



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 form 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.

HA. Cooper H.R. Cooper

Plant Engineer

HRC/SM/ade/90016

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

RA-206, rev 4/79		621-2407	1. \[b	HAVENS AND EMI 700 BOND COUR	r BLDG.
BJJ-776	Date	August 24,	1989	CLEVELAND, OH ATTN: D.SHAPE	
		-891-0220 🏴	2.	6801 ENGLE RD.	., SUITE N
<u>RAVENNA ARS</u> Contract No. DAAA	A09-88-Z-0001	<u>.</u> 459-2050	3.	MIDDLEBURG, OH ATTN: BOLLAGIA BURGESS NIPPLE 5085 REED RD. COLUMBUS, OHIC ATTN: SCOTT DA	E LTD. D 43220
Requisition No. Quotation Requested Not Later Than 9/13/89	Lowest Pr G.S.A	Requ 566-2200	E 4. Quality nired Design Only Source 5. n Fully 9/10	6161 BUSCH BLV COLUMBUS, OHIC ATTN: HARRY BI R & R INTERNAT 1234 S. CLEVED	VD. 0 43229 HATT TIONAL, INC. LAND-MASSILLOM 44321 RI
item No.	i n	2	3	4	RAR 5
SUBCONTRACT ALL LABOR, MATE- RIALS AND EQUIPMENT REQUIRED TO REMOVE 12 UNDERGROUND STOR AGE 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.	NB	NB			133 495 Marine 12 94.

RA-206, rev 4/79		686-1898	9	2	ENVIRONMENTAL 1533 COMMERCE STOW, OHIO 44	DR.
BJJ-776		August 24,	1989	,	ATTN: LYN · RYCHI	LIK
QUOTATION RECAR	Date_	283-1100		7.	URS CONSULTAN	ſS
RAVENNA ARS	ENAL, IN			_	3605 WARRENSV CLEVELAND, OH ATTN: GARY HR	
Contract No. DAAA	09-88-2-0001 614	-761-2006		8.	ENGINEERING & 255 BRADENTON DUBLIN, OHIO ATTN: STEPHAN	ENVIRONMENT AVE.SUITE 1 43017
Requisition No.	PURCHASE AP	489-1120	SE	9.	JOHN C. BOSLE	Y ÇONSTRUCTI
Quotation Requested Not Later Than	G.S.A G.S. Cont	ract	Qualit quired Design Only Source	e 0/3	P.O. BOX 67 MINERAL WELLS ATTN: THOMAS CADDUM, INC.	, WV 20150
9/13/89	Proprietar 615-		ain Fully	-10.	475 METROPLEX NASHVILLE, TN ATTN: JAMES R	37211
item No.	6	7	8		BOUEY	10
SUBCONTRACT ALL LABOR, MATE- RIALS AND EQUIPMENT REQUIRED TO REMOVE 12 UNDERGROUND STOR AGE 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				2/4,043	

RA-206, rev 4/79 BJJ-776	:	-343-0000	1080		APEC LTD 415 W. MAPLE KALAMAZOO, M	
QUOTATION RECA		-625-8700	1909		CLAWSON TANK 4701 WHITE L CLARKSTON, M	AKE RD.
Contract No. DAA	A09-88-2-0001 606	-259-3779		_	CLYCAN ALPHA P.O. BOX 2230 LEXINGTON, KY	06
Requisition No. Quotation Requested Not Later Than	Lowest Pi G.S.A.	PBOVED BECAUS -545-3115 riceReq tract	Qua uired Desig	zn	WAGNER ENTE 950 E. NINE HAZEL PARK, N	
9/13/89		y 686–2476	in Fully	15. 8 3	CARDAMONE CO 4865 CHAINCE CLEVELAND, O	RAFT RD. 🖌
item No.	11	12	1	3	14	15
SUBCONTRACT ALL LABOR, MATE- RIALS AND EQUIPMENT REQUIRED TO REMOVE 12 UNDERGROUND STOR AGE 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.	•					291659 ⁶³

•

• •

RA-130, Rev. 4 D.O. N D.M.S. Reg. N TO:	C-3 RAVENNA, OHIO 44266-9297 CONTRACTS NO. DAAA09-88-Z-0001 Date: August 24, 1989 REQUEST FOR QUOTATION REQUEST FOR QUOTATION Please quote price - f.o.b. shipping point and f.o.b. destination, del- ivery, and cash terms. Your quota- tion should also show shipping
L	Priče each item separately. Quo- tations must be submitted in dup- licate. Our inquiry number must appear on your quotation. We re- serve the right to reject all or any part of your quotation.
QUANTITY	DESCRIPTION
1	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. 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. 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. BIDS ARE TO BE SUBMITTED BY SEPTEMBER 13, 1989. 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. ANY QUESTIONS OR NEED FOR ADDITIONAL INFORMATION SHOULD BE DIRECTED TO MY ATTENTION AT (216)297-3107.
All corresp	CONTINUED Your Quotation Must Be in Our Hands By: <u>September 13, 1989</u> ondence related to the above inquiry should be addressed to the attention of: B.J. JENKINS, ADMINISTRATOR CONTRACTS/PROCUREMENT & PURCAHSING Procurement & Materials Control Division

•

RA-130, Rev. 4 D.O. N D.M.S. Reg. N TO:	C3 8451 STATE ROUTE 5 Inquiry No. BJJ-776 RAVENNA, OHIO 44266-9297 1000
QUANTITY	DESCRIPTION
	 YOUR BID MUST MEET THE FOLLOWING REQUIREMENTS: 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. <u>PLEASE PAY PARTICULAR ATTENTION TO CLAUSES 11 AND 16; ALSO 18</u> <u>THROUGH 25 WHICH ARE APPLICABLE TO THE DAVIS-BACON ACT</u>. 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.
All corresp	7. YOUR QUOTATION MUST SHOW THAT PRICES ARE FIRM FOR THE DURATION Your Quotation Must Be in Our Hands By: <u>SEE PAGE ONE</u> ondence related to the above inquiry should be addressed to the attention of: B. J. JENKINS, ADMINISTRATOR CONTRACT/PROCUREMENT & PURCHASING

٦

÷

......

RA-130,		4/79 No			TE ROUTE 5	5	C. Inqu	Iry NoBJ	J-776
D.M.S.	Reg.	No1		RAVENNA, OH			Date	August 24	, 1989
		•	REQUI	EST FO	R QUOI	TATI	0 N -		•
		•					THIS IS	NOT AN ORDE	R
то:						Ple pol	ase quote pr nt and f.o.b ry, and cash	ice - f.o.b . destinati	. shipping on, del- ur quota-
	•					tic	should als ght and poin ce each item	o show ship t of shipme	ping nt.
	ł	-				1 +=+	ions must be ate. Our in bear on your	submitted	
	Ļ					apr ser	ve the right part of you	duotation. to reject r nuotation	all or
QUAN	TITY	1		DESCRIP	PTION				
			OF THE SCHEDU	LE AS OFFER	RED, AND TH	IAT ANY	CONTRACT OR	PURCHASE OR	DER
		1	RESULTING THE CONDITIONS.	REOF WILL B	BE IN CONFO	ORMITY W	ITH THE SPEC	IAL TERMS A	ND
		A	THE SUCCESSFU AND PAYMENT B COST OF WHICH	OND PRIOR T	COMMENCE	ING ANY	WORK ON THE	CONTRACT.	BOND THE
4 1 2 2			IN ADDITION T PRICES ARE IN					L THAT THE	
			ALL SUBCONTRA IDENTIFIED BY THE INQUIRY,	THE NAME A	ND ADDRESS	S OF THE	OS IN SEALED E BIDDER, THE	ENVELOPES NUMBER OF	
		IF THI MUST I	ERE IS NO INT BE RETURNED A	ENTION TO P S AN ATTACH	PROVIDE A (MENT TO Y(QUOTATIC OUR LETT	ON, THE COMPL TERHEAD.	ETE BID PAC	KAGE .
e.									
		l							
		Your	Quotation H	ust Be in O	lur Hands I	By:	EE PAGE ONE	, 	
All	corre	spondence r	elated to the	e above Inq	uiry shou	ld be ac B. Q.S	dressed to t	he attentic	n of:
							NKINS, ADMIN I/PROCUREMENT		NG

۹.

.

.....

- --

÷

Est. Start comp & %'s Fore Marshall Inspector Carl Dick - Estimator (not in Attendance) John Cardemone -State Certified they 87 took test 1990 Start up - Jan 22, 1990 Based on Inspector appear Completion - (60 days) March 30 1990 - People 46 Come Back for Seeding. ORGINAL - 1 ft around in land lake County -1.5 yd3/lon 1000 1.5ton/1/13 10000 1500. Ton Net 30 (15\$30 mogress pmt.) Net de transportation & Diopopal Sites

emply tanks Prior to Excavations + Spill allert forms + Sand Blast GRIT will be drummed & shipped out as non haz. solid Waste EPtorie on Sandwastererd. Clean-up (he will Submit)

- Assoc. FIBING REMOVAL + ALSO + - UP TO BLDGS & SLABS & BLDGS IF READY ACCESSABLE -A.O. 19 5% BACK FOR SERDING (9259,00)

4 APR 1990 AMSMC-ISE SUBJECT: Verification of Underground Storage Tanks (USTS) Summary Matrix Compiled by Corps of Engineers (COE), Huntsville Division DISTRIBUTION: CC. Commander Pine Bluff Arsenal, ATTN: SMCPB- EM _ Pine Bluff, AR 71602-9500 Rock Island Arsenal, ATTN: SMCRI-SEMTEC 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 Argenal. NJ 07806-5000 U.S. Army Chemical Research, Development and Engineering Center, ATTN: SWCG-EM(A) APG, MD 21010-5423 MCAlester AAP, ATTN: SMCMC-ISF-C, McAlester, OK 74501-5000 ~<u>0.008</u> 0 KC. AL. TOYLTIC Hawthorne AAP, ATTN: SMCHW-OR , Hawthorne, NV 89415-5000 1:23 CB-COR Holston AAP, ATTM: SMCHO- EN , Kingsport, TN 37660-9982 19 CONT ADM Indiana AAP, ATTN: SMCIN- EN , Charlestown, IN 47111-9667 SATSO , Middletown, IA 52538-5000 Iowa AAP, ATTN: SMCIO-EN PROP ADM Kansas AAP, ATTN: SMCXA- OR , Parsons, XS 67357-9107 PSCA OASAS ÷ Lake City AAP, ATTN: SMCLC- EN-E, Independence, MO 64051-0330 SECURITY 1 SAF Lone Star AAP, ATTN: SMCLS- EN , Texarkana, TX 75505-9101 ILI AAI 0711 Longhorn AAP, ATTN: SMCLO-EN Longhorn AAP, ATTN: SMCLO-EN , Marshall, TX 75671-1059 Louisiana AAP, ATTN: SMCLA- SF , P.O. Box 30058, Shreveport, LA 71130-5058 A RETURN FOR FILE Milan AAP, ATTN: SMCMI-EN , Milan, TN 38388-5000 Mississippi AAP, ATTN: SMCMS-EN , Stennis Space Center, MS 39529-7000 General Manager Newport AAP, ATTN: SMCNE- EN , Newport, IN 47966-0121 Revenna Arsenal, Inc. Badford AAP, ATTN: SMCRA- EN , Caller Service 2, Radford, VA 24141-0298 , Riverbank, CA 95357-0673 Riverbank AAP, ATTN: SMCRE-ER FWD FOR Dinformation , 156 Cedar Avenue, Scranton, PA 18505-1138 Scranton AAP, ATTN: SMCSC- EN Compliance as Sunflower AAP, ATTN: SMCEU- EV , P.O. Box \$40, DeSoto, KS 66018-0640 ^{applicable} DReply NLT Commander's Representative Alabama AAP, ATTN: SMCAL, 110 Highway No. 135, Childersburg, AL 35044-1021 Badger AAP, ATTN: SMCBA- CR , Baraboo, WI 53913-5000 Cornhusker AAP, ATTN: SMCCO, P.O. Box 2041, Grand Island, NE 68802-2041 Hays AAP, ATTN: SMCHA, Pittsburgh, PA 15207-1969 Joliet AAP, ATTN: SMCJO- EN . Joliet, IL 60436-5000 Bavenne AAP, ATTM: SMCRV, 3451 State Route 5, Ravenna, OH 44266-9297 Twin Cities AAP, ATTN: SMCTC-EN , New Brighton, MN 55112-5000 Volunteen AAP, ATTN: SWCVO- CR P.O. Box 20007, Chattanooga, TN 37422-2607 Ethan Allen Firing Range, General Electric Firing Range, General Electric Co., DEN SERAR SE SKANA STATES TATES TATES TATES TO A STATES A SERVICE A STATES A SERVICE A STATES DA PEO/PM OFFICES-AMCCOM MATRIX SUPPORTED PEO Armament, ATTN: AMCPEO-AR, Picatinny Arsenal, NJ 07806-5000 Product Mgr, Howrmer Improvement Program (HIP), ATTN: AMCPM-HIP, Picatenny Arsenal, NJ 07806-5000 Project Mgr, Autonomous 2 recision Guided Munitions (APGM) ATTN: AMERA-APGM, Picatinny Arsenal, NJ 07806-50 Project Mgr., Tank Main Armanic System (TMAS), ATTN: AMCPM-TWA, Picatinny Arsenal, NJ 07806-5000 Product Mgr., 9MM, ATTN: AMCPM-SMI Bock Island, IL 61200 7150 Project Mgr, Sense & Destroy Armor (SASAEM), ATTN: MCPM-SD, Picatinny Argenal, NJ 07806-5000 CF: Other Commander U.S. Army Armament Research, Depropment and Engineering Conter, ATTN: SMCAR-DC, Picatinny Arsenal, NJ 07806-5000 U.S. Army Armament Besearch, Development and Engineering Center, ATTA SMCAR-CC, Picatinny Arsenal, NJ 07806-5000 U.S. Army Areament Research, Development and Engineering Center, ATTN: SMCAR-FS, 21catinny Arsenal, ŊJ 01-006-5000 Army Chemical Research, Development and Engineering Center, ATTN: SMCCR-DC, APG, MD 1010-5423

(AMSMC FL 1)

1

2



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



REPLY TO ATTENTION OF

S: 1 May 1990

AMSMC-ISE (200-1a)

4 AFR 1990

MEMORANDUM FOR SEE DISTRIBUTION

SUEJECT: 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 1969 and verified by AMCCOM installations.

 Heaiguarters. AMSMO-ISE assumes that the COE figures might be accurate because they conducted the USE 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 NLT 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 Onewokae, AMSMC-ISE-E, DSN 793-1350.

FOR THE COMMANDER:

RONALD T. SHINBORI Chief, Environmental Quality Div

Encl

MATRIX
SUMMARY MATRID
TANKS
STORAGE
INI ERCROTRID
ANCOON

• •

•

	NUM 3 1 -	NUM Num <th>NUM NOT NOT NUMM NU</th> <th></th> <th></th> <th></th> <th>RDC</th> <th>RDJJI ATTA TANKS</th> <th></th> <th></th> <th></th> <th>ADDATOR 1</th> <th>ND OF</th> <th>I DUACTIVE</th> <th></th> <th><u>م</u>.ج</th>	NUM NOT NOT NUMM NU				RDC	RDJJI ATTA TANKS				ADDATOR 1	ND OF	I DUACTIVE		<u>م</u> .ج
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <th>A.W. A.W. A.W.</th> <th>A.W. 3 1 - - 1 1 - - 1 SSEX NV 3 1 - - - 1 - - 1 SSEX NV 3 1 - - - 1 - - 1 SSEX NV 3 1 - - - 1 - - 1 SSEX NV 3 1 - - - 1 - - 1 - MARP 3 1 - - - 1 - - 1 - MARP 3 1 - - - 1 - - 1 - MARP 3 - - - - 1 - - - - - MARP 3 - - - - 1 -</th> <th></th> <th>NO OF</th> <th> UNICOUN OR BY 1965 </th> <th></th> <th>JO-74 </th> <th>6L-SL</th> <th> AFTER 1980</th> <th>ADTA REGA</th> <th></th> <th>TANKS</th> <th></th> <th></th> <th>11.80</th>	A.W.	A.W. 3 1 - - 1 1 - - 1 SSEX NV 3 1 - - - 1 - - 1 SSEX NV 3 1 - - - 1 - - 1 SSEX NV 3 1 - - - 1 - - 1 SSEX NV 3 1 - - - 1 - - 1 - MARP 3 1 - - - 1 - - 1 - MARP 3 1 - - - 1 - - 1 - MARP 3 - - - - 1 - - - - - MARP 3 - - - - 1 -		NO OF	UNICOUN OR BY 1965		JO-74	6L-SL	 AFTER 1980	ADTA REGA		TANKS			11.80
		A.W. 1	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	-							tai arama					
M.W. 3 1 - - 1 1 - 1 - 1 - 1 - 1 - 1 - 1	M.M. 3 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 1 - 1 1 - 1 1 - 1 1 1 - 1 1 1 - 1 1 1 - 1	M.M. 1	M.M. 3 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 1 - 1 1 - 1 1 - 1 1 - 1 1 - 1 1 - 1 1 - 1 1 - 1 1 1 - 1 1 1 - 1		-	-	•••	1	ı		INTSCOREIN	0	0		986	159,500
MULTIN 2 9 1 9 1 9 1 9 1 MULTIN 2 9 1 - 1 1 - 1 1 1 1 MULTIN 3 1 - 1 <td>SSS MU 2 9 1 6 7 10000000 12 19 26 MUZE R 23 1 - 1 1 - 1 1 25 10 12 14 14 Res NU 25 1 1 - 1 1 10 12 10 12 10 12 10 12 10 12 10 10 12 10 10 12 10 10 12 10 10 12 10 10 12 10 10 12 10 10 12 10 <t< td=""><td></td><td>Stature 21 9 1 <</td><td></td><td></td><td>-</td><td>•</td><td></td><td>5 4</td><td>• •</td><td>INFBRASKA</td><td>1</td><td>3</td><td></td><td>=</td><td>63,800</td></t<></td>	SSS MU 2 9 1 6 7 10000000 12 19 26 MUZE R 23 1 - 1 1 - 1 1 25 10 12 14 14 Res NU 25 1 1 - 1 1 10 12 10 12 10 12 10 12 10 12 10 10 12 10 10 12 10 10 12 10 10 12 10 10 12 10 10 12 10 10 12 10 <t< td=""><td></td><td>Stature 21 9 1 <</td><td></td><td></td><td>-</td><td>•</td><td></td><td>5 4</td><td>• •</td><td>INFBRASKA</td><td>1</td><td>3</td><td></td><td>=</td><td>63,800</td></t<>		Stature 21 9 1 <			-	•		5 4	• •	INFBRASKA	1	3		=	63,800
MULENT 33 11 5 1 10 12 1000000000000000000000000000000000000	MULENT 23 11 5 6 12 1000000000000000000000000000000000000	MULTUR 33 11 5 1 10 12 1000000000000000000000000000000000000	MULENT 23 11 5 6 12 1000000000000000000000000000000000000		21		-	م	n •		tMARYI ALD)	61 1	9	1		1
MULER 22 1 - 1 <td>MLEFIR 23 1 - 1 0 12 14 0 12 14 1</td> <td>MULET 23 1 - 1 1 1 1 MULET 35 1 - - 1 1 1 1 MULET 5 1 1 - - 1 1 1 1 MULET 5 1 1 - - 1 1 1 1 MULET 5 1 1 1 - - 1 1 1 MULET 5 1 1 1 1 1 1 1 1 MULET 5 1 1 1 1 1 1 1 1 MULET 1 1 1 1 1 1 1 1 1 MULET 1 1 1 1 1 1 1 1 1 MULET 1 1 1 1 1 1 1 1 1 MULET 1 1 1 1 1 1 1 1 1 MULET 1 1 1 1 1 1 1 1 1 MULET 1 1</td> <td>MLBFIR 23 1 - 1<!--</td--><td>USKEX ANT</td><td>12</td><td></td><td>- 2</td><td> 9</td><td>4</td><td></td><td></td><td>•</td><td>26</td><td></td><td></td><td>1 101</td></td>	MLEFIR 23 1 - 1 0 12 14 0 12 14 1	MULET 23 1 - 1 1 1 1 MULET 35 1 - - 1 1 1 1 MULET 5 1 1 - - 1 1 1 1 MULET 5 1 1 - - 1 1 1 1 MULET 5 1 1 1 - - 1 1 1 MULET 5 1 1 1 1 1 1 1 1 MULET 5 1 1 1 1 1 1 1 1 MULET 1 1 1 1 1 1 1 1 1 MULET 1 1 1 1 1 1 1 1 1 MULET 1 1 1 1 1 1 1 1 1 MULET 1 1 1 1 1 1 1 1 1 MULET 1 1 1 1 1 1 1 1 1 MULET 1 1	MLBFIR 23 1 - 1 </td <td>USKEX ANT</td> <td>12</td> <td></td> <td>- 2</td> <td> 9</td> <td>4</td> <td></td> <td></td> <td>•</td> <td>26</td> <td></td> <td></td> <td>1 101</td>	USKEX ANT	12		- 2	 9	4			•	26			1 101
32 3 110 33 3 3 11 34 3 3 11 35 3 11 3 35 3 11 3 36 3 11 3 37 3 3 3 38 3 3 11 39 3 3 11 30 3 3 11 31 3 3 11 39 3 3 11 30 3 3 11 31 3 3 11 32 11 3 3 33 3 11 3 34 3 3 11 35 3 11 3 35 3 11 3 36 3 11 3 37 3 11 38 3 11 39 11 11 31 11 11 36 11 11 37 11 11 38 11 11 39 11 30 11	5 5 6 1 1 1 1 1 5 7 1 1 1 1 1 1 1 5 7 1 1 1 1 1 1 1 7 1 1 1 1 1 1 1 1 7 1 1 1 1 1 1 1 7 1 1 1 1 1 1 1 7 1 1 1 1 1 1 1 8 1 1 1 1 1 1 1 9 1 1 1 1 1 1 1 9 1 1 1 1 1 1 1 9 1 1 1 1 1 1 1 9 1 1 1 1 1 1 1 10 1 1 1 1 1 1 1 11 1 1 1 1 1 1 1 12 1 1 1 1 1 1	32 3 3 4 4 33 4 4 4 4 4 33 5 5 5 5 5 33 5 5 5 5 5 11 1 5 5 5 5 11 1 5 5 5 5 11 1 5 5 5 5 11 1 5 5 5 5 11 5 5 5 5 5 11 5 5 5 5 5 11 5 5 5 5 5 11 5 5 5 5 5 11 5 5 5 5 5 11 5 5 5 5 5 11 5 5 5 5 5 11 5 5 15 16 5 11 5 5 5 5 5 11 5 5 5 5 5 11 5 5 5 5 5 11 5 <	32 33 34 4 33 1 1 1 1 34 1 1 1 1 35 1 1 1 1 35 1 1 1 1 35 1 1 1 1 36 1 1 1 1 37 1 1 1 1 36 1 1 1 1 37 1 1 1 1 36 1 1 1 1 37 1 1 1 38 1 1 1 39 1 1 1 39 1 1 1 30 1 1 1 31 1 1 1 31 1 1 1 31 1 1 1 32 1 1 1 33 1 1 1 34 1 1 1 35 1 1 1 36 1 1 1 37 1 1 1		23			-	0	12		15	86	1 51	40	
	95 96 97 10 10 10 20 11 2 2 11 2 2 10 20 11 2 2 11 2 2 10 20 11 2 2 11 2 2 10 20 11 2 2 11 2 2 10 31 1 2 2 11 2 2 2 10 31 1 2 2 11 2 2 11 2 2 31 1 2 2 11 2 2 11 2 2 31 1 2 2 11 2 2 2 2 32 11 1 2 2 11 2 2 33 11 1 2 2 12 2 2 33 11 1 2 2 12 2 2 34 1 1 1 1 1 12 2 2 35 1 1 1 1 1 1 2 2 35 </td <td></td> <td>5 5 5 5 5 5 5 5 23 1 1 2 5 1 1 1 35 1 1 1 2 5 1 1 36 1 1 1 2 1 1 1 37 1 1 1 2 2 1 1 36 1 1 1 1 1 1 1 37 1 1 1 1 1 1 1 38 1 1 1 1 1 1 1 39 1 1 1 1 1 1 1 39 1 1 1 1 1 1 1 30 1 1 1 1 1 1 1 31 1 1 1 1 1 1 1 32 1 1 1 1 1 1 1 31 1 1 1 1 1 1 1 32 1 1 1 1 1 1 1 <tr< td=""><td></td><td>24</td><td>-</td><td></td><td>•</td><td>-</td><td>6</td><td> E7A</td><td>-</td><td></td><td>8</td><td>8</td><td>1 261,</td></tr<></td>		5 5 5 5 5 5 5 5 23 1 1 2 5 1 1 1 35 1 1 1 2 5 1 1 36 1 1 1 2 1 1 1 37 1 1 1 2 2 1 1 36 1 1 1 1 1 1 1 37 1 1 1 1 1 1 1 38 1 1 1 1 1 1 1 39 1 1 1 1 1 1 1 39 1 1 1 1 1 1 1 30 1 1 1 1 1 1 1 31 1 1 1 1 1 1 1 32 1 1 1 1 1 1 1 31 1 1 1 1 1 1 1 32 1 1 1 1 1 1 1 <tr< td=""><td></td><td>24</td><td>-</td><td></td><td>•</td><td>-</td><td>6</td><td> E7A</td><td>-</td><td></td><td>8</td><td>8</td><td>1 261,</td></tr<>		24	-		•	-	6	E7A	-		8	8	1 261,
	8 8 1 1 1 1 1 1 8 1 1 2 1 1 2 1 8 1 1 2 1 1 2 1 8 1 1 2 1 1 2 1 11 2 1 1 2 1 2 1 11 2 1 2 1 2 1 2 11 2 1 2 1 2 1 2 11 2 1 2 1 2 1 2 11 2 1 2 1 2 1 2 11 2 1 2 1 2 1 2 11 1 2 1 2 1 2 1 12 1 1 1 2 1 2 1 13 1 1 1 2 1 2 2 14 1 1 1 1 1 1 2 2 15 1 1 1 1 1 1 2	2 111045512 3 1	2 2 11 2 2 111 1 3 1 1 2 2 111 1 3 1 1 2 2 111 1 3 1 1 1 2 2 111 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 1 1 1 1 1 <	TONE AND	<u>3</u> 5	- 88			• •	۱ • –	I PERUSYLVARIA	1 0 (2	1 2.0
10 <	III Zi Zi <thzi< th=""> Zi <thzi< th=""> Zi <thzi< th=""> Z</thzi<></thzi<></thzi<>	10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10	RF 23 12 4 5 20 1101140 5 20 1101140 RF 35 1 1 2 2 11000 5 20 1101140 RF 35 1 1 2 2 11000 5 20 110100 RF 35 1 1 2 2 11000 5 20 11000 5 20 11000 5 20 11000 5 20 11000 5 20 11000 5 20 11000 5 20 11000 5 20 11000 5 20 11000 5 20 11000 5 20 11000 5 20 11000 5 20 12000 5 20 12000 20			- 8	•		•	~	TASSAMULL	- 2	2	• •		•
	35 1 1 1 1 2 36 1 1 1 1 1 2 37 1 1 1 1 1 1 38 5 1 1 1 1 2 39 1 1 1 1 1 1 30 1 1 1 1 1 1 31 1 1 1 1 1 1 35 1 1 1 1 1 1 36 1 1 1 1 1 1 36 1 1 1 1 1 1 36 1 1 1 1 1 1 36 1 1 1 1 1 1 36 1 1 1 1 1 1 37 1 1 1 1 1 1 38 1 1 1 1 1 1 39 1 1 1 1 1 1 39 1 1 1 1 1 30	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <td>35 37 37 37 37 37 36 31 35 37 37 37 37 36 31 35 37 37 37 37 36 37 37 37 37 37 37 37 36 37 37 37 37 37 36 37 37 37 37 37 37 37 36 37 37 37 37 37 38 35 31 37 37 37 37 38 35 37 37 37 37 37 38 35 37 37 37 37 37 38 37 37 37 37 37 37 38 37 37 37 37 37 37 39 37 37 37 37 37 37 39 37 37 37 37 37 37 39 37 37 37 37 37 37 39 37 37 37 37 37 37 30 <</td> <td></td> <td></td> <td>1 12 1</td> <td>4</td> <td>4</td> <td></td> <td></td> <td></td> <td>- -</td> <td>5</td> <td></td> <td></td> <td>10.0</td>	35 37 37 37 37 37 36 31 35 37 37 37 37 36 31 35 37 37 37 37 36 37 37 37 37 37 37 37 36 37 37 37 37 37 36 37 37 37 37 37 37 37 36 37 37 37 37 37 38 35 31 37 37 37 37 38 35 37 37 37 37 37 38 35 37 37 37 37 37 38 37 37 37 37 37 37 38 37 37 37 37 37 37 39 37 37 37 37 37 37 39 37 37 37 37 37 37 39 37 37 37 37 37 37 39 37 37 37 37 37 37 30 <			1 12 1	4	4				- -	5			10.0
WW 23 11 2 11,1001 16 70 WW 3 1 2 11,1001 16 70 16 70 16 70 16 70 16 70 16 70 16 70 16 70 16 70 16 70 16 70 17 16 70 17	UP 23 1 2 1 2 11,005 10 20 CMU 5 1 2 1 2 1 2 11,005 10 20 CMU 5 1 2 2 2 1 2 1 2 1 CMU 5 1 2 2 1 2 2 1 20 1 CMU 5 1 2 2 1 2 2 1 20 1 CMU 5 1 2 1 2 1 2 1 2 CMU 5 1 2 1 2 2 1 2 2 1 CMU 5 1 1 1 2 2 1 2 1 1 CMU 5 1 1 1 1 1 1 1 1 1 1 CMU 5 1 1 1 1 1 1 1 1 1 1 1 CMU 5 1 1 1 1 1 1 1 1 1 1 1 </td <td>W 23 1 1 2 1 1 2 1 1 (W 5 1 1 2 1 1 2 1 (W 5 1 1 2 1 1 2 1 (W 5 1 1 2 1 1 2 1 (W 5 1 1 2 1 2 1 (W 5 1 1 1 2 1 2 (W 5 1 1 1 1 1 2 1 (W 5 1 1 1 1 1 1 1 (W 5 1 1 1 1 1 1 (W 1 1 1 1 1 1 (W 1 1<td>W W<td></td><td>5 7</td><td></td><td>•</td><td>10</td><td>s</td><td></td><td></td><td>-</td><td>1 24</td><td></td><td>• •</td><td></td></td></td>	W 23 1 1 2 1 1 2 1 1 (W 5 1 1 2 1 1 2 1 (W 5 1 1 2 1 1 2 1 (W 5 1 1 2 1 1 2 1 (W 5 1 1 2 1 2 1 (W 5 1 1 1 2 1 2 (W 5 1 1 1 1 1 2 1 (W 5 1 1 1 1 1 1 1 (W 5 1 1 1 1 1 1 (W 1 1 1 1 1 1 (W 1 1 <td>W W<td></td><td>5 7</td><td></td><td>•</td><td>10</td><td>s</td><td></td><td></td><td>-</td><td>1 24</td><td></td><td>• •</td><td></td></td>	W W <td></td> <td>5 7</td> <td></td> <td>•</td> <td>10</td> <td>s</td> <td></td> <td></td> <td>-</td> <td>1 24</td> <td></td> <td>• •</td> <td></td>		5 7		•	10	s			-	1 24		• •	
0 11 1 2 2 11 2 2 1 1 1 1 1 1 2 1 2 1 2 2 1 1 2 2 1 1 2 1 <td>W 23 11 2 2 11.11003 W 5 1 4 - 2 12.11003 NW 5 1 - 2 12.11003 NW 5 1 - 2 12.11003 NW 5 1 1 - 1 2 2 NW 5 1 1 - - 1 1 2 1 2 1 2 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 2 1 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 1 1 1 2 1 2 1 2 1 1 1 1 1 1 1 <td< td=""><td>7 7</td><td>W 23 11 2 2 11 2 W 5 11 4 - 2 2 11 2 W 5 11 4 - 1 2 1 2 MW 5 11 4 - 1 2 1 2 MW 5 13 1</td><td>NA ANP</td><td>۲ ،</td><td></td><td>-</td><td></td><td>1</td><td>۱ · </td><td></td><td>1</td><td>۰ 20</td><td>1 26</td><td>R -</td><td></td></td<></td>	W 23 11 2 2 11.11003 W 5 1 4 - 2 12.11003 NW 5 1 - 2 12.11003 NW 5 1 - 2 12.11003 NW 5 1 1 - 1 2 2 NW 5 1 1 - - 1 1 2 1 2 1 2 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 2 1 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 1 1 1 2 1 2 1 2 1 1 1 1 1 1 1 <td< td=""><td>7 7</td><td>W 23 11 2 2 11 2 W 5 11 4 - 2 2 11 2 W 5 11 4 - 1 2 1 2 MW 5 11 4 - 1 2 1 2 MW 5 13 1</td><td>NA ANP</td><td>۲ ،</td><td></td><td>-</td><td></td><td>1</td><td>۱ · </td><td></td><td>1</td><td>۰ 20</td><td>1 26</td><td>R -</td><td></td></td<>	7 7	W 23 11 2 2 11 2 W 5 11 4 - 2 2 11 2 W 5 11 4 - 1 2 1 2 MW 5 11 4 - 1 2 1 2 MW 5 13 1	NA ANP	۲ ،		-		1	۱ · 		1	۰ 20	1 26	R -	
0 13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <	Rule 123 1 1 1 1 1 Rule 5 1 1 1 1 1 1 Rule 1 1 1 1 1 1 Rule	0 13 1 1 1 1 </td <td>0 123 1 123 1 1, W 5 1 1 1 <td>NP . 1</td><td>30</td><td> - ; - ·</td><td> • ~</td><td>2</td><td>1</td><td>- 7</td><td>STONTITI</td><td></td><td>1 25</td><td>-</td><td>-</td><td>0'CT </td></td>	0 123 1 123 1 1, W 5 1 1 1 <td>NP . 1</td> <td>30</td> <td> - ; - ·</td> <td> • ~</td> <td>2</td> <td>1</td> <td>- 7</td> <td>STONTITI</td> <td></td> <td>1 25</td> <td>-</td> <td>-</td> <td>0'CT </td>	NP . 1	30	 - ; - ·	 • ~	2	1	- 7	STONTITI		1 25	-	-	0'CT
MW 5 1	WW 5 1 1 1 1 1 WW 5 1 5 1 1 1 1 1 WW 5 1 1 5 1<	1 1	W 5 1 2 IPA W 5 1 1 2 IPA W 5 1 1 2 1 2 W 5 1 1 2 1 2 1 W 1 5 1 1 2 1 <	T MP	3		4		7	4	EPA	• •	61	0	•	- ·
W 5 1	W 5 1 1 2 11 2 112 2 112 2 112 2 112 2 112 2 112 2 112 2 112 2 112 2 112 2 112 2 112 112 112 2 112 112 2 112 112 2 112 112 2 112 2 112 2 112 2 2 112 2 2 112 2 2 112 2 2 112 2 2 112 2 2 112 2 2 112 2 2 112 2 2 112 2 2 2 2 112 2 2 2 112 2	W 5 1	WF 5 1	C MP	11	4	 1	-		5	EPA	-	22		1	1 2.7
x x	9 7 112AS 5 7 112AS 5 7 112AS 5 7 112AS 8 5 19 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11	5 5	K • K • • K K • K • • K K • K K		ŝ	-	1		1	~	TEXAS	-	-		0	,
1 1	5 3	13 1	5 5 5 5 5 7 11.0.051.04M 5 5 5 1 5 7 11.0.051.04M 5 5 1 5 7 11.0.051.04M 5 5 5 1 1 7 11.0.051.04M 5 7 11.0.051.04M 5 5 1 5 1 1 7 11.0.051.04M 5 7 11.0.0151.04M 5 7 7 11.0.0151.04M 5 7 7 11.0.0151.04M 5 7 7 11.0.0151.04M 5 7 7 11.0.0151.04M 5 5 11.0.0151.04M 5 5 11.0.0151.04M 5 5 5 11.0.0151.04M 5 5 11.0.0151.04M 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		9		1		ç		I EXAS	-			~	1 19,6
11 11 <td< td=""><td>11 1 1 1 1 12 13 1 1 1 1 13 1 1 1 1 1 1 14 6 1 1 1 1 1 15 1 15 1 1 1 1 1 15 15 11 1</td><td>R. 2 V</td><td>14 1</td><td></td><td>. ud</td><td>-</td><td> 1</td><td>•</td><td>4</td><td></td><td>I CITISTANA</td><td>2 -</td><td></td><td>-</td><td></td><td></td></td<>	11 1 1 1 1 12 13 1 1 1 1 13 1 1 1 1 1 1 14 6 1 1 1 1 1 15 1 15 1 1 1 1 1 15 15 11 1	R. 2 V	14 1		. ud	-	 1	•	4		I CITISTANA	2 -		-		
1 1	5 1	35 5	1 1		۰;			-	-			•	69 1			
35 11 1	15 1 1 2 11 1 1 15 1 1 1 1 1 1 1 1 16 1	2 10	15 1	SAVA AAP			•	 1	-	-		0	9	-		
5 1	5 1 100000 1 1 1	5 1	6 1 15 1 15 1 15 1 15 1 15 1 15 1 15 1 15 1 15 1 15 1 16 1 17 1 18 2 19 1 11 1 12 1 13 1 14 1 15 1 16 1 17 11 18 2 19 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 11 1 12 1 13 1 14 1 15 1 16 1 17 <td< td=""><td></td><td>15</td><td></td><td></td><td>1</td><td>ŀ</td><td>و -</td><td>I AITSSISSIN</td><td></td><td>1 18</td><td>10</td><td>10</td><td>176</td></td<>		15			1	ŀ	و -	I AITSSISSIN		1 18	10	10	176
11 1	11 15 111 26 13 26 13 13 14 14 14 27 18 13 14 15 144041545 28 13 13 14 15 144041545 28 13 13 14 15 144041545 28 13 14 14 15 14404154 29 9 14 14 15 15 26 14 14 14 15 16 15 28 9 14 14 14 15 16 16 28 14 14 14 14 16 17 16 16 16 29 14 14 15 14 14 15 16 15 16 <td< td=""><td>1 1</td><td>11 12 11 12 11 12 11 12 11 12 11 12 12 13 13 14 <td< td=""><td>Issued AAP</td><td>ھ</td><td></td><td></td><td>· ·</td><td>1</td><td>1 2</td><td>I THDI ANA</td><td></td><td>74</td><td>32</td><td>1 20</td><td>502</td></td<></td></td<>	1 1	11 12 11 12 11 12 11 12 11 12 11 12 12 13 13 14 <td< td=""><td>Issued AAP</td><td>ھ</td><td></td><td></td><td>· ·</td><td>1</td><td>1 2</td><td>I THDI ANA</td><td></td><td>74</td><td>32</td><td>1 20</td><td>502</td></td<>	Issued AAP	ھ			· ·	1	1 2	I THDI ANA		74	32	1 20	502
W W	W 25 13 1	85 35 13 1	W 26 13 1		15	- = -	1	4	¥		INEN JERSEY	9] ³		46	40	1 481.
x x	23 24 25 25 25 23 24 25 25 25 23 25 25 25 25 24 25 25 25 25 25 25 25 26 26 27 26 3 111.11015 111.11015 112 112.11015 26 3 112 12 112.11015 12 12 26 3 112 12 112.11015 12 13 14 26 3 12 12 12 13 26 27 29 26 3 14 1 12 112.11015 13 14 14 15 26 3 16 1 1 12 13 14 15 16 16 16 16 16 16 16 16 17 16 17 16 17 16 17 16 17 16 16 16 16 16 16 16 16	32 32 32 32 33 33 33 33 33 33 34 35 35 35 35 33 34 35 35 35 35 35 34 11	33 34 35 35 35 33 35 35 35 35 33 35 35 35 35 34 35 35 35 35 35 35 35 35 35 36 37 35 35 35 36 35 35 35 35 37 36 35 35 35 38 35 35 35 35 37 36 35 35 35 38 37 35 35 35 39 37 35 35 35 38 37 37 37 35 39 37 37 37 37 39 37 37 37 37 39 37 37 37 37 39 37 37 37 37 30 37 37 37 37 31 37 37 37 37 31 37 37 37 37 31 37 37 37 37 32 37 37		26	- 13	1		.		LARKANSAS	9	2 3			1 478,
23 23 24 25 26 27 28 29 29 21 23 24 25 26 27 28 29 29 20 21 22 23 24 25 26 27 28 29 29 20 21 22 23 24 25 26 27 28 29 21 22 23 24 25 26 27 28 29 21 21 22 23 24 25 26	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	33 33 34 35 36 37 38 39 31 32 33 34 35 36 37 38 39 31 32 33 34 35 36 37 38 39 31 31 32 33 34 35 36 37 38 39 31 31 32 33 34 35 36 37 38 39 31 31 32 33 34 35 36 37 38	33 34 34 35 35 36 36 37 37 37 38 36 39 37 30 37 31 37 32 37 33 37 34 37 35 37 36 37 37 37 38 37 39 37 30 37 31 37 37 37 38 37 39 37 39 37 311 37 37 37 38 37 39 37 311 37 311 37 312 37 313 37 314 37 315 37 316 37 317 37 318 37 319 37 <td>CONT INNEL</td> <td>1 2</td> <td></td> <td>-</td> <td>~~</td> <td>n .</td> <td></td> <td></td> <td>1 15</td> <td>2</td> <td></td> <td>71</td> <td>151</td>	CONT INNEL	1 2		-	~~	n .			1 15	2		71	151
x x	30 31 32 35 35 31 32 35 35 35 32 35 35 35 35 33 35 35 35 35 34 35 35 35 35 35 35 35 35 35 36 31 35 35 35 36 37 35 35 35 37 36 37 35 35 36 37 35 35 35 37 37 37 35 35 38 37 37 37 37 37 37 37 37 37 38 37 37 37 37 39 37 37 37 37 30 37 37 37 37 37 37 37 37 37 38 37 37 37 37 37 37 37 37 37 38 37 37 37 37 39 37 37 37 37 37 37 37	8 1 1 1 5 0 0 1 1 1 1 1 1 1 1 1 1 <td>30 31 32 35 <td< td=""><td>BULLET AKS</td><td>: ?</td><td></td><td>2</td><td>-</td><td>-</td><td>1 </td><td></td><td>1 14</td><td>1 15</td><td>-</td><td></td><td>2</td></td<></td>	30 31 32 35 <td< td=""><td>BULLET AKS</td><td>: ?</td><td></td><td>2</td><td>-</td><td>-</td><td>1 </td><td></td><td>1 14</td><td>1 15</td><td>-</td><td></td><td>2</td></td<>	BULLET AKS	: ?		2	-	-	1 		1 14	1 15	-		2
3 3	36 3 9 1	3 4 5	Number Num Number Nu	IN AN AN	9:			 ,	-	i .		•	1 29	•		
20 3 4 5 5 20 3 1 5 5 5 21 1 1 1 5 5 5 3 3 1 1 1 5 5 5 3 1 1 1 1 1 5 <t< td=""><td>36 23 9 11 12 5 11 12 11 12 11 11 11 11 12 12 12 11 12 5 5 12 13 14 12 14 12 11 11 11 13 13 14 <td< td=""><td>28 3 4 5 5 111 111 111 111 111 5 5 111 111 111 111 111 5 5 5 111 111 111 111 111 111 5 5 5 5 111 111 111 111 111 111 5</td><td>3 3</td><td>RENNE AND</td><td>7</td><td></td><td></td><td>1</td><td>m</td><td></td><td>AINGIGIA</td><td></td><td>1 12</td><td>•</td><td>-</td><td>-</td></td<></td></t<>	36 23 9 11 12 5 11 12 11 12 11 11 11 11 12 12 12 11 12 5 5 12 13 14 12 14 12 11 11 11 13 13 14 <td< td=""><td>28 3 4 5 5 111 111 111 111 111 5 5 111 111 111 111 111 5 5 5 111 111 111 111 111 111 5 5 5 5 111 111 111 111 111 111 5</td><td>3 3</td><td>RENNE AND</td><td>7</td><td></td><td></td><td>1</td><td>m</td><td></td><td>AINGIGIA</td><td></td><td>1 12</td><td>•</td><td>-</td><td>-</td></td<>	28 3 4 5 5 111 111 111 111 111 5 5 111 111 111 111 111 5 5 5 111 111 111 111 111 111 5 5 5 5 111 111 111 111 111 111 5	3 3	RENNE AND	7			1	m		AINGIGIA		1 12	•	-	-
3 4 1	11 -	3 4 1	3 4 11 5 5 5 11 5 12 1 13 1 14 1 15 1 16 1 17 1 18 1 19 1 11 1	ORD ANP	କ୍ଷ		4	• •	ı	11 11	SIGNITII		5	1 5	s 1	-
3 3	2 2 2 3 3 1 1 1 1 1 1 1 1 1 1 1 2 2 3 3 1 1 1 1	3 3	2 2 2 3 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1	T ST AND ARS	11	 1	 1		ł	•	MISSOURI		- IC	1 12	11 1	, 6 1
11 12 12 13 13 14 14 15 15 11 16 36 17 12 18 11 19 11 11 36 12 11 13 11 14 11 15 111 16 11 17 12 18 11 19 11 11 12 11 12 12 111 13 11 14 11 15 111 16 11 17 12 18 13 19 14 11 15 12 11 13 11 14 11 15 11 16 12 17 13 18 14 19 14 </td <td>2 2 2 3 3 1 1 1 2 2 3 4 1 1 1 1 1 1 1 1 2 2 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td>11 12 12 11 13 12 14 12 15 11 16 12 17 12 18 11 19 12 11 12 12 11 13 11 14 1 15 11 16 12 17 13 18 11 19 11 10 12 11 13 11 14 11 15 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 12 17 13 17</td> <td>11 12 12 13 13 14 14 11 15 11 16 11 17 11 18 11 19 1 11 12 11 11 11 12 11 13 11 14 11 15 11 12 11 13 11 14 11 15 11 14 11 15 11 14 11 15 11 14 11 15 11 15 11 15 12 14 13 15 14 14 15 15 16 14 17 15 18 15 19 15 11 15 11 15</td> <td></td> <td>5</td> <td>- 2</td> <td>1</td> <td>•</td> <td></td> <td>ı </td> <td>15PA</td> <td>71</td> <td></td> <td></td> <td>-</td> <td>1 27.</td>	2 2 2 3 3 1 1 1 2 2 3 4 1 1 1 1 1 1 1 1 2 2 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11 12 12 11 13 12 14 12 15 11 16 12 17 12 18 11 19 12 11 12 12 11 13 11 14 1 15 11 16 12 17 13 18 11 19 11 10 12 11 13 11 14 11 15 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 11 17 12 17 13 17	11 12 12 13 13 14 14 11 15 11 16 11 17 11 18 11 19 1 11 12 11 11 11 12 11 13 11 14 11 15 11 12 11 13 11 14 11 15 11 14 11 15 11 14 11 15 11 14 11 15 11 15 11 15 12 14 13 15 14 14 15 15 16 14 17 15 18 15 19 15 11 15 11 15		5	- 2	1	•		ı 	15PA	71			-	1 27.
	26 2 3 3 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		26 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		5	1 12	 1	5	n	-		-		-		1 206
26 3 36 36 36 36 36 36 36 36 36 36 36 36	26 2 3 3 4 11 11 11 11 11 11 11 11 11 11 11 11 1		26 3 3 4 11	LOUDE AND	-	· ,	1		ı	~		11	1 22	71	91 1	
				CITIES MP	-			-	4	•			1 36	.	\$	F17
				I AN AGAIN	61				ı	1 12	INEN YORK			_	_	-
				PUT THE ARS	%	- -		 ,					• -		_	
					1	-	-						<u> </u>	•		-
						 ,	-					-				
							-								. –	•
		-	-													
				• •			-	••• ·			• •				-	•

•

:.

3/ 6/1990

77



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 Cardanone

Cardamone Construction, Inc.

WADSWORTH/ALERT LABORATORIES, INC.

Jak 2 Mori L

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 PD: F (216: 497-9336)



general 🕴 🛃

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>

Method

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. x13dr Project Manager



1

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-HOUT (216) 497-9331



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

, -

خ `

DATE RECEIVED: 4/ 4/90

•

SAMPLE ID : FUEL OIL SLUDGE

-

ANALYTICAL REPORT

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

NOTE: ND (None Detected)



j.

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



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

, -

÷.

٠

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		

NOTE: ND (None Detected) as rec'd

-- (Not Analyzed)

1



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 Silvex ND ND*

۰ź-

1 M.

NOTE:	(None Detected, lowe (None Detected, lowe (None Detected, lowe	r detectable	limit = 0.1	mg/kg) mg/kg) mg/kg)
	(Not Analyzed)			

WADSWORTH/ALERT LABORATORIES, INC.

e de la complete de l

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
	ND	Tetrachloroethylene	ND
Chloromethane	ND	Tetrachior bethy rene	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*	•	lower detectable lower detectable	 mg/kg) as rec'd mg/kg) as rec'd
		•		



· · · ·

والدا وتسويد

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

, **-**

· · ·

SAMPLE ID : GAS TANK

ANALYTICAL REPORT

.

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

NOTE: ND (None Detected)

DATE RECEIVED: 4/4/90

.

•

.

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

.

「「「「「」」

t

1

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	

- **ب**ر

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



1

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

-

4

•:

CHLORINATED PESTICIDES METHOD 8080 LIST - GC

۰<u>۴</u>

	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)



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

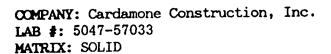
2,4-D Silvex

ND ND*

· +

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





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

SAMPLE ID: FUEL OIL SLUDGE

	· •		
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	NĽ
Carbon tetrachloride	ND	trans-1,2-Dichloroethylene	ND
Chlorobenzene	ND	Dichloromethane	NE
Chloroethane	ND	1,2-Dichloropropane	NI
Chloroform	ND	trans-1,3-Dichloropropylene	NI
1-Chlorohexane	ND	1,1,2,2-Tetrachloroethane	NI
2-Chloroethyl vinyl ether	ND	1,1,1,2-Tetrachloroethane	NI
Chloromethane	ND	Tetrachloroethylene	NI
Chlorotoluene	ND	1,1,1-Trichloroethane	NI
Dibromochloromethane	ND	1,1,2-Trichloroethane	NI
Dibromomethane	ND	Trichloroethylene	NI
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	NI
1,3-Dichlorobenzene	ND	Trichloropropane	NI
1,4-Dichlorobenzene	ND	Vinyl chloride	NI

VOLATILE ORGANICS METHOD 8010 - GC

	ND*	(None Detected, (None Detected, (Not Analyzed)					mg/kg) mg/kg)		
--	-----	--	--	--	--	--	------------------	--	--



.

WADSWORTH/ALERT LABORATORIES, INC.

QUALITY CONTROL SECTION

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:

٠,

Parameter:

WADSWORTH/ALERT LABORATORIES, INC.

Recommended Holding Time:

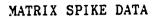
Cyanide14 daysSulfide7 daysGC Volatiles14 daysPolychlorinated biphenyls14 days (to extraction)Pesticides14 days (to extraction)Herbicides14 days (to extraction)

The above parameters were requested on April 4th.

Opal Davis-Johnson Quality Control Coordinator Cleveland Laboratory WADSWORTH/ALERT LABORATORIES, INC.

84 22

1.0



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

s de N

MATRIX SPIKE DATA

WADSWORTH/ALERT LABORATORIES, INC.

1

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

بالاستنباط فاستنفس ويهار

· .

PARAMETER	PREPARATION - Analysis date	DETECTION RESULT LIMIT			
Cyllide	4/ 6/90	ND	0.1	mg/kg	

NOTE: ND (None Detected)

.



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

, -

DATE RECEIVED: 4/ 9/90

SAMPLE ID : INTRA-LAB BLANK

ياليها المتعتقد والمتعلقا المتعالي

GENERAL ANALYTICAL BLANK REPORT

, Province and a second se

÷ 🚣

PARAMETERPREPARATION -
ANALYSIS DATEDETECTION
LIMITSulfide4/9/90ND25 mg/kg

NOTE: ND (None Detected)



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

ادعا معاملهم محمد أأتماني وال

HERBICIDES ANALYTICAL BLANK REPORT

2,4-D Silvex

ND ND*

NOTE:	ND*	(None Detected, low (None Detected, low (None Detected, low	er detectable	limit = 0.1	mg/kg) mg/kg) mg/kg)
		(Not Analyzed)			



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

	,	<i>F</i>	
PCB-1016 PCB-1221 PCB-1232			ND ND ND
PCB-1242 PCB-1248 PCB-1254			ND ND ND
PCB-1260 PCB-1262			ND

NOTE:	(None Detected, (None Detected,			mg/kg) a mg/kg) a	
	 (Not Analyzed)				



.

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

and the second second

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		



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

۰*۴*

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)			



1

۲

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)



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.

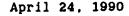
sal 2 Min

Dale L. Mori Laboratory Manager - Cleveland

April 23, 1990



WADSWORTH/ALERT LABORATORIES, INC.



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

Re:Laboratory Project #: 5255Site:Ravenna ArsenalAttn: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.

Parameter

Method

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



بالتناسية الم

COMPANY : Cardamone Construction, Inc. LAB #: 5255-57956 MATRIX : SOLID

-

DATE RECEIVED: 4/18/90

.....

SAMPLE ID : U-3

a collector of

2

3

METALS ANALYTICAL REPORT SELECTED LIST

<u>نم '</u>

Total metals analysis results - as received

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



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



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



STATES STATES

1

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

.

يبد ريوا

w

DATE RECEIVED: 4/18/90

•

_

an in the second second

SAMPLE ID : FREEDOM

METALS ANALYTICAL REPORT SELECTED LIST

Total metals analysis results - as received

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



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,

Uno whe

John S. Cardamone, President

JSC/mb

Enclosures



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

Sampling, testing, mobile labs

ANALYTICAL REPORT

90704/Ravenna Arsenal

W/A Project No. 4425

Presented to :

John Cardamone

Cardamone Construction, Inc.

WADSWORTH/ALERT LABORATORIES, INC.

) al 2 Mm.

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) 497.9774



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.

Parameter

Benzene, Toluene, Xylenes, SW846 8020 Ethylbenzene Total Recoverable Petroleum SW846 9071/EPA 418.1 Hydrocarbons 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.

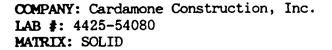
Very truly yours,

Wadsworth/ALERT Laboratories, Inc.

Carv Project/ Manager

Method

WADSWORTH/ALERT LABORATORIES, INC.



a data da da sa

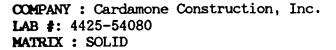
DATE RECEIVED:	2/2 2/90
DATE EXTRACTED:	3/ 7/90
DATE ANALYZED:	3/ 7/90

•

SAMPLE ID: ATLAS BACKGROUND

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

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



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)

7

1

÷



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



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 Benzene	ND ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2



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	ENT 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)	
-------	----	-------	-----------	--

ŝ

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



مناهر المناج

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.

Dal 2 Min

Dale L. Mori Laboratory Manager - Cleveland

February 28, 1990





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-6 550 BOT SOUTH

.

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

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



;

÷

í.

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	DETECTI LIMIT	
Chromium	2/19- 2/20/90	ND	0.05	mg/l
Lead	2/19- 2/20/90	ND		mg/l

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



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

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

SAMPLE ID: A-6 550 BOT SOUTH

.

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

م المشتخصات بعديات ال

1.....

.....

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

NOTE: ND (None Detected)

J (Detected, but below quantitation limit; quantitation suspect)



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

والمراجع المراجع

 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



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	DETECTIO	
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)	D (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

DATE	RFCEIVED:	2/13/90
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)	DEFECTION 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

in the second second

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)



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

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

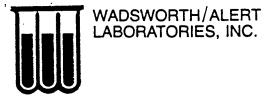
SAMPLE ID: A-6 550 LANDFILL

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)



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

.

• • •

DATE RECEIVED: 2/13/90

SAMPLE ID : A-6 550 LANDFILL

Comments of the

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: N	D (Nor	ne Detected	1)
---------	--------	-------------	----

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



3

4

÷,

•

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

.

• • • • •

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

1.

SAMPLE ID: A-6.550 LANDFILL

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

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



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 SPECIROSCOPY

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

NOTE: ND (None Detected)

J (Detected, but below quantitation limit; quantitation suspect)

;.

÷



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	DETECTI 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)

2

•

Initial pH	8.8	su
Final pH	5.0	\mathbf{su}
Amount of acetic acid used per method	72	ml



-

•

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

 DATE RECEIVED:
 2/13/90

 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



ì

000

.

COMPANY: Cardamone Construction, Inc. LAB #: 4285-53534 MATRIX: SOLID
 DATE RECEIVED:
 2/13/90

 DATE EXTRACTED:
 2/20/90

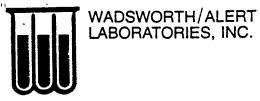
 DATE ANALYZED:
 2/20/90

.

SAMPLE ID: A-12 5000 POT EAST

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

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



÷

 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

الوارية سيستستح متعاقبة المحاد المحاد معاما البل

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	7 0	៣]



....

-

A PARTY OF A

*

....

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)	DEFECTION LIMIT
Xylenes	ND	1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1



ŝ

ļ

ł

×

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	RFSULT	DETECTION LIMIT
Flash Point (PMCC)	2/23/90	>210	Deg.F
pH	2/14/90	6.7	su



5

COMPANY: Cardamone Construction, Inc. LAB #: 4285-53535 MATRIX: SOLID
 DATE RECEIVED:
 2/13/90

 DATE EXTRACTED:
 2/20/90

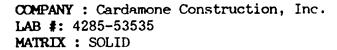
 DATE ANALYZED:
 2/20/90

SAMPLE ID: A-1 5000 LANDFILL

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

PARAMETER	RESULT (mg/kg)	DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	001	15





DATE RECEIVED: 2/13/90

· ·

a di sentencia di seconda di s

SAMPLE ID : A-F: 5000 TANDFILL

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		mg/l

NOTE: ND (None Detected)

í

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



. . . .

-

ý

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



.: •

,

.

-

WADSWORTH/ALERT LABORATORIES, INC.

.

.....

QUALITY CONTROL SECTION

.....

....



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

••



1

1

.

MATRIX SPIKE DATA

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

1.1



MATRIX SPIKE DATA

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



1.11.1

ł

1

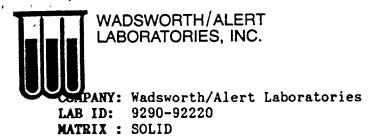
.

. ...

MATRIX SPIKE DATA

the last of the second

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



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)

PANY : Wadsworth/Alert Laboratories, Inc. RECEIVING DATE : 2/14/90 LABORATORY ID : 9290-92214 SAMPLE MATRIX : SOLID

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

WADSWORTH/ALERT LABORATORIES, INC.

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

WADSWORTH/ALERT LABORATORIES, INC.

COMPANY : Wadsworth/Alert Laboratories, Inc. RECEIVING DATE : 2/19/90 LABORATORY ID : 9090-90219 SAMPLE MATRIX : WATER

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

METALS ANALYTICAL BLANK REPORT SELECTED LIST

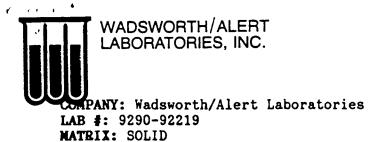
BLEMENT	PREPARATION Analysis date	RESULT	DETECTION LIMIT
Chromium	2/19- 2/20/90	ND	0.05 mg/l
Lead	2/19- 2/20/90	ND	0.1 mg/l

ND - NONE DETECTED

•

5

• 7



ī

14 4 K

7

j

÷,

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)

	5	WADSWORTH/A	ADSWORTH/ALERT LABORATORIES 5405 FAST SCHAAF RD /CLEVELAND. OH 44131	JRIES 44131	
Chain-of Custody Record		(2	(216) 642-9151	4	13/2
PROJ. NO. PROJECT NAME/LOCATION	1E/LOCATION 1/2	÷	PARAN	PARAMETER, C	3
ES: (Signature)	man (p) () ~				REMARKS
DATE TIME COMP.	STATION LOCATION			A La A	
NA 12	A-6 53	7 (ast)4	× ,		
X Ma L	<u> </u>	Aprill	$\langle \times$	X X	
#1 79 141 ×	A-1 500 1	57 M127	× × × × ×		
X WV 6/2	1 0005 1-4 	VOLTUL	X X X	XX	
				•	
Relinquiehed by: (Signatura)	Date / Time Re	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time Re	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time Re (Sig	Received for Laboratory by: (Signature)	Date / Time		JOHN CHEDANIONE (DUIST.
Distributio	Distribution Original Accompanies Shipment. Copy returned with Report.	nent. Copy returned with Re	port.	RESULTS 70 (5, 1-, 1/1)	

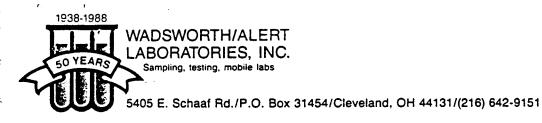
and the second of the second second

والمراجعين المتعممينية والمراجع مروا فيستنادر والمتقومين والمراجع والمراجع

••

.

.



ANALYTICAL REPORT

90704/Ravenna Arsenal

W/A Project No. 4286

Presented to :

John Cardamone

Cardamone Construction, Inc.

WADSWORTH/ALERT LABORATORIES, INC.

Jal- 2 MIni 4

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



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)



NOTE: ND

(None Detected)

P

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

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



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 4

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	ANALYZFD:	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)



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	DETECTI 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)

.

Ş

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



• · · · · · ·

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

DATE RECEIVED: 2/13/90

. . .

•

SAMPLE ID : TANK #47 LAND FILL

ANALYTICAL REPORT

.74

.

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)



i

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

• • • • •

٠.

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)



. .

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

Į

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	รน
Final pH	5.0	SU
Amount of acetic acid used per method	14	m 1.



WADSWORTH/ALERT LABORATORIES, INC.

COMPANY: Cardamone Construction, Inc.	. DATE RECEIVED:	2/13/90
LAB #: 4286-53538	DATE EXTRACTED:	2/20/90
MATRIX: SOLID	DATE ANALYZED:	2/20/90

- **

:...

SAMPLE ID: TANK #47 LAND FILL

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

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

NOTE: ND (None Detected)

J (Detected, but below quantitation limit; quantitation suspect)



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, 124 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)



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	DETECTIO 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	m].



.....

.

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

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

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

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



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



• .

.....

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



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

The second state of the second se

 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)



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.

يحصل يتكثر بالكرية

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 b

(Detected, but below quantitation limit; quantitation suspect)



į

-

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	DETECTI LIMII	
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

سيدين كالربي الحجا



the second s

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

يقتعد الجاران فالمستابين

DATE RECEIVED: 2/13/90 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)

F

.

.

4



-

WADSWORTH/ALERT LABORATORIES, INC.

QUALITY CONTROL SECTION



1 ...

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



MATRIX SPIKE DATA

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

ing in the strength of the str



,

•

.

--

MATRIX SPIKE DATA

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

WADSWORTH/ALERT LABORATORIES, INC.

والمحمج فالمستشير والمراجب والمستقلفات والرار

-

1 1

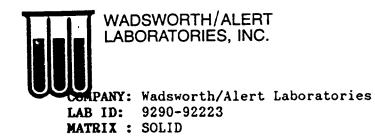
TTO STATES

;

MATRIX SPIKE DATA

a se al successione en la sel de la seconda de

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



r

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

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

TOTAL BECOVERABLE PETROLEUM HYDROCARBONS BLANK REPORT

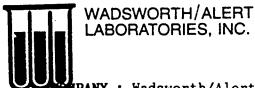
	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/kg	15

NOTE: ND (None Detected)

.....

2

ł



MPANY : Wadsworth/Alert Laboratories, Inc. RECEIVING DATE : 2/14/90 LABORATORY ID : 9290-92214 SAMPLE MATRIX : SOLID

محصبا بالمحمد فالمستحد العجوا والأراب بالمطالبك فستعمد

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

COMPANY : Wadsworth/Alert Laboratories, Inc.RECEIVING DATE : 2/19/90LABORATORY ID : 9090-90219 SAMPLE MATRIX : WATER

WADSWORTH/ALERT LABORATORIES, INC.

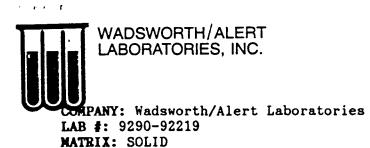
.....

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

METALS ANALYTICAL BLANK REPORT SELECTED LIST

BLEMENT	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

÷



.

 DATE RECEIVED:
 2/19/90

 DATE EXTRACTED:
 2/19/90

 DATE ANALYZED:
 2/19/90

.

-- **k** - - - - -

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

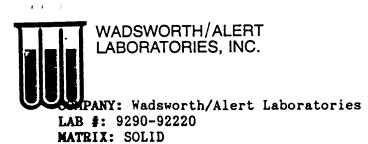
SELECTED ORGANIC COMPOUNDS ANALYTICAL BLANK REPORT

ببهاتهم ومعمقا وروا

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

NOTE: ND (None Detected)

i



.

 DATE RECEIVED:
 2/20/90

 DATE EXTRACTED:
 2/20/90

 DATE ANALYZED:
 0/20/90

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

SELECTED OBGANIC 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)

Cont Jam. Chain-of Custody Record	Cont していい Cont	Recoi	· • • •	J		WADSWORTH/ALERT LABORATORIE 5405 EAST SCHAAF RD./CLEVELAND, OH 44131 (216) 642-9151	I/ALER AAF RD./((216) 642		LABORATORIES EVELAND, OH 44131 151	J. OH	ORI 1 441:	ES 31		; . ¢ .	1370
PROJ. NO. 95704	o \	PROJECT N		VAME/LC	PROJECT NAME/LOCATION		ÖN		Ē	ARA	MET	PARAMETER	Lu.		•
SAMPLERS: (Signature)	PLERS: (Signature	neture) (DVVE		31	TP WILDA		OF CON- TAINERS	~~			CA ST			REMARKS	
STA. NO.	DATE	TIME	COMP.	GRAB.		STATION LOCATION					AL CON	2/2	~		
1	2/2	MA	↓		Mult #17	FREEDON PAR SAM	, / ,			\times					
1 C #	1/2 1/2	I Val	<u></u>	×	744424412	TTHOM POTAVITH LAUDFUL		x X X	$\times \times$	$<$ \times	X	X			
									-						
1-21 -21	22	NNV NNV		\prec	11. + 12. + 14 D. + 7 + 14	1667, Coutt		× × × ×	× ×	\times					
2 CT 2	6/2	INA			Terred 1	201. NPK411				-[×	×			
				-+											
									_						
Relinquished by: (Signature)	ied by: (5	Signature)	- Julia		Date / Time	Beceived by: (Signature)		Relinquished by: (Signature)	hed by	: (Signat	ture)		Date / Time	Received by: (Signature)	(0)
Relinquished by: (Signature)	y:kq per	Signature)			Date / Time	Receiv	¥1.	Relinquished by: (<i>Signature</i>)	hed by	: (Signal	(nre)		Date / Time	Received by: (Signature)	(a
Relinquished by: (Signature)	א) :vd ber	Signature)	-		Date / Time	Peceived for Laboratory by: (Signature)			Date / Time		Ren	TX/100	CE JUINICH	TANDORE JUNICH THANKINE CONST	12
			Distrik	oution	Original Accompanie	Distribution Original Accompanies Shipment. Copy returned with Report.	l Report.				4	KFSULTS	75 70 G.E.N	-' <i>Λ</i> ']	

I.



ففعد بالمستعققة والأربد

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.

al 2mm

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



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 *

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

ATLAS

د میداد. و دومان و او د

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

NOTE: ND (None Detected) J (Detected, but b

(Detected, but below quantitation limit; quantitation suspect)



-:-

.

WADSWORTH/ALERT LABORATORIES, INC.

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

مسجع لأحال بالانتظمية) رقاريتيه فوسعته بتمدده الانتبارين البليان والمربدين

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

DATE RECEIVED: 2/14/90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTI	
Chromium	2/19- 2/20/90	ND	0.05	mg/1
Lead	2/19- 2/20/90	ND	0.1	mg/1

NOTE: ND (None Detected)

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



÷,

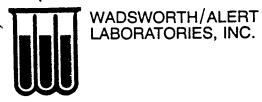
COMPANY: Cardamone Construction, Inc. LAB #: 4306-53656 MATRIX: SOLID DATE RECEIVED: 2/14/90 DATE EXTRACTED: 2/16/90 DATE ANALYZED: 2/16/90

SAMPLE ID: BAST BOTTOM

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

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

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



.

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

ە ئەلەر بىر بىسلامەسىشىدى

 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)



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

SAMPLE ID : WEST WALL

.

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	DETECTI 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

DATE RECEIVED: 2/14/90



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)

1

÷

J (Detected, but below quantitation limit; quantitation suspect)



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 RESULT LIMIT	
Flash Point (PMCC)	2/23/90	>210	Deg.F	
pH	2/15/90	7.8	su	

NOTE: ND (None Detected)



ļ

٠.,

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: LAND FILL 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.

NOTE: ND

(None Detected)

•

COMPANY : Cardamone Construction, Inc. LAB #: 4306-53658 MATRIX : SOLID DATE RECEIVED: 2/14/90

SAMPLE ID : LAND FILE PILE

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	DETECTI LIMIT	
Chromium	2/19- 2/20/90	ND	0.05	mg/l
Lead	2/19- 2/20/90	ND	0.1	mg/l

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



-:--

Sales of a second second

•

3

-...

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



1

•

WADSWORTH/ALERT LABORATORIES, INC.

QUALITY CONTROL SECTION



ł

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



.

Ţ

-

4

2

. ...

MATRIX SPIKE DATA

.

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

.



- 1

•

n faith an ann an Aontaichte an Aontaichte an Aontaichte ann an Aontaichte ann an Aontaichte ann an Aontaichte

MATRIX SPIKE DATA

.A

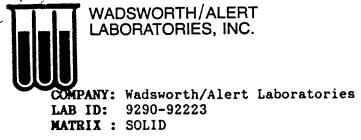
.

1.1

• • •

.

LAB ID	PARAMETER	SPIKE PERCENT RECOVERY	SPK/DUP PERCENT RECOVERY	SPIKE MATRIX	QC CONTROL LIMITS
	SELECTED ORGANIC COMPOUNDS	1			
900216	Benzene Toluene Xylene	118 84 83	102 74 73	SOLID	(50-146) (57-139) (38-144)



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)

...

.

1

.

COMPANY : Wadsworth/Alert Laboratories, Inc. RECEIVING DATE : 2/14/90 LABORATORY ID : 9290-92214 SAMPLE MATRIX : SOLID

.....

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

WADSWORTH/ALERT LABORATORIES, INC.

and the second se

1

-----٠ ł

ie, ť

METALS ANALYTICAL BLANK REPORT SELECTED LIST

Leachate testing in accordance with USEPA Manual SW846 Method 1310.

EP TOXICITY EXTRACTION DATE: 2/14/90

BLEMENT	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	

COMPANY : Wadsworth/Alert Laboratories, Inc. RECEIVING DATE : 2/19/90 LABORATORY ID : 9090-90219 SAMPLE MATRIX : WATER

· •

.....

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

WADSWORTH/ALERT LABORATORIES, INC.

a. E 4

i. Je

ALC: NO.

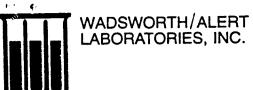
• •

1----

. . . .

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



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 Benzene Toluene	ND ND ND	0.2 0.2 0.2
Ethylbenzene	ND	0.2

NOTE: ND (None Detected)

. .

1

				ith Report.	Distribution Original Accompanies Shipment. Copy returned with Report.	companies (original Acc	Distribution	• •
		Remarks	Date / Time	by:	Received for Laboratory by: (Signature)	Date / Time	Dat	Relinquished by: <i>(Signature)</i> a	Relinqui
Received by: (Signature)	Date / Time Re		Relinquished by: (Signeture)		Received by: (Signature)	e / Time	Date	Relinquished by: (Sighature)	Relinqui
Kelki shielli	15.90 4.20 1	10 2.	Thank Fit		Weber E.	3572	2/13	Jarcas Joluour	Ka
Received by: (Signature)	Date / Time Re		Relinquished by: (Signature)	•	Received by: (Signature)	e / Time I	Date	Relinquished by: (Signature)	Relinqui
	-								
						- 14 14 1			
					the pile	ANA	LAN	X 25.2 01/av	L.
			<	\ \	-	ATLAS	-	3/1 /2 / 2 / 2	1 1
			XXXX	/	wall	. [4]	1 mes	< 85:0 04/4	Z-#
				-	() () () () () () () () () () () () () (ATLAS	1	10'E (/E/a)	,/
			NA ANA		STATION LOCATION	STATIC			STA. NO.
REMARKS			D	CON- TAINERS		wind	Tell	$\frac{l}{l}$	
		PARAMETER	PARA	QR O	7R Seval			PROJ. NO. PROJECT NAME/LOCATION	PROJ. NO.
7305		ID, OH 44131	EVEL	HAAF RD./CLEVE (216) 642-9151	5405 EAST SC	(SJPnJ		Chain-of Custody Record (216) 642-9	Chain-ot

•

.

•

•2

•

٠.

1

2/23/90 IDAM Joandamone test Dave gemeent Phone Corus JILLOSET (214)781-4120 A-6 550

No Background yet. Samples as of yet.

TRP4-ND BSOUTH Chrom - ND LEAD - ND BTXE ND NORTH END TRPH ND Chrom ND LEAKHABLE LEAD NIJ LEACHABLE BTXE ND

LAND FILL Sports PH-7 ND TRPH NO LARHABLE Chrom ND LEACHABLE LEAD NO LEACHABLE ND ZYLENE BIXE

can be put back in Role?

A-1 5000 gal @ Power House BOTT WEST TRPH -16 Chrome ND Porto/Miceron LEAD ND BIXE ND BOTTOM EAST leads & chrome TRPH ND leachables CHROM ND LEXD ND BIXE ND

LANDFILL SPOILS PH-6.7 TRPH - 100 CHROM -ND LEAD - ND EYLENE BIXE -

(nonhozardous but able to put back) mhole?)

- 1 Mirca pam

HAVENS AND EMERSON INCORPORATED

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 CONSULTING ENGINEERS

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

June 15, 1989

ENVIRONMENTAL ENGINEERING

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

4

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.

Arsenal			
<u>Tank No</u>	Location	Capacity	Registered
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

ŀ	IAVENS AND EMERSON, INC. CONSULTING ENGINEERS BOND COURT BUILDING CLEVELAND, OHIO 44114	June 15	18138 <u> <u> </u> </u>
PAY TO THE ORDER OF	STATE FIRE MARSHAL		\$ 50.00
Ameritrust Company National Association Main Office 900 Euclid Avenue Cleveland, Ohio 4410	Ameritrust	HAVENS AND	EMERSON, INC.
FOR	"018138" :04100687:50015 :0225"		Dagn
	HAVENS AND EMERSON, IN		····

HAVENS AND EMERSON INCORPORATED

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

CONSULTING ENGINEERS

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

June 21, 1989

ENVIRONMENTAL

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

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,

AVENS AND EMERSON, INC

David A. Shaper

DAS/sb

Enclosure

approximation of Lubic Ads

Old Atlas

Freedom 11-6 1-3

3-3960 1-exua 550

A-1

Charlestown

75 yd 3 35 yd 3 $LOO yd^3$ 750 yd^3 $\mathcal{C}_{\text{Vd}^3}$ 550 yd3 200100



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

ANALYTICAL REPORT

Wayne -Your copies of Cardamone lab results SHe

Ravenna Arsenal W/A Project No. 5048

•

Presented to :

John Cardamone

Cardamone Construction, Inc.

WADSWORTH/ALERT LABORATORIES, INC.

-n Jar 2

Dale L. Mori Laboratory Manager - Cleveland

April 11, 1990



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



÷

. .

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

WADSWORTH/ALERT LABORATORIES, INC.

.

1

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

DATE RECEIVED: 4/ 5/90

and the second second

SAMPLE ID : SOUTH EAST BOTTOM

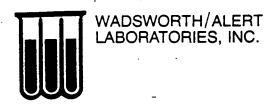
METALS ANALYTICAL REPORT SELECTED LIST

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)



.

,

Ś

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	DETECTIO	
Chromium	4/ 6/90	ND	0.05	mg/l
Lead	4/ 6/90	ND	0.1	mg/l

NOTE. ND (NOTE Debected	NOTE:	ND	(None	Detected
-------------------------	-------	----	-------	----------

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



,

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

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

.

1 ...

SAMPLE ID: SOUTH EAST BOTTOM

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

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

e

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



.

- -

ļ

ş

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

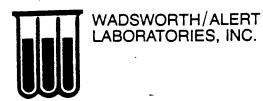
DATE RECEIVED:	4/	5/90
DATE EXTRACTED:	4/	6/90
DATE ANALYZED:	-4/	6/90

SAMPLE ID: PILE

ANALYTICAL REPORT - INFRARED SPECIROSCOPY

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

Ŧ



COMPANY : Cardamone Construction, Inc. LAB #: 5048-57036 MATRIX : SOLID DATE RECEIVED: 4/ 5/90

1111415

1.

SAMPLE ID : PILE

METALS ANALYTICAL REPORT SELECTED LIST

Total metals analysis results - as received

÷

ELEMENT	PREPARATION - ANALYSIS DATE RESU	DETECTI LT LIMIT	
Chromium	·, · · ·, · · · ·	.1 5	mg/kg
Lead		ND 10	mg/kg

NOTE: ND (None Detected)



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

FLEMENT	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	d)
-------------------------	----

į,

.

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



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

ł

Í

.

~

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

1 ...

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



.

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

r



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

ي الد المحمد ما الراج

DATE RECEIVED: 4/ 5/90

SAMPLE ID : SOUTH WEST BOTTOM

.

METALS ANALYTICAL REPORT SELECTED LIST

1

Total metals analysis results - as received

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

÷

NOTE: ND (None Detected)

ŝ

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

.

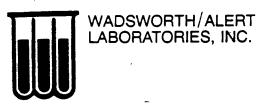
ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTI LIMIT	
Chromium	4/ 6/90	ND	0.05	mg/l
Lead	4/ 6/90	ND	0.1	mg/l

NOTE: ND (None Detected)

1

.

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



-

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

DATE RE	CEIVED:	4/	5/90
DATE EX	TRACTED:	4/	6/90
DATE AN	ALYZED:	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

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

đ

E

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)

• •

. .

.

MATRIX SPIKE DATA

• • • •

WADSWORTH/ALERT LABORATORIES, INC.

_

i i

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

. . . •

•

ľ

Ĵ

MATRIX SPIKE DATA

• • • •

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

·····

Į,

Ī

न

COMPANY: Wadsworth/Alert Laboratories LAB ID: 9290-92326 MATBIX : 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

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

NOTE: ND (None Detected)

. .

T

â

COMPANY : Wadsworth/Alert Laboratories, Inc. RECEIVING DATE : 3/27/90 LABORATORY ID : 9090-90327 SAMPLE MATEIX : WATER

-

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

	•		
BLEMENT	PREPARATION - Analysis date	RESULT	DETECTION LIMIT
Chromium Lead	3/27- 3/28/90 3/27- 3/28/90	ND ND	0.05 mg/l 0.1 mg/l

METALS ANALYTICAL BLANK REPORT SELECTED LIST

.

_

 Π

ľ

. . . . /

COMPANY : Wadsworth/Alert Laboratories, Inc. RECEIVING DATE : 3/27/90 LABORATORY ID : 9290-92327 SAMPLE MATRIX : SOLID

.....

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

BLEMENT	PREPARATION - ANALYSIS DATE		
Chromium	3/27- 3/28/90	• ND	0.05 mg/l
Lead	3/27/90	ND	0.1 mg/l

. . **.**

.

COMPANY: Wadsworth/Alert Laboratories LAB #: 9290-92323 MATBIX: 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
	~ ND	1
Xylenes	ND	1
Benzene		1
Toluene	ND	•
Ethylbenzene	ND	1

÷

NOTE: ND (None Detected)

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

······

918- 918

50 YEARS

I

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.

Dal 2Mmi

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



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.

ParameterMethodBenzene, Toluene, Xylenes,
EthylbenzeneSW846 8020Total Recoverable Petroleum
HydrocarbonsSW846 9071/EPA 418.1Hydrocarbons
Metals: Cr, PbSW846 7000 SeriesEP Toxicity ExtractionSW846 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 Mahager

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

F

ANALYTICAL REPORT - INFRARED SPECTROSCOPY

Ŧ

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

1.

L

F

2

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 Lead	- - -	3/27- 3/28/90 3/27- 3/28/90			g/l g/l

NOTE: ND (None Detected)

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

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

I

2

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

Ŧ

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

}

Γ

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

r

PARAMETERDETECTION
RESULT (mg/kg)Total Recoverable Petroleum Hydrocarbons50017

.

COMPANY : Cardamone Construction, Inc. LAB #: 4871-56060 MATRIX : SOLID DATE RECEIVED: 3/23/90

٠.

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

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

r

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

-

IJ

QUALITY CONTROL SECTION

.

- ******

٠.,

MATRIX SPIKE DATA

WADSWORTH/ALERT LABORATORIES, INC.

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)

I

F

MATRIX SPIKE DATA

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

WADSWORTH/ALERT LABORATORIES, INC.

۰. ^۱

E.

.

Ŋ

And a local division of the

MATRIX SPIKE DATA

. . .

· •

* .

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

8

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

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

NOTE: ND (None Detected)

.

COMPANY : Wadsworth/Alert Laboratories, Inc. RECEIVING DATE : 3/27/90 LABORATORY ID : 9090-90327 SAMPLE MATRIX : WATER

- **1**

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

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

METALS ANALYTICAL BLANK REPORT SELECTED LIST

I

Π

COMPANY : Wadsworth/Alert Laboratories, Inc. RECEIVING DATE : 3/27/90 LABORATORY ID : 9290-92327 SAMPLE MATEIX : SOLID

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

BLEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Chromium	3/27- 3/28/90	+ NE	/3
Lead	3/27/90	NI	



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
	✤ ND	1
Xylenes		1
Benzene	ND	1
Toluene	ND	1
Ethylbenzene	ND	1

NOTE: ND (None Detected)



ŝ

J

-

COMPANY: Cardamone Construction, Inc. LAB #: 4413-54044 MATRIX: SOLID	DATE RECEIVED: Date extracted: Date analyzed:	2/28/90
SAMPLE ID: A1 5000 PRODUCT LINE		

SELECTED ORGANIC COMPOUNDS ANALYTICAL REPORT

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

NOTE: ND (None Detected) J (Detected, but below quantitation limit; quantitation suspect) SUBCONTRACT WEEKLY STATUS REPORT

15 WEEK ENDING P.O. NUMBER P.O. DESCRIPTION 19A C WEATHER CONDITIONS PERSONNEL ON JOB DAYS WORKED WORK PERFORMED THIS WEEK CARDAMONE IS STILL WORKING FILAL OSURE REDOR Ŧ PERCENT COMPLETE - REMARKS SOME OF THE LANGUAGE IS UNACCEDTABLE & MIS-LEADING WE HAVE ASKED CARDANONE TO CORRECT THIS LANGUAGE TO ONLY REFLECT ACTUAL EVENTS. FOR SUME REPEAR CARDAMONIE is CONTINUING TO WRITE IN THE MIS-LEADING LANGUAGE. IT is BECOMMET A NUISANCE TO KEET ASKING FOR THE SAME CORRECTIONS PROJECT ENGINEER

SUBCONTRACT WEEKLY STATUS REPORT

۰.

lay 90 Z WEEK ENDING_ 195 0 P.O. NUMBER_

P.O. DESCRIPTION 12UST Removal
(Cardamone)
WEATHER CONDITIONS
PERSONNEL ON JOB
DAYS WORKED
WORK PERFORMED THIS WEEK
Cardamore submitted a draft of the Closure report for RAI review.
percent complete
REMARKS
· · · · · · · · · · · · · · · · · · ·
PROJECT ENGINEER Machell. Alert 29 Mar 90

۰.

े *****

/	
SUBCONTRACT WEEKLY STATUS REPORT	
WEEK ENDING 18 May 90	
P.O. NUMBER 1957×3^{11}	
P.O. DESCRIPTION 12 UST Removed	
WEATHER CONDITIONS Range GO	
PERSONNEL ON JOB 3	
DAYS WORKED	
WORK PERFORMED THIS WEEK	
This were Candanaone secled all 12	
NST exampations, We Still have a Con	2.
with settlement of the large excounting	7
Cardamone still ouses TEAT 42 Close	L
PERCENT COMPLETE 98%	
REMARKS NO PORTE & tost results and lead &	
/	
PROJECT ENGINEER WALLE A CONTRACT ENGINEER WALLE A CONTRACT ENGINEER)

ł

•••

.

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 P.O. NUMBER / P.O. DESCRIPTION (ST Remodal (12 Tanks) Cardamore WEATHER CONDITIONS FERSONNEL ON JOB Z-3 DAVID MORNEL / WCRE PERFORMELY THIS WEEK Cardamone Came in 7 Seeded & Mulched all excaptions We are still awaiting final sample data & Closure report PERUPATION COMPLETE _________ REEDRAC PROJECT ENGINEER

SUBCONTRACT WEEKLY STATUS REPORT WEEK ENDING 30 March 90
P.O. NUMBER 19506
P.O. DESCRIPTION ST Cemodal
((ardamone)
WEATHER CONDITIONS Kain
personnel on job 20-10.
days worked $\underline{a}^{i}\underline{3}^{i}\underline{2}$
WORK PERFORMED THIS WEEK
Cardannone removed' - le Eludas drom the Site
They have also removed cite of contained
Sail by weeks and & only have
i Post.
PERCENT COMPLETE 8,5%
REMARKS
They Still have to report the stallark
They Still have to report the Sidualk Officiend gate & seed & mulch all sites
PROJECT ENGINEER // Juris / Carlat

5, 2

SUBCONTRACT WEEKLY STATUS REPORT
WEEK ENDING 73 March 90
P.O. NUMBER 1950
P.O. DESCRIPTION ST Removal
(Cardamone)
WEATHER CONDITIONS Frin
personnel on JOB_{5-8}
DAYS WORKED 2
WORK PERFORMED THIS WEEK
Candamana has stanted to backfill all
aven enne atimes (except Chariestoion gate de belou
"En Tuesday March 27 - hey Should is relady to rima
ant contaminater materials and site
PERCENT COMPLETE 75%
REMARKS Charlostown gate: Atta pomo funther exavation
al Charlestour gate / due to bad sample results) to the
Exercition Supe it una determined that
Dile would miss durither dunding to remail allas
the contamenate bail @ this time. To do so the
Eulding foundation of will have to be remained to
PROJECT ENGINEER / Martich 2/1/1/20

•

enable further excavation. We are currentily seeking additional functing The contamination appears to have been cleaned up in the north end & now is only @ the south location. Cardamone took(Z) more samples month & south which we should have results on by Trees. March 27.

· · · · · ·

.

ţ

SUBCONTRACT WEEKLY STATUS REPORT WEEK ENDING 14 P.O. NUMBER P.O. DESCRIPTION omes 15 (d)-7C WEATHER CONDITIONS PERSONNEL ON JOB DAYS WORKED WORK PERFORMED THIS WEEK ontinuene to Cardam Jamp +D 011 al n) Lic samples A PERCENT COMPLETE et to REMARKS Michanore toget ALLA musell MAI 3 M A $G \cap$ 90-011 2×C MA Cor Juci ഹ no contaminatio material & how mar remove Z PROJECT ENGINEER augu

AND CRAPTIC CAL

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

SUBCONTRACT WEEKLY STATUS REPORT

ţ

1

.

......

:

1

ż

5

.....

WEEK ENDING G March 90
P.O. NUMBER 1950X0
P.O. DESCRIPTION UST REMOVAL
(Cardamone')
WEATHER CONDITIONS Jain
PERSONNEL ON JOB
DAYS WORKED -
WORK PERFORMED THIS WEEK Cardamone sent thus more results
tor excavated material. We are currently rever The results to see if any more are still required They came back on bri morning (3/9) to becover
the excavated fill place
PERCENT COMPLETE 52%
REMARKS
·
·
PROJECT ENGINEER Wayne J. Carkich 12 March 90

		8 Marc	H 90		
	Pe Pe	8 MARC ARDAMON RCENT COMP	E DATE LETE 52	196571021 3/30/90	
TASK PREPORT		ENT COM			ercentage
EXCAVATION ANHUNBITOR					Plás
REMOVAL DEHOVE GUDGE ROMTANKS					E OZE
CLEAN AND					
WSPOSE OF MIKS (APPENDAGE Modelaho Eulips Samples SLUDGE # BACKEJROUND	The second second second second				PLACE
BACKEROWD GLUDGE DISPOSAL				· · · · · · · · · · · · · · · · · · ·	- ð
EXCAVAJENI SCREENING & SAMPLE	Value and the state of the stat				Printer
DISPOSAL DISPOSAL BACKFILL EXCAVATION		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		7455
<u> </u>		- F		TT	
TOPSOL, GRADE SEED, FERTILIED MARCH TWIKS RECLAIM		· · · · · · · · · · · · · · · · · · ·			PLASER
	· · · · · · · · · · · · · · · · · · ·				
A					

LAYAWAY/RELOCATION PROJEC		AS OF EOM			ENTS CONTROL SYMI		
(AMCCOMR 235-5)	1	April 6,	April 6, 1990		SMCPB-100	CO	
): Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock Island, IL 61299-6000	FROM:				DATE: 4/6/90		
PROJECT TITLE							
FY89 Environmental Restorat		ve 12 USTs				•	
5892910-007	3. CONTRACT NO CLIN 46AD	MOD88		(Calculate	YSICALLY COMPLETE using accepted earn opendix, AMCCOMR	ed value conc	
PRON	6. PCT FINANCIALL			95	%		
MILESTONES g	INITIAL PLANN 5	ED DATE	CURRENT	PLANNED DATE	ACTU	JAL DATE d	
START WORK		1/8/90			1/11/9	90	
25 PCT PHYSICALLY COMPLETE			1/26/9	0	2/16/	2/16/90	
. 50 PCT PHYSICALLY COMPLETE		2/23/9		0	3/9/9	3/9/90	
1. 75 PCT PHYSICALLY COMPLETE			3/9/90		3/23/	90	
2. 90 PCT PHYSICALLY COMPLETE			3/23/9	0	3/30/	90	
3. 100 PCT PHYSICALLY COMPLETE			3/30/9	0			
FINANCIAL CATEGORIES	ORIGINAL BUDGET- f	AWARDED 9	EX	PENOED	ESTIMATE AT COMPLETION i	VARIANC	
4. IN-HOUSE LABOR							
5. MATERIAL							
5. SUBCONTRACT							
7. OTHER		_					
8. TOTAL							
9. REMARKS. A. Tank #10 Charlestown Gat 1. The building's four		ave been rem	noved				

- 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 wil be 4/16/90

٠.

a a **deservação de servação La servação de s**

X 7

.

•.•.

		AS OF EOM			REQUIREN	AENTS (ONTROL SYM	BOL:	
LAYAWAY/RELOCATION PROJECT (AMCCOMR 235-5)	STATUS REPORT	March 3	0, 19	990			SMCPB-100	5	
0:	FROM:				_L		DATE:		
Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock Island, IL 61299-6000							April	2, 1990	
1. PROJECT TITLE FY90 Environmental Restoration	n Project Remov	ve 4 USTs						• •	
2. PROJECT NO 5902910-04	3. CONTRACT NO CUN46AE MOD				(Calculate	using a	LY COMPLETE accepted earns x, AMCCOMR	ed value concep	
5. PRON	6. PCT FINANCIALL	Y COMPLETE				100%	, ,		
MILESTONES a	INITIAL PLANN	IED DATE	c	URRENT PLA	NNED DATE		ACTI	JAL DATE d	
7. FUNDS AVAILABLE									
8. START WORK			Janu	ary 10	, 1990		Sanuary 1	1, 1990	
9. 25 PCT PHYSICALLY COMPLETE			Janu	ary 26	, 1990 January		January 2	26, 1990	
10. 50 PCT PHYSICALLY COMPLETE			Febr	uary 9	, 1990	.990 February 199		1990	
11. 75 PCT PHYSICALLY COMPLETE			Febr	uary 2	3, 1990	1	March 9,	1990	
12. 90 PCT PHYSICALLY COMPLETE			Marc	h 16,	1990	l1	March 16, 1990		
13. 100 PCT PHYSICALLY COMPLETE			Marc	h 30,	1990	1	March 30,	1990	
FINANCIAL CATEGORIES	ORIGINAL BUDGET f	AWAR91 9	iD		N DE D		IIMATE AT IMPLETION i	VARIANCES I	
14. IN-HOUSE LABOR									
15. MATERIAL				<u> </u>			<u></u>		
16. SUBCONTRACT						. <u></u>			
17. OTHER									
18. TOTAL									

••••••••••

-•••

19. REMARKS

......

. . .

•

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

		AS OF EOM		REQUIREN	ENTS CONTROL SYM	BOL:
(AMCCOMR 235-5)	ATUS REPORT	March	30, 1990		SMCPB-100	05
TO: Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock island, IL 61299-6000	FROM:				DATE: April 2	, 1990
1. PROJECT TITLE Fy89 Environmental Restoration	Project Rem	ove 12 UST	3			
2. PROJECT NO 5892910-007 5. PRON	3. CONTRACT NO CLIN 46AD 6. PCT FINANCIA	MOD88		(Calculate	IYSICALLY COMPLET using accepted earn opendix, AMCCOMR %	ed value concepts,
MILESTONES a	INITIAL PLA	NNED DATE	CURRENT P	LANNED DATE c	ACTI	UAL DATE d
7. FUNDS AVAILABLE						
8. START WORK			January 8	, 1990	January	11, 1990
9. 25 PCT PHYSICALLY COMPLETE			January 2	6 , 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	ORIGINAL BUDGET f	AWARDI 9	ED EXI	'ENDED h	ESTIMATE AT COMPLETION i	VARIANCES I
14. IN-HOUSE LABOR						
15. MATERIAL					· · · · · · · · · · · · · · · · · · ·	
16. SUBCONTRACT					<u></u>	
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 STA (AMCCOMR 235-5)	ATUS REPORT	AS OF EOM		REQUIREM	ENTS CONTROL SYM	
TO: Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock Island, IL 61299-6000	FROM:				DATE: As o 3/20	
1. PROJECT TITLE						•
P.O. 19506	3. CONTRACT NO	Y COMPLETE		(Calculate Block 4, Ap	YSICALLY COMPLET using accepted earn opendix, AMCCOMF	ed value concepts,
MILESTONES a	INITIAL PLANN b	ED DATE	CURRENT PLA			UAL DATE d
7. FUNDS AVAILABLE						
8. START WORK			Jan. 8	, 1990	Jan. 1	1, 1990
9. 25 PCT PHYSICALLY COMPLETE			Jan. 2	5, 1990	Feb. 1	1990
10. 50 PCT PHYSICALLY COMPLETE			Feb. 2	3, 1990	March	9, 1990
11. 75 PCT PHYSICALLY COMPLETE			March	9, 1990		
12. 90 PCT PHYSICALLY COMPLETE			March	23, 1990	D	
13. 100 PCT PHYSICALLY COMPLETE			March	30, 1990	0	
FINANCIAL CATEGORIES	ORIGINAL BUDGET f	ÀWARĐED S	EXPE		ESTIMATE AT COMPLETION i	VARIANCES I
14. IN-HOUSE LABOR						
15. MATERIAL						
16. SUBCONTRACT						
17. OTHER						
18. TOTAL						

19. REMARKS.

79

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 subcontractor 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.

1.

· · ·		AS OF EOM		REQUIREMEN	TS CONTROL SYM	BOL:	
LAYAWAY/RELOCATION PROJECT (AMCCOMR 235-5)		4/13/90			SMCPB-1005		
fo:	FROM:		<u>.</u>		DATE:		
Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock Island, IL 61299-6000					4/16/	90	
I. PROJECT TITLE							
FY89 Environmental Restora	ation Project, R 3. CONTRACT NO	emove 12 US	ſs	A PCT PHYS	ICALLY COMPLET	•	
2. PROJECT NO				(Calculate usi	ng accepted earn	ed value concep	
5892910-007	CLIN 46AD			Block 4, App	andix, AMCCOMR	(235-5)	
5. PRON	O. PCI FINANCIAL			98	7		
MILESTONES	INITIAL PLANN 5	ED DATE		ANNED DATE	ACTUAL DATE		
7. FUNDS AVAILABLE							
8. START WORK	•		1/8/9	0	1./11/90		
9. 25 PCT PHYSICALLY COMPLETE			1/26/	90 2/1		6/90	
10. 50 PCT PHYSICALLY COMPLETE			2/23/	/90 3/9/90		0	
11. 75 PCT PHYSICALLY COMPLETE		-	3/9/9	0	3/23/	90	
12. 90 PCT PHYSICALLY COMPLETE			3/23/	90	3/30/	90	
13. 100 PCT PHYSICALLY COMPLETE			3/30/	90			
FINANCIAL CATEGORIES	ORIGINAL BUDGET- f	AWARDED 9	EXP	ENDED h	ESTIMATE AT COMPLETION i	VARIANCES	
14. IN-HOUSE LABOR							
15. MATERIAL							
16. SUBCONTRACT					<u></u>		
17. OTHER							
18. TOTAL							

9. 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 4/16/90-4/1×100

-···

		AS OF EOM		REQUIREMENT	S CONTROL SYME	IOL:	
LAYAWAY/RELOCATION PROJECT S (AMCCOMR 235-5)	STATUS REPORT	20 April 90		SMCPB-1005			
f0:	. FROM:				DATE:		
Commander AMCCOM ATTN: AMSMC-PBS-L (R) Rock Island, IL 61299-6000					⁻ 20 Apr	il 90	
1. PROJECT TITLE						•	
FY89 Environmental Restor		Remove 12	USTS			•	
2. PROJECT NO 5892910-007					4. PCT PHYSICALLY COMPLETE (Caiculate using accepted earned value of Block 4, Appendix, AMCCOMR 235-5)		
5. PRON	6. PCT FINANCIALL	Y COMPLETE		100%			
MILESTONES 9	INITIAL PLANN		CURRENT PL	ANNED DATE	ACTU	JAL DATE	
7. FUNDS AVAILABLE							
8. START WORK			1/8/90		1/11/	90	
9. 25 PCT PHYSICALLY COMPLETE			1/26/9	0	2/16/	90	
10. 50 PCT PHYSICALLY COMPLETE			2/23/9	0	3/9/9	0	
11. 75 PCT PHYSICALLY COMPLETE			3/9/90)	3/23/	90	
12. 90 PCT PHYSICALLY COMPLETE			3/23/9	0	3/30/	90	
13. 100 PCT PHYSICALLY COMPLETE			3/30/9	90	4/18/	90	
FINANCIAL CATEGORIES	ORIGINAL BUDGET- f	AWARDED S	EXJ	YENDED h	ESTIMATE AT COMPLETION i	VARIANCES I	
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 Z/110/90 P.O. NUMBER P.O. DESCRIPTION /STS KEMOVAL (CARDAMONE CONST WEATHER CONDITIONS FAIR FERSOWEL ON JOE 2-5 DAVIS MORMED 5 WORK PERFORMED THIS WEEK CARDAMONE REMOVED ALL 12 JETS FROM THE GROUND AND CLEANED ALL HOLE TO ACCEPTABLE (VIA PID SCREENING) ALL 12 USTS WERE CLEANED OF SLOGE & STEAMEr (LEANED. ALL SOL SAMPLES NERE TAKEN - AWAITING RESULTS. THE 3-3900 TANKS THAT WAS A DOJENTIL PROBLEM LAST WK WAS APPARENTLY FERGRAN COMPLETE Star 35% REMARKE CLIERAN (PID) BUT ONLY ACTUAL SOIL SAMPLE RESULT WILL TELL. RAI IS ALLOWING THEM TO LEAVE THE CONKRETE PADS IN' THE HOLE DROVIDLES ALL REULTS COME BACK CLEAN. RAT APPROVE LAKE CO. LANDFILL & IS CORRENTLY INVESTAGATING ERIEWAY SLIDE TREATHENT FACILITY. PROJECT ENGINEER-