE 95%	

MILESTONES a	INITIAL PLANNED DATE b	CURRENT PLANNED DATE c	ACTUAL DATE d
7. FUNDS AVAILABLE			
8. START WORK		1/8/90	1/11/90
9. 25 PCT PHYSICALLY COMPLETE		1/26/90	2/16/90
10. 50 PCT PHYSICALLY COMPLETE		2/23/90	3/9/90
11. 75 PCT PHYSICALLY COMPLETE		3/9/90	3/23/90
12. 90 PCT PHYSICALLY COMPLETE		3/23/90	3/30/90
13. 100 PCT PHYSICALLY COMPLETE		3/30/90	

FINANCIAL CATEGORIES e	ORIGINAL BUDGET f	AWARDED g	EXPENDED h	ESTIMATE AT COMPLETION i	VARIANCES j
14. IN-HOUSE LABOR					
15. MATERIAL					
16. SUBCONTRACT					
17. OTHER					
18. TOTAL					

19. REMARKS.

A. Tank #10 Charlestown Gate

- The building's foundation & slab have been removed
- Approx. 50 yds³ of non contaminated material has been stockpiled (based on PID screening)
- 58 yds³ of contaminated material has been removed (based on visual & PID screenings)
- 2 excavation and 1 stockpile sample have been taken
- Based on results due on Mon. 4/9/90, (a) stockpiled material will stay as fill or be removed. (b) excavation will be closed or require further excavation.

B. All sites require final grade and seeding (weather permitting)

If tests prove negative, completion will be 4/16/90

LAYAWAY/RELOCATION PROJECT STATUS REPORT
(AMCCOMR 235-5)

AS OF EOM
March 30, 1990

REQUIREMENTS CONTROL SYMBOL:
SMCPB-1005

TO: Commander
AMCCOM
ATTN: AMSMC-PBS-L (R)
Rock Island, IL 61299-6000

FROM:

DATE:
April 2, 1990

1. PROJECT TITLE
FY90 Environmental Restoration Project Remove 4 USTs

2. PROJECT NO
5902910-04

3. CONTRACT NO
CUN46AE MOD 92

4. PCT PHYSICALLY COMPLETE
(Calculate using accepted earned value concept
Block 4, Appendix, AMCCOMR 235-5)

5. PRON

6. PCT FINANCIALLY COMPLETE
100%

MILESTONES a	INITIAL PLANNED DATE b	CURRENT PLANNED DATE c	ACTUAL DATE d
7. FUNDS AVAILABLE ^e			
8. START WORK		January 10, 1990	January 11, 1990
9. 25 PCT PHYSICALLY COMPLETE		January 26, 1990	January 26, 1990
10. 50 PCT PHYSICALLY COMPLETE		February 9, 1990	February 1990
11. 75 PCT PHYSICALLY COMPLETE		February 23, 1990	March 9, 1990
12. 90 PCT PHYSICALLY COMPLETE		March 16, 1990	March 16, 1990
13. 100 PCT PHYSICALLY COMPLETE		March 30, 1990	March 30, 1990

FINANCIAL CATEGORIES e	ORIGINAL BUDGET f	AWARDED g	EXPENDED h	ESTIMATE AT COMPLETION i	VARIANCES j
14. IN-HOUSE LABOR					
15. MATERIAL					
16. SUBCONTRACT					
17. OTHER					
18. TOTAL					

19. REMARKS.
Excavations need only some seed and mulch.
Two steam posts need reset at that time.

LAYAWAY/RELOCATION PROJECT STATUS REPORT (AMCCOMR 235-5)	AS OF EOM March 30, 1990	REQUIREMENTS CONTROL SYMBOL: SMCPB-1005
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TO: Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock Island, IL 61299-6000	FROM:	DATE: April 2, 1990
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1. PROJECT TITLE Fy89 Environmental Restoration Project Remove 12 USTs		
2. PROJECT NO 5892910-007	3. CONTRACT NO CLIN 46AD MOD88	4. PCT PHYSICALLY COMPLETE (Calculate using accepted earned value concepts, Block 4, Appendix, AMCCOMR 235-5) 90%
5. PRON	6. PCT FINANCIALLY COMPLETE	

MILESTONES <small>a</small>	INITIAL PLANNED DATE <small>b</small>	CURRENT PLANNED DATE <small>c</small>	ACTUAL DATE <small>d</small>
7. FUNDS AVAILABLE ³			
8. START WORK		January 8, 1990	January 11, 1990
9. 25 PCT PHYSICALLY COMPLETE		January 26, 1990	February 16, 1990
10. 50 PCT PHYSICALLY COMPLETE		February 23, 1990	March 9, 1990
11. 75 PCT PHYSICALLY COMPLETE		March 9, 1990	March 23, 1990
12. 90 PCT PHYSICALLY COMPLETE		March 23, 1990	March 30, 1990
13. 100 PCT PHYSICALLY COMPLETE		March 30, 1990	

FINANCIAL CATEGORIES <small>e</small>	ORIGINAL BUDGET <small>f</small>	AWARDED <small>g</small>	EXPENDED <small>h</small>	ESTIMATE AT COMPLETION <small>i</small>	VARIANCES <small>j</small>
14. IN-HOUSE LABOR					
15. MATERIAL					
16. SUBCONTRACT					
17. OTHER					
18. TOTAL					

19. REMARKS:

Subcontractor is awaiting word from RAI about additional funding to proceed with Charlestown Gate. All excavations must be seeded and mulched.

LAYAWAY/RELOCATION PROJECT STATUS REPORT (AMCCOMR 235-5)		AS OF EOM	REQUIREMENTS CONTROL SYMBOL: SMCPB-1005		
TO: Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock Island, IL 61299-6000		FROM:		DATE: As of 3/20/90	
1. PROJECT TITLE UST Removal (Cardamone)					
2. PROJECT NO P.O. 19506		3. CONTRACT NO		4. PCT PHYSICALLY COMPLETE (Calculate using accepted earned value concepts, Block 4, Appendix, AMCCOMR 235-5)	
5. PRON		6. PCT FINANCIALLY COMPLETE		53%	
MILESTONES a	INITIAL PLANNED DATE b	CURRENT PLANNED DATE c	ACTUAL DATE d		
7. FUNDS AVAILABLE					
8. START WORK		Jan. 8, 1990	Jan. 11, 1990		
9. 25 PCT PHYSICALLY COMPLETE		Jan. 26, 1990	Feb. 16, 1990		
10. 50 PCT PHYSICALLY COMPLETE		Feb. 23, 1990	March 9, 1990		
11. 75 PCT PHYSICALLY COMPLETE		March 9, 1990			
12. 90 PCT PHYSICALLY COMPLETE		March 23, 1990			
13. 100 PCT PHYSICALLY COMPLETE		March 30, 1990			
FINANCIAL CATEGORIES e	ORIGINAL BUDGET f	AWARDED g	EXPENDED h	ESTIMATE AT COMPLETION i	VARIANCES j
14. IN-HOUSE LABOR					
15. MATERIAL					
16. SUBCONTRACT					
17. OTHER					
18. TOTAL					

19. REMARKS.

As of Tuesday, 20 March, 1990 all of the sample results were received. The tank at Charlestown will need some further excavation based on the sample results. The sub-contractor may at this time backfill the excavation and remove all materials from sight (with the exception of Charlestown Gate) He may also further excavate at Charlestown Gate and resample with a 1 day quick turn around for results. Grading and seeding are based on spring weather for growth. Subcontractor is expected to start removing materials and backfilling Thursday, 3/22/ or Friday 3/23.

TO: Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock Island, IL 61299-6000	FROM:	DATE: 4/16/90
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1. PROJECT TITLE FY89 Environmental Restoration Project, Remove 12 USTs		
2. PROJECT NO 5892910-007	3. CONTRACT NO CLIN 46AD MOD88	4. PCT PHYSICALLY COMPLETE (Calculate using accepted earned value concept Block 4, Appendix, AMCCOMR 235-5)
5. PRON	6. PCT FINANCIALLY COMPLETE	98%

MILESTONES <small>a</small>	INITIAL PLANNED DATE <small>b</small>	CURRENT PLANNED DATE <small>c</small>	ACTUAL DATE <small>d</small>
7. FUNDS AVAILABLE ⁷			
8. START WORK		1/8/90	1/11/90
9. 25 PCT PHYSICALLY COMPLETE		1/26/90	2/16/90
10. 50 PCT PHYSICALLY COMPLETE		2/23/90	3/9/90
11. 75 PCT PHYSICALLY COMPLETE		3/9/90	3/23/90
12. 90 PCT PHYSICALLY COMPLETE		3/23/90	3/30/90
13. 100 PCT PHYSICALLY COMPLETE		3/30/90	

FINANCIAL CATEGORIES <small>e</small>	ORIGINAL BUDGET <small>f</small>	AWARDED <small>g</small>	EXPENDED <small>h</small>	ESTIMATE AT COMPLETION <small>i</small>	VARIANCES <small>j</small>
14. IN-HOUSE LABOR					
15. MATERIAL					
16. SUBCONTRACT					
17. OTHER					
18. TOTAL					

19. REMARKS.

Subcontractor submitted all results to RAI on Wednesday 4/12/90. RAI, after review of sample results, instructed Cardamone to close the excavation. Only grading, seeding and the closure report remain.

Completion date will be ~~4/16/90~~
4/18/90

LAYAWAY/RELOCATION PROJECT STATUS REPORT (AMCCOMR 235-5)	AS OF EOM 20 April 90	REQUIREMENTS CONTROL SYMBOL: SMCPB-1005
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TO: Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock Island, IL 61299-6000	FROM:	DATE: 20 April 90
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1. PROJECT TITLE FY89 Environmental Restoration Project, Remove 12 USTs		
2. PROJECT NO 5892910-007	3. CONTRACT NO CLIN 46AD MOD88	4. PCT PHYSICALLY COMPLETE (Calculate using accepted earned value concepts Block 4, Appendix, AMCCOMR 235-5)
5. PRON	6. PCT FINANCIALLY COMPLETE	100%

MILESTONES a	INITIAL PLANNED DATE b	CURRENT PLANNED DATE c	ACTUAL DATE d
7. FUNDS AVAILABLE			
8. START WORK		1/8/90	1/11/90
9. 25 PCT PHYSICALLY COMPLETE		1/26/90	2/16/90
10. 50 PCT PHYSICALLY COMPLETE		2/23/90	3/9/90
11. 75 PCT PHYSICALLY COMPLETE		3/9/90	3/23/90
12. 90 PCT PHYSICALLY COMPLETE		3/23/90	3/30/90
13. 100 PCT PHYSICALLY COMPLETE		3/30/90	4/18/90

FINANCIAL CATEGORIES e	ORIGINAL BUDGET f	AWARDED g	EXPENDED h	ESTIMATE AT COMPLETION i	VARIANCES j
14. IN-HOUSE LABOR					
15. MATERIAL					
16. SUBCONTRACT					
17. OTHER					
18. TOTAL					

19. REMARKS.

Complete pending approval by the State Fire Marshal's office.

SUBCONTRACT WEEKLY STATUS REPORT

WEEK ENDING 2/16/90

P.O. NUMBER 19506

P.O. DESCRIPTION 11 STS REMOVAL
(CARDAMONE CONST)

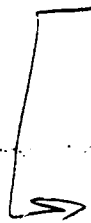
WEATHER CONDITIONS FAIR

PERSONNEL ON JOB 2-5

DATE WORKED 5

WORK PERFORMED THIS WEEK
CARDAMONE REMOVED ALL 12 USTS FROM THE GROUND AND CLEANED
ALL HOLE TO ACCESS TABLE (VIA PID SCREENING) ALL 12 USTS
WERE CLEANED OF SLUDGE & STEAMER CLEANED. ALL SOIL
SAMPLES WERE TAKEN - AWAITING RESULTS. THE 3-3900 TANK
THAT WAS A POTENTIAL PROBLEM LAST WK WAS APPARENTLY

PERCENT COMPLETE ~~100%~~ 35%



REMARKS CLEAN (PID) BUT ONLY ACTUAL SOIL SAMPLE RESULTS
WILL TELL. RAI IS ALLOWING THEM TO LEAVE THE CONCRETE PADS IN
THE HOLE PROVIDED ALL RESULTS COME BACK CLEAN. RAI APPROX
LAKE CO. LANDFILL & IS CURRENTLY INVESTIGATING ERIEWAY SLUDGE
TREATMENT FACILITY.

PROJECT ENGINEER William A. Parkland 19 FEB 90