

**Ohio Environmental Protection Agency (OEPA)**

**And**

**Ravenna Army Ammunition Plant (RVAAP)**

**1992 Correspondences**



RAVENNA ARSENAL, INC.

8451 STATE ROUTE 5, RAVENNA, OHIO 44266-9297

TELEPHONE: (216) 358-7111 • FAX: (216) 297-3216

January 31, 1992

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

*[Handwritten signature]*  
31 Jan 92

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

Subject: Draft Exemption Order To Allow Hazardous Waste Treatment  
(Ref. AMSMC-ISE Letter 30 March 1990 Subject; Exemption  
Order by Ohio Environmental Protection Agency (EPA) to  
Ravenna AAP For Storage And Thermal Treatment of  
Munitions Derivatives

Dear Sir:

On March 27, 1990 the Ohio EPA sent a draft Exemption Order to Ravenna AAP to allow Open Burning and Open Detonation until the RCRA Part B permit is issued. Ravenna currently has to request project specific emergency permits to conduct Open Burning/Open Detonation. The draft was submitted to your office for review. Your comments were included in a response to Ohio EPA.

The Ohio EPA has now prepared a second draft which addresses the comments received and makes a few other minor changes. Request you review the enclosed draft Exemption Order and provide your concurrence or comments. We want to get this Exemption Order finalized as quickly as possible because the varying time it takes to receive Emergency Permits does not allow proper scheduling of treatment operations.

Point of contact for the Government is Mr. Robert J. Kasper, Commander's Representative at DSN 346-3124 and for the Contractor, Mr. Thomas M. Chanda, Environmental Engineer at DSN 346-3221.

Sincerely,

RAVENNA ARSENAL, INC.

*H.R. Cooper*  
H. R. Cooper  
Plant Engineer

cf: AMSMC-EQ

cf: N. Wulff (2)  
T. Chanda

**File**

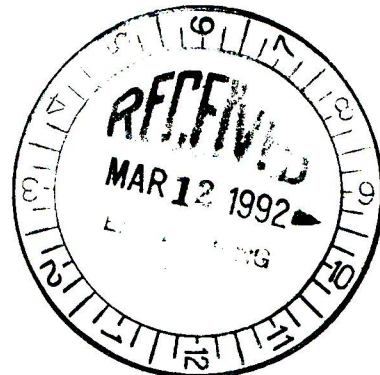
HRC/wt/hc922

*C. Cooper*



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

10 March 1992



Ohio Environmental Protection Agency  
Legal Section  
P.O. Box 1049  
1800 Watermark Drive  
Columbus, OH 43266-0149

Attn: Mr. Mark J. Navarre  
Staff Attorney

Subject: Draft Exemption Order to Allow Hazardous Waste Treatment

Ref: Exemption Order by Ohio Environmental Protection Agency (EPA) to Ravenna AAP for Storage and Thermal Treatment of Munitions Derivatives, AMCCOM letter AMSMC-ISE dated 30 March 1990

Dear Mr. Navarre:

I met with AMCCOM Legal Counsel and discussed the draft presented by you during our meeting 30 January 1992. They took a close look at Para. m on Page 4. It is their opinion that they cannot get this clause through the higher command, the Army Materiel Command, without many months of delay and further revision. They have recommended that we return to their original request which Para. m replaced. As a matter of compromise, they offered to add one additional phrase that has been approved in similar Army agreements. That phrase would be "failure to obtain adequate funds does not in any way release RVAAP/RAI from complying with the terms of this order". In addition, we have included additional comments explaining some minor changes that we request. Please note that a 30-day advanced time requirement between submission of the treatment plan and the actual thermal treatment conflicts with Army safety requirements. The Army regulation requires action within 30 days or a complete retest for stabilizer loss which is expensive and adds risk to the safety of our operating personnel.

Our specific comments are as follows:

Findings No. 5 - The last two sentences "Twelve emergency permits have been issued to RVAAP/Ravenna Arsenal since September 1987" and "The most recent permit was issued on December 13, 1990, effective until January 17, 1991" need to be updated to reflect additional permits and recent dates.

Orders - No. 1 a. Insert "or" before "by open detonation" and delete "or by detonation in the deactivation furnace,". The deactivation furnace is being closed and will not be used.  
b. Same comment as 1 a.

10 March 1992

RAI requests that the required time between submission of the treatment plan and the conduct of thermal treatment be reduced from 30 days to the 14 days which appeared in the original draft Exemption Order. The Army requires that the propellant be destroyed within 30 days or be tested for stabilizer loss.

This requirement is imposed because some propellants lose their stabilizers when they are removed from munitions and become much more sensitive even to the extent of auto-detonating. The Army has lost two magazines in the last five years to auto-detonation.

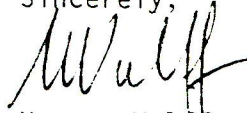
If Ohio EPA can accept the 14 day notification period the stabilizer test would not be required, saving the U.S. Government (Army) unnecessary expense. A long enough time is required between the expiration of the required notice time and the expiration of the 30 days to allow for days on which treatment cannot be conducted due to weather conditions.

1.b. - RAI requests that provisions be made to allow minor changes to the treatment plan (e.g. extend dates, up to 10% increase in quantity) with a shorter notice period.

The plant prefers to treat the waste as it is generated rather than putting it in storage. This reduces cost and reduces the amount of transportation and handling of hazardous waste. In some cases quantities will have to be estimated in order to provide the advance notice. If more waste is generated on a project than expected, the treatment would have to be stopped until a revised treatment plan is submitted and the required notice period had expired. Likewise if the operations which generate the waste are delayed or interrupted the plan may have to be modified to extend the dates of treatment.

1.b. RAI requests that provision be made for treatment of items which pose a significant hazard on an emergency basis. Preferably the installation would telephone the designated office and describe the situation. If the Ohio EPA representative concurred, the item would be destroyed that day and a completion report would be submitted in accordance with sub paragraph 1. The completion report would reference the verbal approval received prior to the treatment.

Sincerely,



Norman Wulff,  
Vice President & General Manager

:sh



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

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12 June 1992

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-GCS-R (Mr. John Rock)  
Rock Island, IL 61299-6000

Subject: Final Draft Exemption Order To Allow Hazardous Waste  
Treatment At Ravenna Army Ammunition Plant (RVAAP); Ref.  
31 Jan. 1992 Olin Ordnance Letter to AMSMC-GCS-R,  
Subject: Draft Exemption Order to Allow Hazardous Waste  
Treatment.

Dear Mr. Rock,

Attached is the subject's final draft for your review. It's anticipated that the Ohio EPA Director will formally sign the attached Exemption Order within the next three to four weeks.

This installation would like to receive your review comments no later 29 June 1992.

Negotiations with OEPA since the 31 Jan. 1992 draft comments have resulted in accomplishing the language which your office required. With those revisions incorporated into this final draft, it should set the way for the necessary approvals by your office.

Ravenna is currently faced with a 45 day window to complete treatment upon hazardous waste that's in its 90 day storage facility. Through your review, if it appears approval still cannot be accomplished, please notify Ravenna immediately.

This installation's points of contact are for the Government: Mr. Robert J. Kasper, Commander's Representative, at phone DSN 346-3124; and for Ravenna Arsenal, Inc.: Thomas M. Chanda, Environmental Engineer, at DSN 346-3221.



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



REPLY TO  
ATTENTION OF

26 JUN 1992

RECEIVED

JUN 30 1992

N. WULFF

Office of Counsel

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

TO: Mr. H. R. Cooper  
Engineering Manager  
Ravenna Arsenal, Inc.  
8451 State Route 5  
Ravenna, Ohio 44266-9297

TO	6/30/92
1	CO-COR
	CONT ADM
	PROP ADM
	QASAS
	SECURITY
	MAIL
	RETURN FOR FILE

General Manager  
Ravenna Arsenal, Inc.  
FWD FOR

Information

Compliance *et*  
applicable

Reply NLT

Dear Sir:

Re: OB/OD Draft Exemption Order

Per your request a review of the subject Order has been accomplished by AMSMC-EQ (Captain Metcalf) and this office (Mr. Rock). While it is recognized that the subject Order is not precisely what we had hoped for, the State of Ohio has compromised to some extent and it appears that this draft is as good as it is possible to obtain. Accordingly, this office and AMSMC-EQ recommend you take action to conclude the execution of the Order.

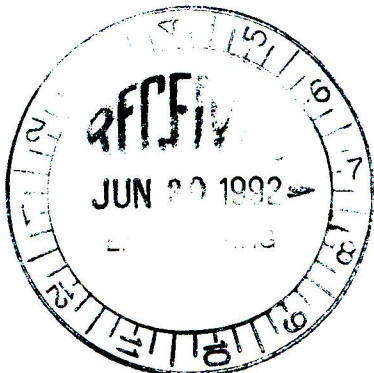
Any questions may be directed to Mr. John Rock, Area Code (309)782-8440 or DSN 793-8440.

Sincerely,

*Sharon A. Lipes*

Sharon A. Lipes  
Acting Chief, General Law/  
Congressional Affairs Division

Copies furnished:  
AMSMC-EQ  
AMSMC-PC  
AMSMC-DP



TO	OFFICE	ACTION
<input checked="" type="checkbox"/>	GM	
<input type="checkbox"/>	CO-COR	
<input type="checkbox"/>	ACCTG	
<input type="checkbox"/>	SEC	
<input checked="" type="checkbox"/>	ENGR	
<input type="checkbox"/>	IR	
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<input type="checkbox"/>	P & CA	
<input type="checkbox"/>	SAF	
<input type="checkbox"/>	DPM	
<input type="checkbox"/>	RETURN	

*T. Chanda*  
*J. L.*



Doc. Con. file

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

January 16, 1992

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

TO: Director  
Environmental Protection Agency  
PO Box 1049  
1800 Watermark Drive  
Columbus, Ohio 43266-0149

Subject: Request for Extension of Time to Complete Closure

Dear Sir:


On November 2, 1990 the Ohio EPA approved a RCRA Closure Plan for the closure of the Deactivation Furnace at Ravenna Army Ammunition Plant in Ravenna, Ohio. On October 23, 1991, Ohio EPA approved an extension request extending the closure period to January 28, 1992. This letter is to request an additional 180 days extension to complete closure of this unit. The additional time is needed because of difficulty in determining the extent of soil contamination associated with the furnace.

RVAAP and Ravenna Arsenal, Inc. have taken and will continue to take all steps to prevent threats to human health and the environment from the Deactivation Furnace, including compliance with applicable interim status requirements until completion of closure.

Should you have any questions or require additional information, the RAI point of contact for this subject is Susan McCauslin (216) 297-3220; the Government point of contact is Robert J. Kasper, (216) 297-3124.

Sincerely,

RAVENNA ARSENAL, INC.

  
H.R. Cooper  
Plant Engineer

SMC/ade/92002

cc: N. Wulff  
T. Chanda  
File

cf: Paul Vandermeer, Ohio EPA Columbus  
Ahmed Hawari, Ohio EPA NEDO

REQUEST FOR PURCHASE ORDER CORRECTION

Date 3-3-92

Purchase Order No. 21879

To: PURCHASING DIVISION

Account No. \_\_\_\_\_

Please change Purchase Order dated 3-6-91

M.O. No. 196-2642

on YWC Midwest (Company)

Original Estimated Cost 57,469.00

In the following respect:

Revised Estimated Cost 89,639.00

ITEM: 00-Add Charges for:

Sampling 11 grids (@ unit cost \$75.00 per grid) = \$1,980.00

Analysis of 11 samples (@ unit cost \$180.00 per sample) = \$825.00

TOTAL: \$2,805.00

Reason for Change:

Required for closure in accordance with plan.

Approvals: (must be the same as on original requisition.)

[Signature]

[Signature] Dept.

\_\_\_\_\_ Dept.

Purchasing Division  
Contract Officer's Represent

Ravenna Arsenal, Inc.

Signed

S. McCauslin  
Department Requesting Correction

[Signature]



PURCHASE ORDER CHANGE

RAVENNA ARSENAL, INC.  
Ravenna, Ohio 44266  
(216) 358-7111  
Contract No. DAAA09-88-Z-0001

Page 1 of 1

00253X

Date 03/04/92

SB

YWC MIDWEST, INC.

P. O. No. 21879 Chg#003

6490 PROMLER AVE, NW  
NORTH CANTON, OH 44720

ACCT. No. See Detail

Please amend our Purchase Order No. 21879, Dated 03/06/91, as follows:

Add Item #005

1.000 LT COLLECTION & SAMPLE @ 2805.0000 = 2805.00  
SAMPLING 11 GRIDS (@ UNIT  
COST \$75.00 PER GRID.)  
=\$1980.00


Acct# 3065 Analysis of 11 samples (@ unit cost  
\$180.00 per sample) = \$825.00  
YWC SUBMITTAL 3-2-92 page 2 & 3  
ITEM 1: 6 only  
ITEM 2 & 3:  
ITEM 4: DON'T DO  
PRICING PER SECTION 5 - PAGE 3.

\*ENGR/BJJ/jh

Total Revised Cost: \$89,639.00

This order, except as herein amended, shall in all other respects remain as before, unless completely cancelled.

RAVENNA ARSENAL, INC.

By   
Contract, Procurement &  
Purchasing

Approved By \_\_\_\_\_  
For Contracting Officer



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.  
Columbus, Ohio 43266-0149  
(614) 644-3020  
FAX (614) 644-2329

*T. Chanda*  
*File*

RECEIVED

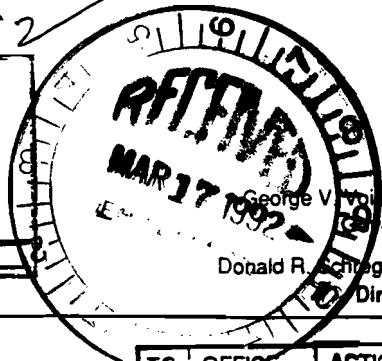
MAR 13 1992

N. WULFF

3/10/92

General Manager  
Ravenna Arsenal, Inc.  
FWD FOR

Information  
 Compliance & applicable  
 Reply NLT



George V. Volovich  
Governor  
Donald R. Schlegel  
Director

CERTIFIED MAIL

March 6, 1992

RE: CLOSURE PLAN EXTENSION  
Ravenna Arsenal, Inc.  
OH5 210 020 736

Mr. H.R. Cooper  
Ravenna Army Ammunition Plant  
8451 State Route 5  
Ravenna, Ohio 44266-9297

TO	OFFICE	ACTION
	GM	
	CO-COR	
	ACCTG	
	SEC	
	ENGR	
	IR	
	IS & T	
	P & C	
	SAF	
	TRM	
	RETURN	

Dear Mr. Cooper:

On January 16, 1992, Ravenna Arsenal, Inc. submitted a request for an additional extension to the closure period specified in the approved closure plan dated November 1, 1990, for 180 days. The extension request was submitted pursuant to OAC Rule 3745-66-13(B) as closure will require longer than the 180 day period specified in OAC Rule 3745-66-13. Ravenna Arsenal, Inc., has requested this extension because of difficulty in determining the extent of soil contamination associated with the furnace.

My staff reviewed your request and recommends that the extension be granted for 180 days. I concur and am therefore granting this extension request. To maintain the integrity of the schedule of events listed in the approved closure plan, 180 days will be added to the closure completion date. Therefore, all closure activities shall be completed by July 26, 1992.

Ravenna Arsenal, Inc. shall continue to take all steps to prevent a threat to human health and the environment from the unclosed but inactive waste management unit per OAC Rule 3745-66-13(B) (2).

Please be advised that approval of this closure extension request does not release Ravenna Arsenal, Inc. from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

I hereby certify this to be a true and accurate copy of the original document as filed in the records of the Ohio Environmental Protection Agency.

By: Alki Mackey Date: 3/6/92


Mr. Cooper  
Ravenna Army Ammunition Plant  
Page Two

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and an independent professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. These Certifications shall follow the format specified in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Hazardous Waste Management, Attn: Tom Crepeau, Data Management Section, P.O. Box 1049, Columbus, Ohio 43226-1049.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days from the receipt of this letter. A copy of the appeal must be served to the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Board. An appeal must be filed at the following address:

Environmental Board of Review  
236 East Town Street  
Room 300  
Columbus, Ohio 43215

Sincerely,

  
Donald R. Schregardus  
Director

DRS/PV/pas

cc: Tom Crepeau, DHWM Central File, Ohio EPA  
Lisa Pierard, USEPA - Region V  
Joel Morbito, USEPA - Region V  
Paul Vandermeer, DHWM, Ohio EPA  
Ahmed Hawari, NEDO, Ohio EPA

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Ashli Mackey Date 3/6/92

2005  
3/6/92  
DIRECTOR'S OFFICE

**AIR MOTOR & GEAR REDUCER**

Description \_\_\_\_\_

**No 58174**

TAG NO. **RAI 510**  
**RAI 295**

Condition: Good \_\_\_\_\_ Fair \_\_\_\_\_ Poor \_\_\_\_\_ Bad \_\_\_\_\_

Disposition: Hold for Dept. \_\_\_\_\_ Excess \_\_\_\_\_ Salvage \_\_\_\_\_ Scrap \_\_\_\_\_

Date **18 Mar 1992** Transferred from Dept. \_\_\_\_\_ Bldg. **S-3401** Bay \_\_\_\_\_

Transfer Authorized by:  
**S. McCauslin** *S.M. McCauslin*

Transfer to Dept. \_\_\_\_\_ Bldg. **1035** Bay \_\_\_\_\_

Equipment Received by:  
**J. McGee** *J.D. McGee*

**SCRAP OR SALVAGE CERTIFICATION:**

This equipment, due to fair wear and tear, is beyond economical repair.

Engr. Dept. \_\_\_\_\_

Accountable Property Officer \_\_\_\_\_

**DECONTAMINATION CERTIFICATION: (If exposed)**

This equipment has been decontaminated in accordance with existing regulations.

Signed \_\_\_\_\_

Title \_\_\_\_\_

Remarks: \_\_\_\_\_

EA 119 Rev.

**EQUIPMENT TRANSFER ORDER**

Department Releasing Equipment



YWC, Inc.  
6490 Promier Avenue, N.W.  
North Canton, OH 44720  
(216) 499-8181  
FAX (216) 499-4044

March 27, 1992

Mr. Bill Jenkins  
Ravenna Arsenal, Inc.  
State Route 5  
Ravenna, OH

YWC REF: #91-115

Dear Mr. Jenkins:

Enclosed is an interim report summarizing the results of soil sampling and analysis conducted for closure of the deactivation furnace.

The report provides a discussion of the work performed, sampling conducted, results, and recommendations.

YWC Technologies is pleased to present this report to you, and we look forward to working with you to complete this closure in a timely manner.

Sincerely,

Simon P. Wakin  
General Manager

cc: Susan McCauslin

## YWC TECHNOLOGIES REPORT

REPORT TO: Mr. Bill Jenkins  
Ms. Susan McCauslin  
Ravenna Arsenal, Inc.

REPORT DATE: March 27, 1992

SUBJECT: DEACTIVATION FURNACE CLOSURE

### SECTION 1.0: INTRODUCTION

On March 11, 1992, YWC collected and submitted for analysis 11 soil samples from selected points around the footprint of the deactivation furnace. Sample results received March 25, 1992 indicate that none of the 11 grids were clean based upon the background target levels.

### SECTION 2.0: WORK PERFORMED

Samples were collected and analyzed from three general locations to define the extent of contamination. On March 11, 1992, YWC collected samples from the 0-1' BGL interval at six grids in the 12th grid perimeters, at one point south of the building, and from the 4-5' BGL interval at four grids in the 6th perimeter. A map plotting the sampling locations is attached.

### SECTION 3.0: FINDINGS

The data will be analyzed based upon the sampling groups defined above. The results are given in an attachment.

3.1 The sample taken south of the control-room building is the second round of sampling in that direction. Although it was hoped that no contamination existed in this area, the results of round one indicated otherwise. The current sample, taken three grids south of the road, was cleaner than earlier samples. Sample S4-A had only two parameters over the clean level and both excursions were minor (ie, 0.65 and 6.89 ppm).

3.2 The sixth perimeter samples taken at 4-5' BGL showed mixed results. Of the four grids sampled, one grid (146) is better than the 2-3' interval while the other three grids are exhibiting similar results.

3.3 The results from the 12th perimeter grids indicate all were contaminated above the clean level. However, there are some signs of hope. All samples were clean for five of the nine metal parameters tested at the lowest levels to date. Of the four parameters exhibiting contamination, one (lead) was only present in one sample. Once again, Copper and Zinc have the largest excursions.

#### SECTION 4.0: CONCLUSION AND RECOMMENDATIONS

The south sample (S-4A) appears to be at or near the horizon to the south. Other issues are involved in this area and the contamination present may not be a concern.

The 6th grid perimeter samples at the 4-5' BGL interval have not definitively identified the vertical extent of contamination. Although the deepest samples to date outside the incinerator footprint, contamination is known to exist at deeper intervals within the footprint.

The 12th grid perimeter samples, although not clean, exhibit lower levels of contamination than the 8th and 10th perimeter grids. Also, these grids are within 14' of the background sampling locations.

YWC proposes no further action to the south because, due to the building and roadway, a case may be made to negotiate a settlement rather than remove contaminated soils. Archived samples from the 12th grid perimeter at 2-3' BGL can immediately be analyzed. Moving an additional two grids outward (ie, 14th perimeter) would place the next samples at the background locations. It may be prudent at this point to discuss the results and future actions with the agency (on or off the record if possible). This would alleviate further cost and suggest a course of action.

PARAMETER	135C	140C	146C	154C	161C	166C	MEAN+2STD
ANTIMONY	< 56.10	< 57.80	< 59.50	< 59.10	< 62.30	< 57.90	2.21
ARSENIC	6.60	<del>16.40</del>	<del>16.90</del>	<del>17.70</del>	14.30	<del>25.10</del>	14.72
BERYLLIUM	< 5.60	< 5.80	< 6.00	< 5.90	< 6.20	< 5.80	5.00
CADMIUM	< 2.80	< 2.90	5.20	3.00	< 3.10	< 2.90	5.00
CHROMIUM	22.00	<del>60.70</del>	<del>41.30</del>	<del>61.20</del>	< 12.50	25.20	39.11
COPPER	14.60	26.20	<del>1200.00</del>	<del>30.10</del>	22.20	27.00	27.35
LEAD	< 11.20	< 11.60	<del>260.00</del>	13.10	< 12.50	< 11.60	28.07
NICKEL	7.10	39.70	16.50	34.00	15.70	20.60	41.30
ZINC	43.80	80.20	<del>2400.00</del>	<del>95.90</del>	70.60	<del>92.50</del>	84.35

2-3'

PARAMETER	135E	140E	146E	154E	161E	166E	MEAN+2STD
ANTIMONY		< 0.6	2.60	< 0.7		< 0.6	2.21
ARSENIC		<del>21.00</del>	<del>19.00</del>	<del>23.00</del>		<del>24.00</del>	14.72
BERYLLIUM		< 6.0	< 6.1	< 6.5		< 6.1	5.00
CADMIUM		< 0.74	5.10	0.81		< 0.76	5.00
CHROMIUM		29.10	37.00	<del>70.00</del>		35.00	39.11
COPPER		26.60	<del>1011.00</del>	<del>37.00</del>		<del>30.00</del>	27.35
LEAD		< 11.9	<del>335.00</del>	18.00		15.00	28.07
NICKEL		16.00	15.00	27.00		24.00	41.30
ZINC		<del>89.30</del>	<del>1560.00</del>	<del>115.00</del>		<del>107.00</del>	84.35

4.5'



GRID SAMPLES: IN MG/KG

PARAMETER	11-10	11-12	8-1A	8-2A	8-4A	MEAN+2STD
ANTIMONY	< 52.90	< 54.30	< 57.60	< 60.80	< 0.6	2.21
ARSENIC	8.20	10.10	9.60	<del>21.30</del>	1.40	14.72
BERYLLIUM	< 5.30	< 5.40	< 5.80	< 6.10	< 6.2	5.00
CADMIUM	< 2.60	< 2.70	< 2.90	4.60	< 0.77	5.00
CHROMIUM	22.30	23.10	<u>51.50</u>	<del>62.30</del>	<del>46.00</del>	39.11
COPPER	400.00	23.20	<u>243.00</u>	<del>321.00</del>	26.00	27.35
LEAD	< 10.60	< 10.90	<u>77.00</u>	<del>168.00</del>	< 12	28.07
NICKEL	12.10	9.20	11.90	31.20	16.00	41.30
ZINC	60.60	58.60	<u>425.00</u>	<del>677.00</del>	<del>85.00</del>	84.35

GRID SAMPLES: IN MG/KG

PARAMETER	417A	426A	439A	449A	464A	472A	MEAN+2STD
ANTIMONY	0.90	< 0.7	1.80	< 0.6	< 0.6	< 0.6	2.21
ARSENIC	0.91	1.50	1.30	1.80	1.50	1.20	14.72
BERYLLIUM	< 6.2	< 6.5	< 6.1	< 6.1	< 6.2	< 6.2	5.00
CADMIUM	< 0.77	< 0.82	< 0.76	< 0.77	< 0.77	< 2.5	5.00
CHROMIUM	34.00	<del>93.00</del>	<del>48.00</del>	<del>59.00</del>	<del>68.00</del>	<del>40.00</del>	39.11
COPPER	<del>353.00</del>	<del>31.00</del>	<del>108.00</del>	<del>35.00</del>	<del>31.00</del>	23.00	27.35
LEAD	<del>115.00</del>	22.00	<del>34.00</del>	22.00	< 12.3	20.00	28.07
NICKEL	< 6.2	15.00	19.00	21.00	22.00	7.50	41.30
ZINC	<del>934.00</del>	<del>138.00</del>	<del>255.00</del>	<del>122.00</del>	<del>91.00</del>	<del>136.00</del>	84.35

May 27, 1992

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

SUBJECT: RCRA Closure of Ravenna AAP's Deactivation Furnace;  
Ref. RVAAP/SMCRV-CA (200-1a) 21 May 1992 Ltr., SAB

Dear Sir,

With regards to the questions that were presented within your subject letter the following response is provided:

RVAAP QUESTION: "Have you considered challenging EPA's stipulation that residential standards apply at an industrial facility?"

RAI RESPONSE: Yes. In January 1992, a telephone discussion took place upon the subject between Ms. Sue McCauslin, RAI Environmental Engineer, Ms. Bonnie Scully, USAEHA Health Risk Assessment Specialist, and Ms. Sandra Leibfritz, Ohio EPA Environmental Specialist (Risk Assessment). In that discussion Ohio EPA specified that their policy guidelines for RCRA closures stipulate residential standards; regardless of the facility's present or future setting. Based upon this OHEPA policy, a USAEHA evaluation study identifies little recourse on closure options for RVAAP. The USAEHA findings report should arrive at this facility NLT 3 June 1992.

RVAAP QUESTION: "Is there a significant difference in scope and cost to bring this area into residential standards as opposed to nonresidential standards?"

RAI RESPONSE: Yes. Residential standards will require extensive soil removal. The alternatives that were proposed in the 5 May 1992 interim report prepared by the YWC subcontractor clearly identify less scope and expense. Those alternatives are what's going to be negotiated in lieu of total soil removal during the planned Ohio EPA - RVAAP meeting in June. If Ohio EPA were to allow an option of a Health Risk Assessment to be conducted under non-residential standards, costs could potentially be less than the proposed alternatives mentioned in the interim report.

(RVAAP DEAC RCRA Closure)

-2-

RAI's lead point of contact for further technical discussion should be directed at Ms. Susan McCauslin, Environmental Engineer at plant phone 3220 or DSN 346-3220.

Sincerely,

RAVENNA ARSENAL, INC.



H.R. Cooper  
Engineering Manager

TMC

cc: N. Wulff  
S. McCauslin  
File

21 May 1992

*JAC*  
*21 MAY 92*

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 - EQE (Mr. Bill Coogan)  
Rock Island, IL 61299-6000

Subject: RCRA Closure of Ravenna AAP's Deactivation Furnace;  
Interim Report Dated 5 May 1992.

Dear Sir,

The attached reflects current status of subject closure. It's been determined that the area of heavy metal contamination has significantly expanded from the original closure plan prospectus. The original area of impact was estimated at 50' x 30' x 6'; analytical data currently estimates the affected area as 200' x 200' x 6'. The regulator has already stipulated that residential standards shall apply to specified closure policy guidelines.

With the increased vertical and horizontal area of contamination the following will need to occur:

1. Negotiate feasible closure alternatives with Ohio EPA other than total soil removal and disposal to meet residential standard criteria.
2. Increased closure costs. It's anticipated projected cost increases can be as high as \$600,000; exclusive of plant overhead. Initiate request for funds to accomplish final closure.
3. Revise the existing Closure Plan to accomodate expanded surface area and depth; include negotiated closure alternative if available.
4. Submit to Ohio regulator a formal extension request for an additional 180 days to fulfill closure requirements.

(RVAAP DEAC Furnace Closure)

-2-

Ravenna will defer setting a meeting date with Ohio EPA until 1 June 1992 in order for AMSMC-EQ to decide upon their attendance. This meeting will be to discuss alternative closure strategies identified within the attached interim report.

Please make notice to the below mentioned Government POC of your decision to attend the proposed RVAAP/EPA meeting.

This installation's points of contact are for the Government: Mr. Robert J. Kasper, Commander's Representative, at DSN 346-3124; and for Ravenna Arsenal, Inc.: Thomas M. Chanda, Environmental Engineer, at DSN 346-3221.

Sincerely,

RAVENNA ARSENAL, INC.



H.R. Cooper  
Engineering Manager

attachment

cf: AMCCOM  
AMSMC-PCG (Ms. Shirlene Wise)

cc: N. Wulff w/o attachment  
T. Chanda w/o attachment  
File



DEPARTMENT OF THE ARMY  
RAVENNA ARMY AMMUNITION PLANT  
8451 STATE ROUTE 5  
RAVENNA, OHIO 44266-9297

May 21, 1992

*Sue/Tom  
File*



REPLY TO  
ATTENTION OF  
SMCRV-CA (200-1a)

Subject: RCRA Closure of Ravenna AAP's Deactivation Furnace

TO	OFFICE	ACTION
<input checked="" type="checkbox"/>	GM	
<input type="checkbox"/>	CO-COR	
<input type="checkbox"/>	ACCTG	
<input type="checkbox"/>	SEC	
<input checked="" type="checkbox"/>	ENGR	X
<input type="checkbox"/>	IR	
<input type="checkbox"/>	S & T & C	
<input type="checkbox"/>	P & CA	
<input type="checkbox"/>	SAF	
<input type="checkbox"/>	DPM	
<input type="checkbox"/>	RETURN	

RECEIVED  
MAY 22 1992  
N. WULFF

General Manager  
Ravenna Arsenal, Inc.  
8451 State Route 5  
Ravenna, Ohio 44266-9297

Dear Mr. Wulff:

Reference RAI letter, May 21, 1992, Subject: RCRA Closure of Ravenna AAP's Deactivation Furnace; Interim Report dated 5 May 1992, copy enclosed w/o enclosure.

Have you considered challenging EPA's stipulation that residential standards apply at an industrial facility? —> *Bonny Scully, USAEHA  
Sandra Reichert - OHEP, Jan 1992*

Is there a significant difference in scope and cost to bring this area into residential standards as opposed to nonresidential standards?

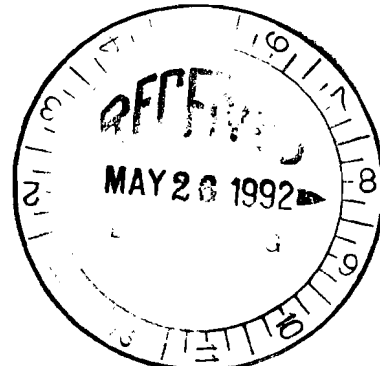
Please provide the information requested above to this office by May 28, 1992.

Point of contact is Mr. John Cicero, extension 3127.

Sincerely,

John A. Cicero, Jr.  
Contracting Officer's Representative

Copies Furnished:  
AMSMC-PCG-B (Ms. Wise)





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

---

---

July 13, 1992

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

TO: Director  
Environmental Protection Agency  
P.O. Box 1049  
1800 Watermark Drive  
Columbus, Ohio 43266-0149

Subject: Request for Extension of Time to Complete Closure

Dear Sir:

On November 2, 1990 the Ohio EPA approved a RCRA Closure Plan for the closure of the Deactivation Furnace at Ravenna Army Ammunition Plant in Ravenna, Ohio. On March 6, 1992, Ohio EPA approved an extension request extending the closure period to July 26, 1992. This letter is to request an additional 180 days extension to the closure period. The additional time is needed because of the larger than expected area of contamination found during closure activities. More time is needed to prepare an amended closure plan for Agency review, and once approved, to secure additional funding from the Army to complete the closure of this unit as set forth in the approved amended plan.

RVAAP and Ravenna Arsenal, Inc. have taken and will continue to take all steps to prevent threats to human health and the environment from the Deactivation Furnace, including compliance with applicable interim status requirements until completion of closure.



Should you have any questions or require additional information, the RAI point of contact for this subject is Susan McCauslin at (216) 297-3220; the Government point of contact is Robert J. Kasper, at (216) 297-3124.

Sincerely,

RAVENNA ARSENAL, INC.



H.R. Cooper  
Engineering Manager

SMC/cltr

cc: N. Wulff  
T. Chanda  
File

cf: Paul Vandermeer, OEPA Columbus  
Ahmed Hawari, OEPA NEDO  
Carolyn Reiersen, OEPA NEDO

INTEROFFICE MEMORANDUM

JULY 30, 1992

TO: DISTRIBUTION

FROM: SUSAN McCAUSLIN, ENGINEERING

*SMc*

SUBJECT: MEETING WITH OEPA REGARDING DEAC. FURNACE CLOSURE

A meeting has been scheduled with Ohio EPA regarding the status of the Deactivation Furnace closure. The meeting will take place on August 11, 1992 at the Twinsburg office of Ohio EPA.

Tom Runyon and Bonny Scully from AEHA, Rich McNulty from AMCCOM, and Simon Wakin from YWC will be attending this meeting along with myself and Tom Chanda. Our tentative agenda for this meeting is to show them what we have done and found so far in this closure, and then to propose a modification to the present closure plan to accomplish clean closure without extensive soil removal.

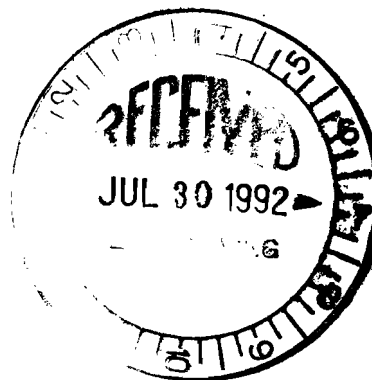
DISTRIBUTION:

Cooper  
Wulff  
CCR

*Sue,*

*What is the proposal going to be*

*H. Ford*



AMSMC-EQE (1-201a)

MEMORANDUM FOR RECORD

SUBJECT: Trip Report on Meeting with the Ohio Environmental Protection Agency (OEPA) and Ravenna Army Ammunition Plant (RVAAP), Twinsburg, Ohio, 10-11 August 1992, T.O. 92K0163, Dated 6 August 1992.

1. PURPOSE OF VISIT: To brief the RVAAP interim ~~deactivation~~ ~~furnace closure report~~ to the OEPA and; ascertain OEPA's site specific closure requirements based on the Army data reported therein.

2. SYNOPSIS OF ESSENTIAL INFORMATION:

a. Personnel Contacted: See Enclosure 1.


b. Key Issues/Accomplishments:

(1) The RVAAP deactivation furnace was constructed in 1968<sup>8</sup> from a Navy design and operated intermittently through the end of the Vietnam War. The furnace was used for several months under interim RCRA status and is subject to RCRA interim status closure requirements. The initial closure plan anticipated only a clean closure within the confines of the furnace barrier walls. High levels of surface ground contamination found in this area and the OEPA requirement to remediate to background subsequently required a redefinition of the site external to the barrier walls. The Interim Closure Report addresses a potential 100 foot radial expansion of site external to the barrier walls through confirmation grid sampling assuming that the 100 foot interval represents background conditions.

(2) Mr. Wakin of YWC Technologies briefed the Interim Closure Report for the Army. Over the course of the data presentation, several deficiencies in the Army's protocol became apparent and are summarized below:

(a) Data is reported for constituents not subject to RCRA corrective action because they are not RCRA hazardous constituents (i.e., zinc).

(b) Background data (i.e., target level) was collected only on a 0-1 foot composite but was subsequently applied to sampling depths ranging to 5 feet for corrective action determinations. Certain parameters such as antimony

Mr.   
Deact Furnace  
Closure PAs

COMPANY CONFIDENTIAL

Company Confidential - not  
an official release

demonstrated a strong inverse concentration gradient (greater concentrations at depth) which if naturally occurring, would falsely implicate a remediation requirement.

(c) Obvious hotspots were identified which do not correspond to any expected or logical contaminate distribution pattern associated with the furnace. Further discussion indicated that the furnace was built amid an original 120 surface burn pads on the old RVAAP burning ground. The distribution of the pads relative to the furnace is not known. However, data from the hotspots is consistent with observed surface contamination at other AMOCOM burn pad sites and strong suggests that the hotspots may correspond to an old CERCLA pad area.

(d) The Army Environmental Hygiene Agency (AEHA) attempted to conduct a worse case health risk assessment for the site in its entirety ignoring the probability of source reduction through removal.

(3) After considerable discussion among the participants, the OEPA suggested the following course of action:

(a) The OEPA believes that RVAAP closure efforts are advancing in good faith and consequently OEPA is receptive to grant sufficient 180 day closure extensions to facilitate a good closure.

(b) The OEPA suggests a nominal expansion of the sampling protocol to fill in pronounced data gaps at the study margins. OEPA also suggested that non-hazardous parameters be dropped from the closure (i.e., zinc).

(c) The OEPA suggests a nominal expansion of sampling to better delineate the lateral extent of the several hot spots.

(d) The OEPA can not waive the clean closure requirements but will allow compartmentization of the site for purposes of redefining the site. Thus, Army will be allowed discrete mini-closures of hotspots through either clean closures or health risk assessments.

→ (e) The OEPA suggested that the Army sequentially approach closure by proceeding initially with source removal at

know hot spots then submitting analytical sampling results for clean closure or a health risk assessment in the alternative.

(f) The OEPA also noted that a health risk assessment based closure must include the groundwater pathway unless TCLP data demonstrates a zero leaching potential.

(4) Following the meeting, the AEHA representatives indicated to the AMCCOM representatives their desire to continue their health risk assessment support to RVAAP. The AEHA will attempt to back-calculate a minimum remediation standard necessary to satisfy the health risk assessment criteria.

4. REQUIRED FOLLOW-UP/MILESTONES:

a. RVAPP will request 180 day closure extension(s) from OEPA.

b. AEHA will back calculate no action levels for health risk assessment(s) and supply results to AEHA.

c. RVAPP will expand sampling protocol to verify no action (background equivalent) site compartments, and; to delineate contaminate hot spots requiring remediation.

d. RVAAP will collect background data to depth.

e. RVAAP will request funding for phase 1 remediation of hotspots and initiate remediation as required.

f. RVAAP will develop a Phase 2 closure plan incorporating the results of the Phase 1 remediation, additional clean confirmation and background sampling.

5. SAFETY, ENERGY, and SECURITY: None.

Richard R. McNulty  
Environmental Engineer

HAZARDOUS

# UNITED STATES ARMY ENVIRONMENTAL HYGIENE AGENCY

ABERDEEN PROVING GROUND, MILITARY RESERVE ROAD, ABERDEEN, MISSISSIPPI 39007

## WASTE DISPOSAL ENGINEERING DIVISION HEALTH RISK ASSESSMENT BRANCH



<p>1410 671 2353          DSN 97 2144          FAX          1410 671 0237</p>	<p>1410 671 2353          DSN 97 2144          FAX          1410 671 0237</p>	<p>1410 671 2353          DSN 97 2144          FAX          1410 671 0237</p>	<p>1410 671 2353          DSN 97 2144          FAX          1410 671 0237</p>
<p>UNCLASS</p>			

UNITED STATES GOVERNMENT PRINTING OFFICE: 1987 O-481-100

RGPT PRELIMINARY REMEDIATION GOALS--RAVENNA AAP DECONTINATION PROGRAM

Material	Background Concentration	Maximum Concentration Detected	Site-Specific Cleanup Level	Remedial Goal
PCB	0.005	20.4	1.0	1.0
PCB	14.0	49.0	1.0	1.0
PCB	0.005	9.0	1.0	1.0
PCB	0.005	1,615	1.0	1.0
PCB	0.005	1.0	1.0	1.0
PCB	0.005	14,000	1.0	1.0
PCB	0.005	1,200	1.0	1.0
PCB	0.005	107.0	1.0	1.0
PCB	0.005	15,000	1.0	1.0

RA-61

YWC Midwest  
6490 Fromler Ave., N.W.  
North Canton, OH 44720

Attn: Simon Wakin, General Manager

Subject: Ravenna Army Ammunition Plant Deactivation Furnace  
Closure

Dear Mr. Wakin:

In accordance with the 8/11/92 recommendations of Ohio EPA, Ravenna Arsenal, Inc. requests from YWC a cost estimate for the preparation and implementation of a sampling plan to further characterize contamination at the RVAAP Deactivation Furnace closure site.

The sampling plan should include the location, depth, and analytical parameters for additional sample points in order to: 1) characterize areas not previously covered (i.e. the NW and NE corners of the gridded area); and 2) define the areal extent of contamination found at "hot spot" areas (i.e. the possible roadway NW of the furnace). The plan will be submitted as written to Ohio EPA for approval prior to implementation.

If you need further information regarding preparation of the sampling plan, contact Susan McCauslin at (216) 297-3220. Questions regarding contract matters should be directed to Bill Jenkins at (216) 297-3107.

Sincerely,

**B.J. JENKINS**  
**AUG 14 1992**



RAVENNA ARSENAL, INC.  
REQUEST FOR QUOTATION  
(INTER-DEPARTMENT)

NUMBER OF REQUEST \_\_\_\_\_

DATE Aug. 14, 1992

PROJECT Physical Closure, Deactivation Furnace

MECHANICAL ORDER NUMBER 196-2642, P.O. 21879

QUANTITY \_\_\_\_\_

DESCRIPTION See attached letter.

DELIVERY REQUESTED ASAP

QUOTATION REQUEST DATE \_\_\_\_\_

TOOLING QUOTATION SEPARATE YES \_\_\_ NO \_\_\_

MONTHLY STATUS REPORT YES \_\_\_ NO \_\_\_

MAINTENANCE DATA YES \_\_\_ NO \_\_\_

INSTALLATION REQUIRED YES \_\_\_ NO \_\_\_

DRAWINGS ATTACHED YES \_\_\_ NO \_\_\_

IF YES LIST DRAWING NUMBERS \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

SUGGESTED VENDORS

YWC Midwest, Simon Wakin

\_\_\_\_\_

\_\_\_\_\_

REQUESTED BY S. McCauslin *S McCauslin*

DEPARTMENT Env. Engineering

DATE QUOTATION RECEIVED \_\_\_\_\_

EXT. \_\_\_\_\_

August 28, 1992

Mr. Bill Jenkins  
Ravenna Arsenal, Inc.  
8451 State Route 5  
Ravenna, Ohio 44266

YWC Ref: 92-111

**SECTION 1.0 INTRODUCTION**

Based on recommendations of the Ohio EPA developed in the meeting between OEPA and Ravenna Arsenal, YWC Technologies has developed the following sampling plan.

**SECTION 2.0 WORK PERFORMED**

Assumptions made in developing the sampling plan are as follows:

2.1 All grids within the first three (3) parameters samples 1 - 70 are contaminated above target background levels. Target Background Levels (TBL) were developed through analysis of the mean of 16 background samples plus two (2) standard deviations.

2.2 Beryllium and Antimony Levels outside the 3rd parameter were negligible based on sampling results.

2.3 At all times cost effective decision making was employed in efforts to minimize analytical costs while maximizing pertinent data recovery.

2.4 Figure I was developed by plotting grids where sample results revealed contamination above background target levels for Ar, Cd, Cr, Cu, Ni, Pb, and Zn. In all of the grids highlighted through this procedure it was observed that levels of Ar, Cd and Ni were negligible in comparison to the levels of either Cu, Cr, Pb and/or Zn either separately or in combination.

2.4.1 Based on the information derived from figure I, figure 2 was developed. Figure 2 plots grids in which elevated (above background target levels) levels of Cr, Cu, Pb and Zn. All of the grids highlighted in figure I were also highlighted using the short list of contaminants Cr, Cu, Pb and Zn in figure 2.

- 2.4.2 Knowing the intention of the RVAAP to close the Deactivation Furnace based in part on Risk Assessment Calculations, the next step was to elevate the target limits and define "hot spots". The two RCRA regulated metals Cr and Pb were given a "hot spot limit" (HSL) of twice the original background target limits (BTL).

CR	BTL = 39	CR HSL = 2 (39) = 78
Pb	BTL = 28	Pb HSL = 2 (28) = 56

Only the 0-1" depth were considered in development of the sampling plan.

In similar fashion the BTL's for the non RCRA metals Cu and Zn were quadrupled to determine their HSL's.

Cu	BTL = 27	Cu HSL = 4 (27) = 108
Zn	BTL = 84	Zn HSL = 4 (84) = 336

The HSL's were used for the generation of figure 3 where grids in the third parameter were also considered.

2.2.3 Finally, based on the "hot spot" map in figure 3, the map proposed sampling sites was developed. The map concentrated on the definition of "hot spots" and also areas not yet sampled. The result can be found in figure 4.

**SECTION 3.0 CONCLUSION**

YWC recommends sampling of the fifty (50) grids highlighted in figure 4. The samples should be collected from the 0-1" depth interval and analyzed for the short list of indicator metals Cr, Cu, Pb and Zn.

**SECTION 4.0 COSTS**

Sampling	50 grids @ \$60.00/grid samples	\$3,000.00
Analytical	Total Metals Cr, Cu, Pb, Zn 50 @ \$80.	\$4,000.00
Report Preparation	10hrs @ \$50./hr	\$ 500.00
	<b>TOTAL</b>	<b>\$7,500.00</b>

Sincerely,

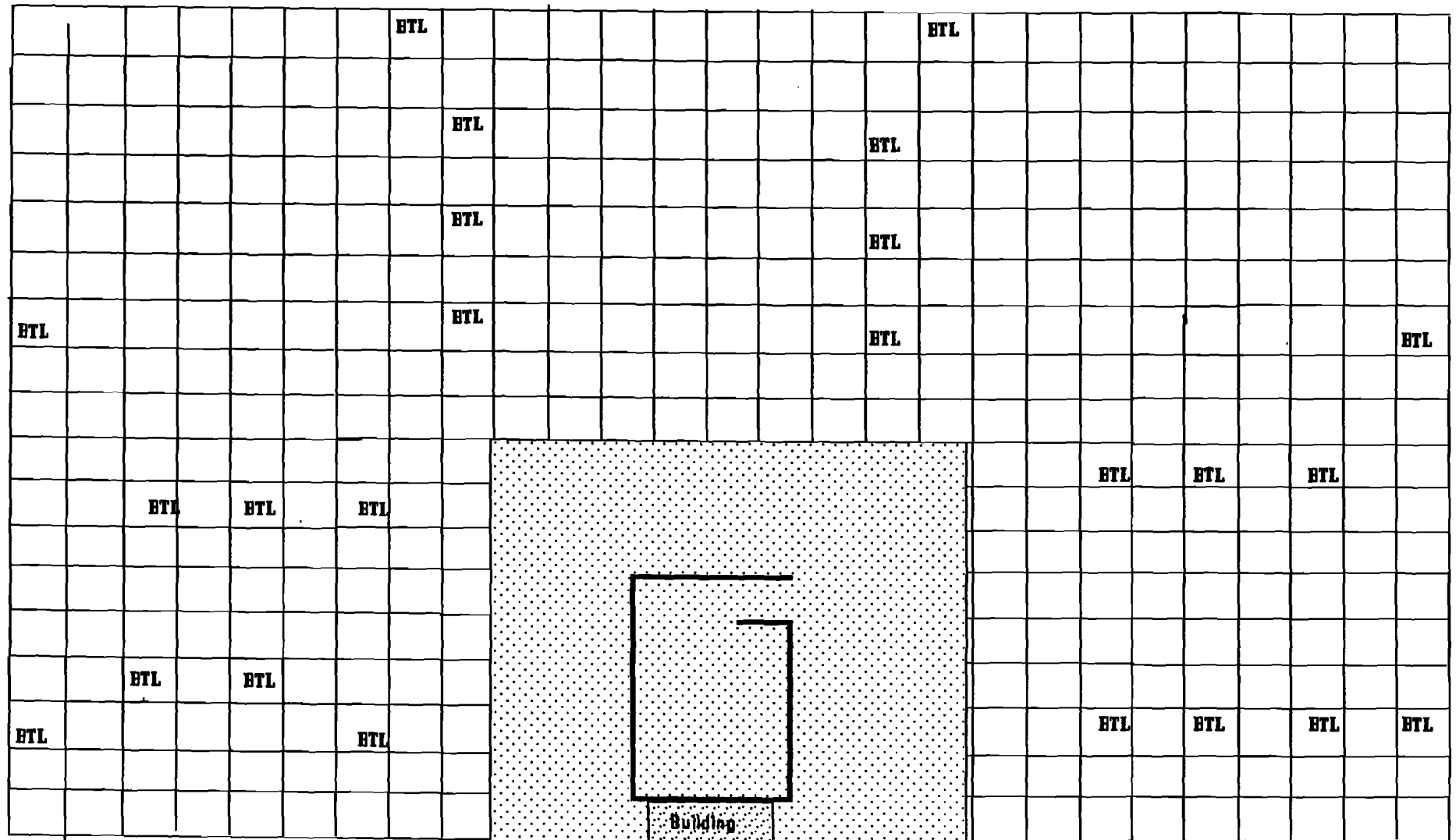
*Mike Michels (djp)*

Mike Michels  
Environmental Engineer

CC: Susan McCauslin

# RAVENNA ARSENAL, INC. - DEACTIVATION FURNACE CLOSURE

## FIGURE 1 GRIDS ABOVE BACKGROUND LIMITS



EACH GRID 7' X 7'  
SAMPLE GRID  
LOCATIONS  
NOT TO SCALE

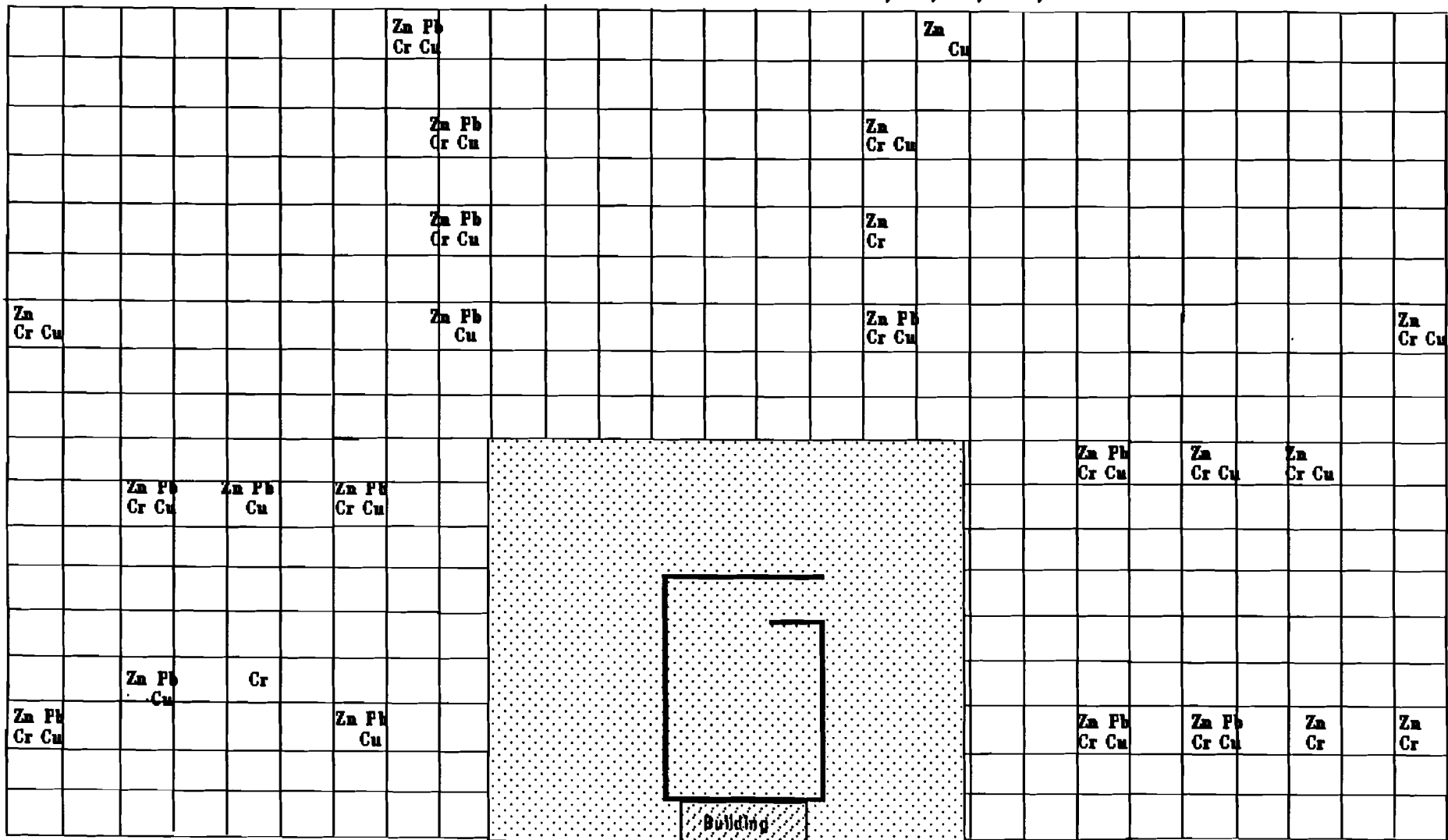
North ↑

1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th

ROADWAY

# RAVENNA ARSENAL, INC. - DEACTIVATION FURNACE CLOSURE

## FIGURE 2 GRIDS ABOVE BTL FOR Cr, Cu, Pb, and Zn



EACH GRID 7' X 7'  
SAMPLE GRID  
LOCATIONS  
NOT TO SCALE

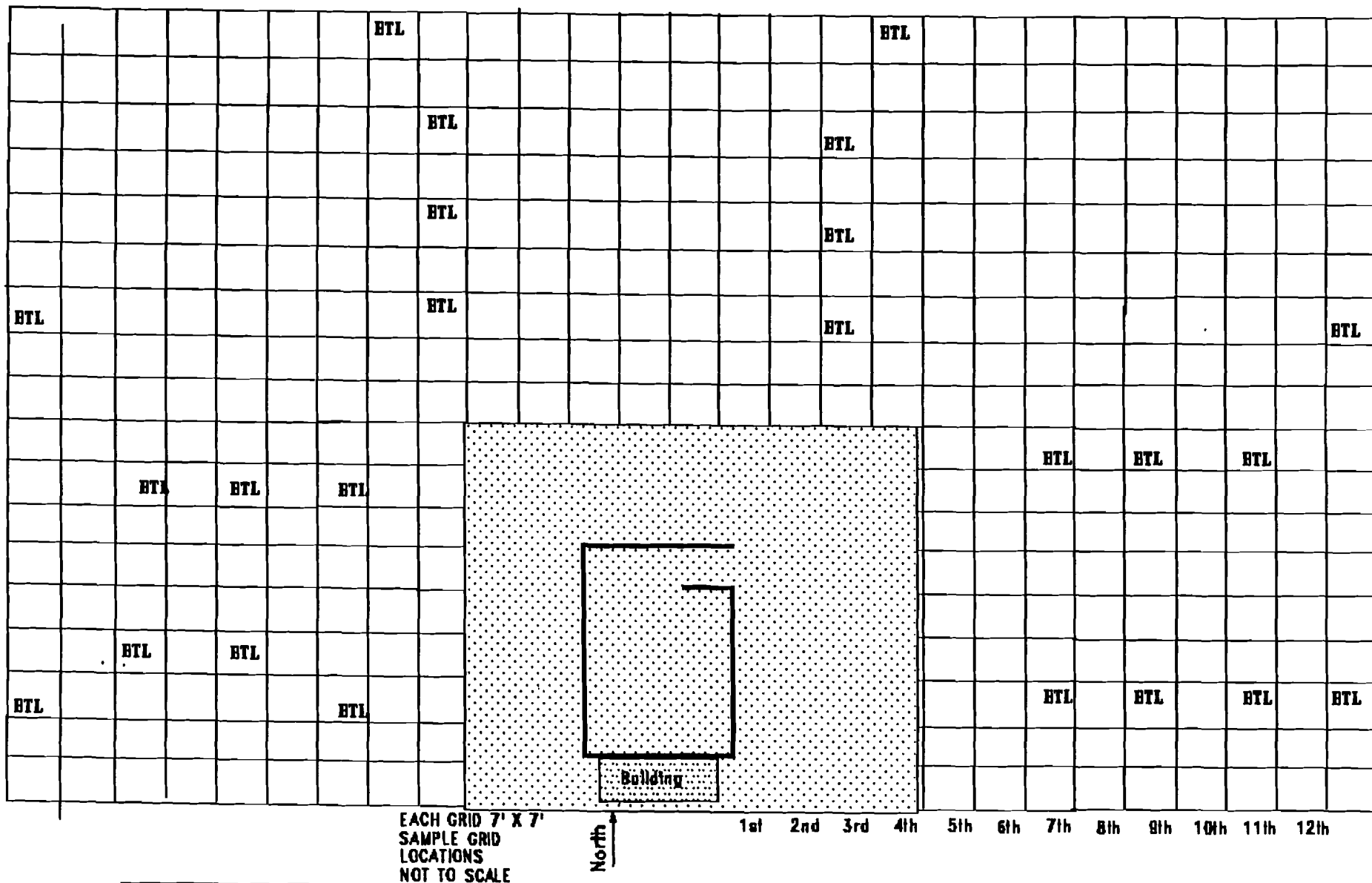
North ↑

1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th

ROADWAY

# RAVENNA ARSENAL, INC. - DEACTIVATION FURNACE CLOSURE

## FIGURE 3 GRIDS ABOVE HSL LIMITS



BTL

BTL

BTL

BTL

BTL

BTL

BTL

BTL

BTL

BTL

BTL

BTL

BTL

BTL

BTL

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BTL

BTL

BTL

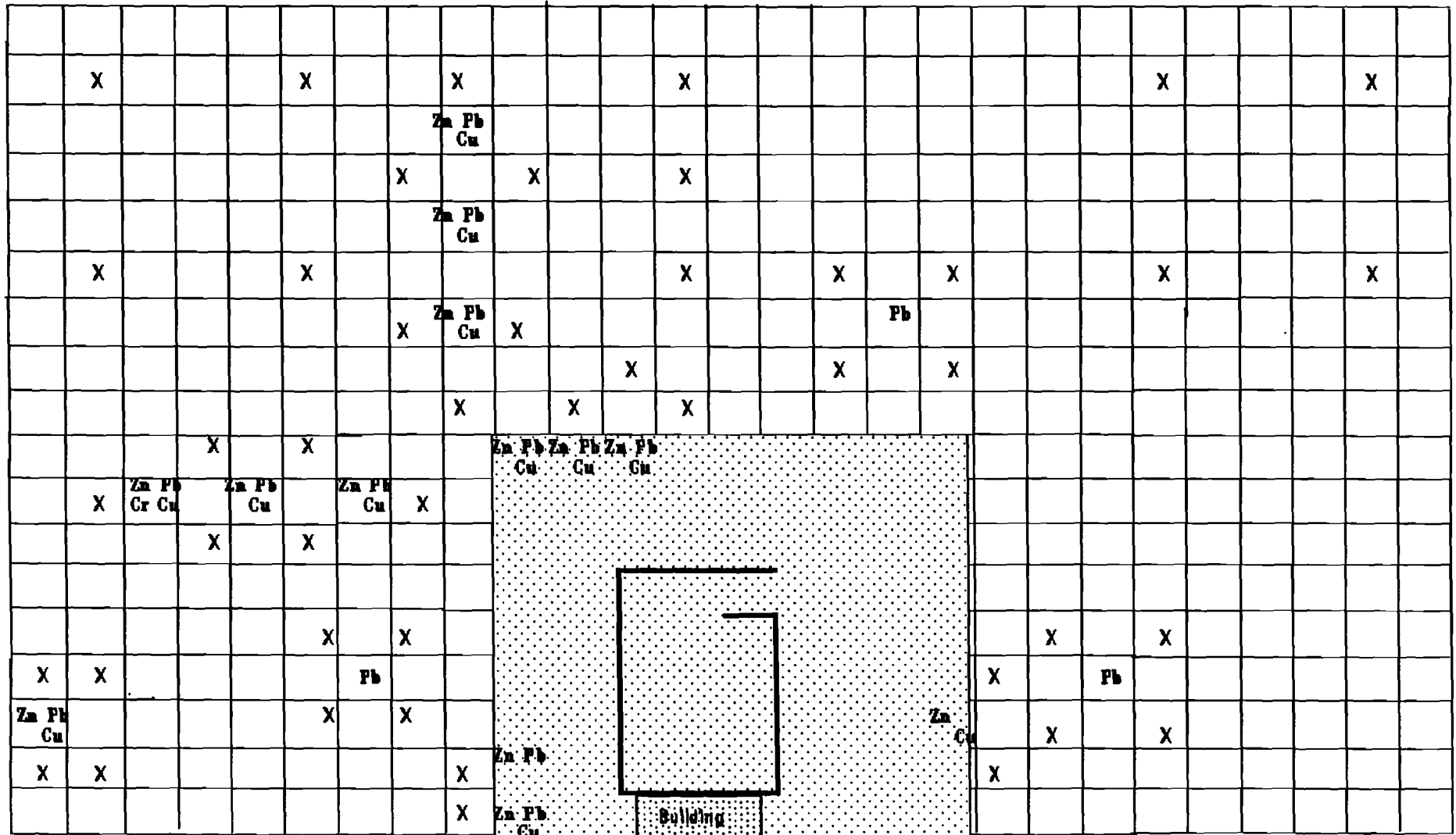
BTL

BTL

Building

# RAVENNA ARSENAL, INC. - DEACTIVATION FURNACE CLOSURE

## FIGURE 4 PROPOSED SAMPLING SITES



EACH GRID 7' X 7'  
SAMPLE GRID  
LOCATIONS  
NOT TO SCALE

North ↑

1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th

ROADWAY

PURCHASE ORDER CHANGE

R A V E N N A A R S E N A L, I N C.

Ravenna, Ohio 44266

(216) 358-7111

Contract No. DAAA09-88-Z-0001

Page 1 of 1

00253X

Date 09/09/92

SB

YWC MIDWEST, INC.

P. O. No. 21879 Chq#009

6490 PROMLER AVE, NW  
NORTH CANTON, OH 44720

ACCT. No. See Detail

Please amend our Purchase Order No. 21879, Dated 03/06/91, as follows:

ITEM #000 : Change UNIT PRICE from 22,525.0000 to 30,025.0000  
: Change EXTENDED PRICE from 22,525.00 to 30,025.00  
: Charge to ACCOUNT 63907699

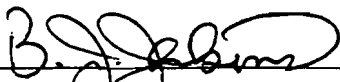
SAMPLING 50 GRIDS (@ unit cost \$60.00/grid)	=	\$3,000.00
ANALYSIS OF 50 SAMPLES (@ UNIT COST \$80.00)	=	\$4,000.00
REPORT PREPARATION (10 hrs (@ \$50/hr)	=	\$ 500.00
		<u>\$7,500.00</u>

\*ENGR/BJJ/jh

Total Revised Cost: \$97,139.00

This order, except as herein amended, shall in all other respects remain as before, unless completely cancelled.

RAVENNA ARSENAL, INC.

By   
Contract/Procurement &  
Purchasing

Approved By \_\_\_\_\_  
For Contracting Officer





State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.  
Columbus, Ohio 43266-0149  
(614) 644-3020  
FAX (614) 644-2329

10/7/92
CO-COR
CONT ADM
PROP ADM
QASAS
SECUR
RAI 10/7/92
RE: URM

George V. Voinovich  
Governor  
Donald R. Schregardus  
Director

October 5, 1992

Re: OEPA Permit No. 3I000000\*ED  
Facility Name: Ravenna Army Ammunition Plant

*S: 11/15/92  
for Fee for  
permit*

Ravenna Army Ammunition Plant  
8451 State Route 5  
Ravenna, OH 44266

Transmitted herewith is one copy of the final National Pollutant Discharge Elimination System permit referenced above.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and shall set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency and the Environmental Law Division of the Office of the Attorney General within three (3) days of filing with the Board. An appeal may be filed with the Environmental Board of Review at the following address:

Environmental Board of Review  
236 East Town Street, Room 300  
Columbus, Ohio 43215

*Robert E. Phelps*

Robert E. Phelps, P.E. Manager  
Permit Administration Section  
Division of Water Pollution Control

RECEIVED

OCT - 7 1992

N. WULFF

REP/mbn

Certified Mail

General Manager  
Ravenna Arsenal, Inc.  
FWD FOR

Information  
 Compliance as applicable  
 Reply NLT

TO	OFFICE	ACTION
✓	GM	
	CO-COR	
✓	ACCTG	
	SEC	
✓	ENGR	
	IR	
	S & T & O	
	P & CA	
	SAF	
	DPM	
	RETURN	

*Engr & some for both letters*

*Sub Distribution*

*Environmental*

*NPDES File (Julia)*

*McGee/Mound (2)*

*T. Wisely*

*Julio check Tom C*

*AMCCOM ?*

*US A&PA other*

*3*



A BIRD ENVIRONMENTAL COMPANY

**DRAFT**

October 13, 1992

Mr. Bill Jenkins  
Ravenna Arsenal, Inc.  
8451 State Route 5  
Ravenna, Ohio 44266

RECEIVED  
OCT 16 1992  
PURCHASING

YWC Ref: 92-111.1

B.J. JENKINS

OCT 16 1992  
cc: Susan m. Carlin

SECTION 1.0 INTRODUCTION

Based on recommendations of the Ohio EPA developed in the meeting between OEPA and Ravenna Arsenal, YWC Technologies has developed the following sampling plan.

regarding the closure of the RWAP Deactivation Furnace,

SECTION 2.0 ~~WORK PERFORMED~~ *Rationale*

Assumptions made in developing the sampling plan are as follows:

2.1 All grids within the first three (3) parameters samples 1 - 70 are contaminated above target background levels. Target Background Levels (TBL) were developed through analysis of the mean of 16 background samples plus two (2) standard deviations.

2.2 Beryllium and Antimony Levels outside the 3rd parameter were negligible based on sampling results.

*out* 2.3 At all times cost effective decision making was employed in efforts to minimize analytical costs while maximizing pertinent data recovery.

2.4 Figure I was developed by plotting grids where sample results revealed contamination above background target levels for Ar, Cd, Cr, Cu, Ni, Pb, and Zn. In all of the grids highlighted through this procedure it was observed that levels of Ar, Cd and Ni were negligible in comparison to the levels of either Cu, Cr, Pb and/or Zn either separately or in combination.

2.4.1 Based on the information derived from figure I, figure 2 was developed. Figure 2 plots grids in which elevated (above background target levels) levels of Cr, Cu, Pb and Zn. All of the grids highlighted in figure I were also highlighted using the short list of contaminants Cr, Cu, Pb and Zn in figure 2.

DRAFT

2.4.2 Knowing the intention of the RVAAP to close the Deactivation Furnace based in part on Risk Assessment Calculations, the next step was to elevate the target limits and define "hot spots". The two RCRA regulated metals Cr and Pb were given a "hot spot limit" (HSL) of twice the original background target limits (BTL).

CR	BTL = 39	CR HSL = 2 (39) = 78
Pb	BTL = 28	Pb HSL = 2 (28) = 56

Only the 0-1" depth were considered in development of the sampling plan.

In similar fashion the BTL's for the non RCRA metals Cu and Zn were quadrupled to determine their HSL's.

Cu	BTL = 27	Cu HSL = 4 (27) = 108
Zn	BTL = 84	Zn HSL = 4 (84) = 336

The HSL's were used for the generation of figure 3 where grids in the third parameter were also considered.

2.2.3 Finally, based on the "hot spot" map in figure 3, the map proposed sampling sites was developed. The map concentrated on the definition of "hot spots" and also areas not yet sampled. The result can be found in figure 4.

### SECTION 3.0 CONCLUSION

YWC ~~recommends~~ <sup>will perform</sup> sampling of the thirty two (32) grids highlighted in figure 4. The samples <sup>will</sup> should be collected from the 0-1" depth interval and analyzed for total lead. The lead analysis should provide sufficient data since lead proved to be the primary indicator.

*to characterize contamination*

Sincerely,

Mike Michels  
Environmental Scientist II

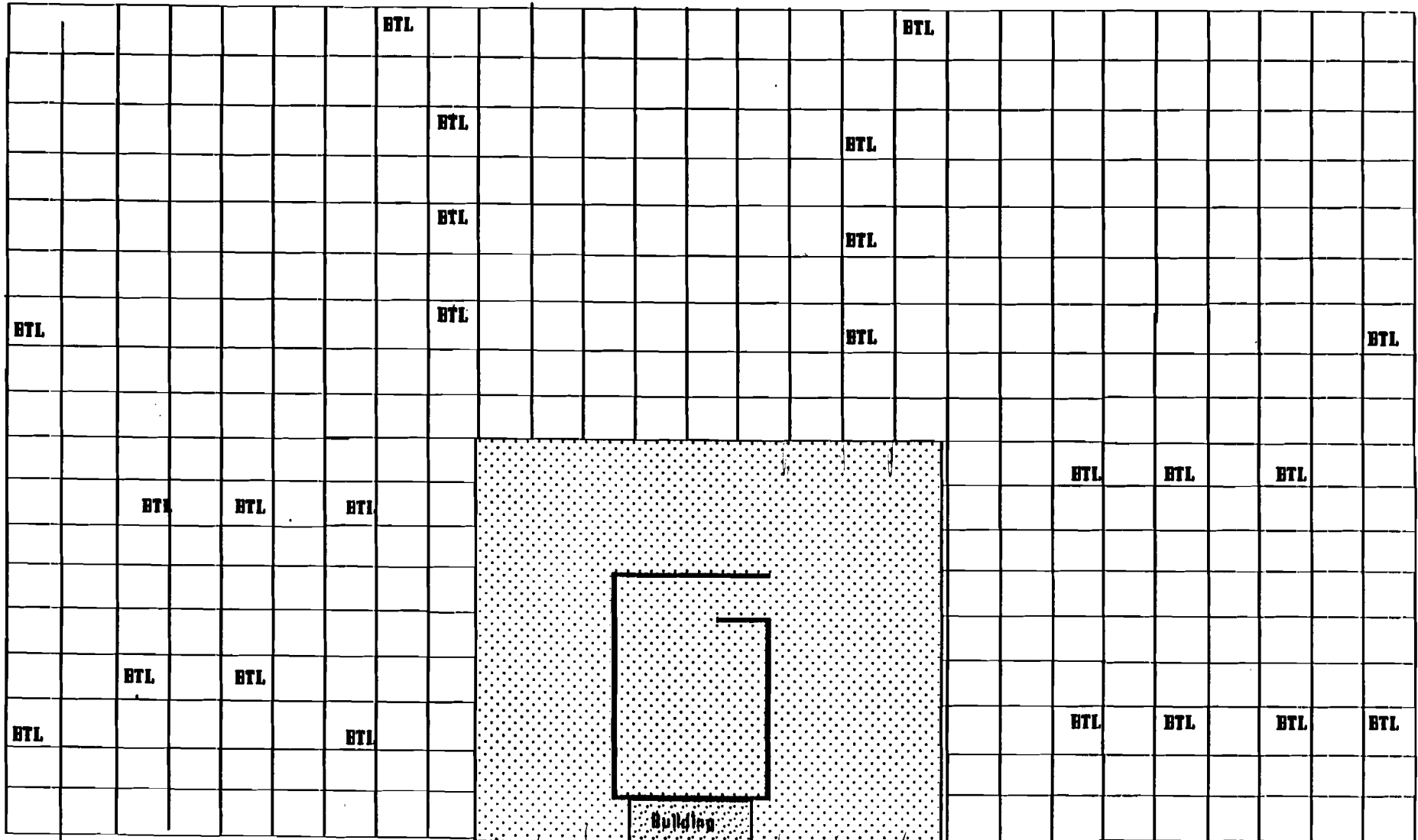
CC: Susan McCauslin

combine Figures 3+4

# RAVENNA ARSENAL, INC. - DEACTIVATION FURNACE CLOSURE

# DRAFT

## FIGURE 1 GRIDS ABOVE BACKGROUND LIMITS



EACH GRID 7' X 7'  
 SAMPLE GRID  
 LOCATIONS  
 NOT TO SCALE

North ↑

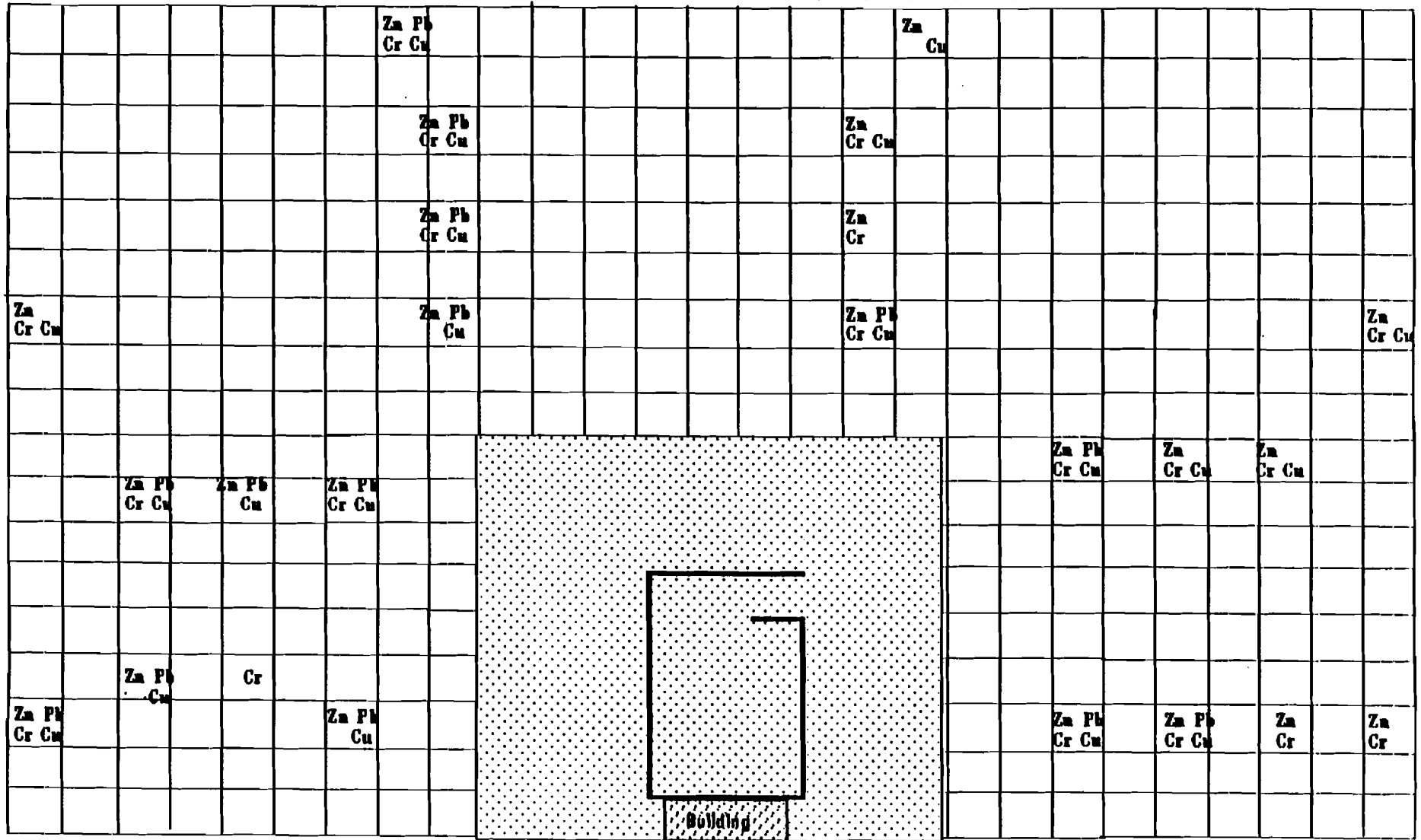
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th

ROADWAY

# RAVENNA ARSENAL, INC. - DEACTIVATION FURNACE CLOSURE

# DRAFT

## FIGURE 2 GRIDS ABOVE BTL FOR Cr, Cu, Pb, and Zn



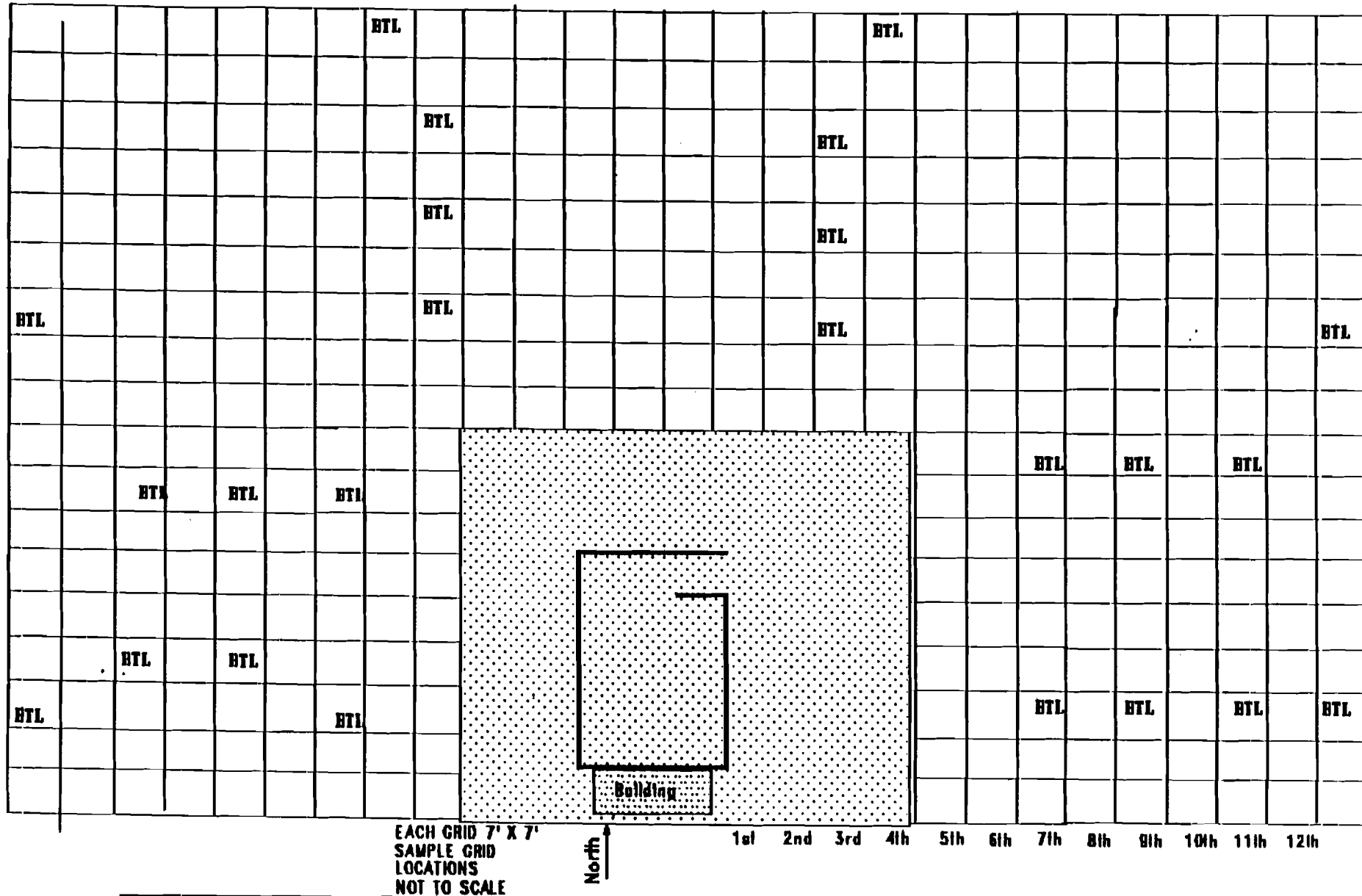
EACH GRID 7' X 7'  
 SAMPLE GRID  
 LOCATIONS  
 NOT TO SCALE

North ↑

1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th

ROADWAY

FIGURE 3 GRIDS ABOVE HSL LIMITS



ROADWAY





State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.  
Columbus, Ohio 43266-0149  
(614) 644-3020  
FAX (614) 644-2329

RECEIVED

OCT 19 1992

N. WULFF

*STOIA/SUC*  
*Closure Ftd*

George V. Voinovich  
Governor

OFFICE	ACTION
GM	
CO-COR	
ACCTG	
SEC	
<del>ENGR</del>	
IR	
S&T&O	
P&CA	
SAF	
DPM	
RETURN	

CERTIFIED MAIL

October 14, 1992

Susan McCauslin  
Ravenna Arsenal, Inc.  
8451 State Route 5  
Ravenna, Ohio 44266-9297

RE: CLOSURE PLAN EXTENSION  
RAVENNA ARMY AMMUNITION PLANT  
DEACTIVATION FURNACE  
OH5 210 020 736

SEARCHED	
INDEXED	
SERIALIZED	
FILED	
OCT 19 1992	
FBI - CLEVELAND	

Dear Ms. McCauslin:

On July 13, 1992, Ravenna Arsenal, Inc., located at 8451 State Route 5, Ravenna, Ohio, submitted a request for an extension to the closure period specified in the approved closure plan dated November 2, 1990 for 180 days from the expiration date of the last extension until January 24, 1993. The extension request was submitted pursuant to OAC Rule 3745-66-13(B) as closure will require longer than the 180 day period specified in OAC Rule 3745-66-13.

Ravenna Arsenal, Inc. has requested this extension because of the larger than expected area of contamination found during closure activities. On August 11, 1992 a meeting was held between Ohio EPA and Ravenna Arsenal, Inc., and it was agreed that the facility will submit a sampling plan to preclude removal and risk assessment plans in order to close the unit under the November 1, 1990 approved closure plan. To date, a sampling plan has not yet been received by Ohio EPA.

My staff has reviewed your request and recommends that the extension be granted per Rule 3745-66-13(B) of the OAC. I concur and am therefore granting this extension request. This extension is being granted for the above referenced closure plan and expires on January 24, 1993.

Ravenna Arsenal, Inc. shall continue to take all steps to prevent a threat to human health and the environment from the unclosed but inactive waste management unit per OAC Rule 3745-66-13(B)(2).

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Gavin Date OCT 14 1992

OHIO E.P.A.

OCT 14 92

ENTERED DIRECTOR'S JOURNAL



Susan McCauslin  
Ravenna Arsenal, Inc.  
Page Two

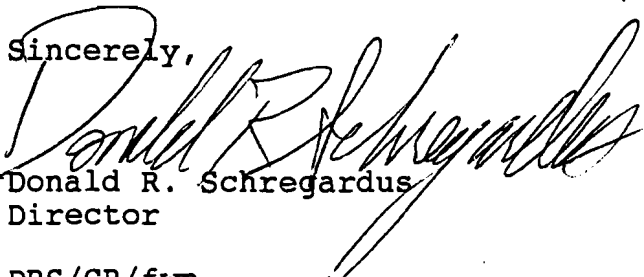
Please be advised that approval of this closure extension request does not release Ravenna Arsenal, Inc. from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and an independent professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. These certifications shall follow the format specified in OAC 3745-50-42(D), and should be submitted to: Ohio Environmental Protection Agency, Division of Hazardous Waste Management, Attn: Tom Crepeau, Data Management Section, P.O. Box 0149, Columbus, OH 43226-1049.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the ground upon which the appeal is based. This appeal must be filed with the Environmental Board of Review within thirty (30) days from the receipt of this letter. A copy of the appeal must be served to the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Board. An appeal must be filed at the following address:

Environmental Board of Review  
236 East Town Street  
Room 300  
Columbus, OH 43215

Sincerely,

  
Donald R. Schregardus  
Director

DRS/CR/fwn

cc: Tom Crepeau, DHWM Central File, Ohio EPA  
Section Chief, Ohio Permit Section, U.S. EPA - Region V  
Randy Meyer, Ohio EPA, DHWM, CO  
Carolyn Reiersen, Ohio EPA, DHWM, NEDO

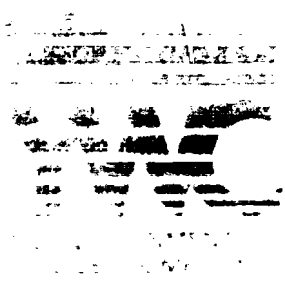
OHIO E.P.A.

OCT 14 92

ENTERED DIRECTOR'S JOURNAL

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Carvin Date OCT 14 1992



F A S I M I L E C O P Y O F S H E E T

Initial's Date 11/2/84

in the name of the State of

California

Department of Corrections

San Quentin State Prison

San Francisco, California

Very truly yours,  
J. P. [Signature]

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4 PAGES.

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**DRAFT****YWC TECHNOLOGIES SAMPLING PLAN**

Plan To: Ms. Susan McCauslin  
Ravenna Arsenal, Inc.  
8451 State Route 5  
Ravenna, Ohio 44266

Plan Date: 10/22/92

Subject: Sampling Plan to Further Delineate Metal Contamination at  
the Deactivation Furnace for RCRA Closure.

**SECTION 1.0 INTRODUCTION**

Ravenna Arsenal Inc. has been conducting a RCRA closure of a deactivation furnace at their site in Ravenna, Ohio. After extensive sampling and analysis of the soils surrounding the site, the areal extent of metals contamination has been identified. During presentation of this data to OEPA at a meeting on August 12, 1992, it was determined that further delineation of the "hot spots" was required along with acquiring additional data on selected grids not previously sampled.

Prior to initiation of this data gathering effort, OEPA requested development of a sampling plan for their review.

**SECTION 2.0 BACKGROUND**

The sampling plan was developed based upon the following conditions identified during the previous sampling phase:

- 2.1 All grids within the barrier walls and the first three (3) perimeter samples (ie, grids 1 - 70) are contaminated above background target levels. Background Target Levels (BTL) were developed through analysis of the mean of 16 background samples plus two (2) standard deviations.
- 2.2 Antimony and Beryllium levels outside the 3rd perimeter were less than or equal to the BTL. One of 24 Nickel levels outside the 3rd perimeter was above the BTL but less than two times the BTL. Therefore, these three metal species will not be considered in developing the sampling plan.
- 2.3 Only the 0-1' BGL interval from the 24 grids outside the 3rd perimeter were sampled previously.

**SECTION 3.0 SAMPLING LOCATIONS**

The objective of this sampling phase are two-fold: delineate "hot spots" and sample "dead spots".

3.1 "Hot spot" limits (HSL) will be defined as two times the BTL for RCRA metals and ten times the BTL for non-RCRA metals.

Ar	BTL = 14	Ar HSL = 2 (14) = 28
Cd	BTL = 5	Cd HSL = 2 (5) = 10
Cr	BTL = 39	Cr HSL = 2 (39) = 78
Pb	BTL = 28	Pb HSL = 2 (28) = 56
Cu	BTL = 27	Cu HSL = 10 (27) = 270
Zn	BTL = 84	Zn HSL = 10 (84) = 840

Following identification of these "hot spots", adjacent grids were selected to encircle the "hot spots". A total of 22 grids will be sampled (0-1' BGL) to delineate these locations as shown in Figure 1.

3.2 "Dead spots" are defined by visual observation as gaps in the grid system. A total of 11 grids will be sampled (0-1' BGL) to fill gaps to the north, northeast, and northwest of the furnace. The actual grids are shown on Figure 1.

#### SECTION 4.0 SAMPLING METHODOLOGY

All samples will be collected, containerized, and shipped in accordance with the protocol prescribed in the approved sampling plan dated December 1990 (Revision 1).

#### SECTION 4.0 ANALYSIS

The soil samples will be analyzed for total Lead according to EPA 846 protocol by American Analytical Laboratories, Akron, Ohio. The lead analysis should provide sufficient data since lead has been found to be a primary indicator of contamination.

**DRAFT**



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

October 27, 1992

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

TO: Ohio Environmental Protection Agency  
Northeast District Office  
2110 East Aurora Road  
Twinsburg, OH 44087  
ATTN: Carolyn Reiersen

Subject: Sampling Plan for RCRA Closure of Deactivation Furnace,  
Ravenna Army Ammunition Plant

Dear Ms. Reiersen:

Attached you will find a sampling plan prepared for RVAAP by YWC Technologies, to further delineate metal contamination at the Deactivation Furnace closure site. The plan was prepared following suggestions made in our August 12, 1992 meeting at your office.

Please contact Susan McCauslin at (216) 297-3220 following your review of the plan to discuss any questions you may have. Once the plan meets agency approval we will proceed with implementation.

The Government point of contact is Robert J. Kasper, Commander's Representative, at (216) 297-3124.

Sincerely,

RAVENNA ARSENAL, INC.

H.R. Cooper  
Engineering Manager

SM/jb/sml1.oct

cc: N. Wulff  
S. McCauslin  
File

cf: Ohio Environmental Protection Agency  
1800 Watermark Drive  
P.O. Box 1049  
Columbus, OH 43266-0149  
ATTN: Paul Vandermeer

## YWC TECHNOLOGIES SAMPLING PLAN

Plan To: Ms. Susan McCauslin  
Ravenna Arsenal, Inc.  
8451 State Route 5  
Ravenna, Ohio 44266

Plan Date: 10/26/92

Subject: Sampling Plan to Further Delineate Metal Contamination at the Deactivation Furnace for RCRA Closure.

### SECTION 1.0 INTRODUCTION

Ravenna Arsenal Inc. has been conducting a RCRA closure of a deactivation furnace at their site in Ravenna, Ohio. After extensive sampling and analysis of the soils surrounding the site, the areal extent of metals contamination has been identified. During presentation of this data to OEPA at a meeting on August 12, 1992, it was determined that further delineation of the "hot spots" was required along with acquiring additional data on selected grids not previously sampled.

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#### SECTION 4.0      SAMPLING METHODOLOGY

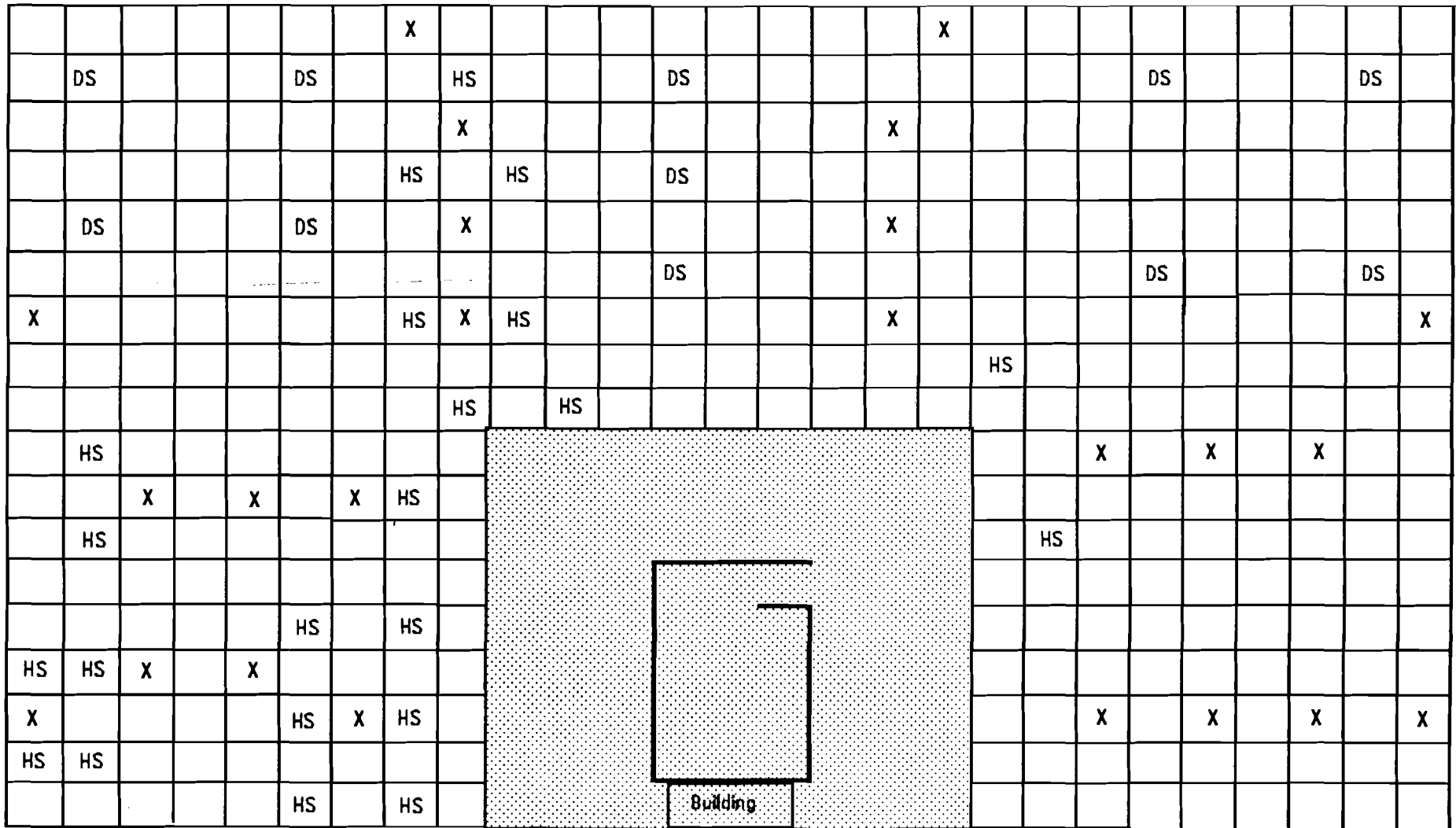
All samples will be collected, containerized, and shipped in accordance with the protocol perscribed in the approved closure plan dated December 1990 (Revision 1).

#### SECTION 4.0      ANALYSIS

The soil samples will be analyzed for total Lead according to SW-846 protocol by American Analytical Laboratories, Akron, Ohio. The lead analysis should provide sufficient data since lead has proven to be a primary indicator of contamination.

# RAVENNA ARSENAL, INC. - DEACTIVATION CLOSURE

## FIGURE 1



EACH GRID 7' X 7'  
SAMPLE GRID  
LOCATIONS  
NOT TO SCALE



S1

1 2 3 4 5 6 7 8 9 10 11 12

ROADWAY

S2

S4

X= GRIDS PREVIOUSLY SAMPLED  
HS= HOT SPOT DELINEATION  
DS= DEAD SPOT DELINEATION



# Presentation

Plot for each metal - Plot for each depth  
 Overall grid - to show sample  
 Background samples -  
 Agency may question validity

Confirmation Sampling after Removal  
 re-calculate grid size  
 present to EPA

- ① Removal - Best in Long Run
- ② Removal + Risk assess. - OSHA (at Lead to 62)
- ③ In-Situ Stabilization (most cost effective - if it works)
- ④ Capping in place w/ monitor wells

need to consider gw Mon. 100' 12' 8'

Disposal sampling - perhaps every 100 yds. (5300 yds estimate)  
 6,000 tons estimate  
 (125 truckloads)  
 \$15-25 Tonn stabilization  
 Estimate 10% Haz. Max.  
 \$38-40 Ton Excavation, Loading, Transport + Disposal

H.W. \$175-250  
 Trans \$8-12  
 A.H.K. \$25/ton  
 TON

Plus Bldg Removal Contam. in Woods

- Friday 9:00
- ① Confirmation Sampling after soil removal
  - ② Removal of bldgs?
  - ③ Sampling + removal around roadway + in woods South
  - ④ risk assessment or other MCL for Copper, Zinc
- ~~\_\_\_\_\_~~

RAVENNA ARMY AMMUNITION PLANT  
RAVENNA ARSENAL, INC.

RECORD OF CONVERSATION

DATE: 21 JAN 1992

FROM: T.M. CHANDA  
RAI ENVIRONMENTAL ENG.

PHONE: 216-297-3221

TO: ALAN HARNESS  
OHEPA  
DIV. OF SOLID & HW  
COLUMBUS, OH

PHONE: 614-644-2820

SUBJECT: DRAFT FINDINGS AND ORDER AGREEMENT; AND EXTENSION  
REQUEST FOR RVAAP RCRA B NOD RESPONSE

Mr. Harness was contacted to determine the Findings and Order Agreement (FOA) current status. Mr. Harness is to meet with Mr. Mark Navar from the OHEPA legal division regarding the draft FOA. The meeting is scheduled for 22 January 1992 at 1000 HRS. Harness will contact this office following that meeting to communicate the outcome of that discussion.

RVAAP'S request for a time extension in responding to OHEPA's RCRA B NOD (technical review phase issuance) has been approved by Harness. The request has now been forwarded onto his boss for final approval. Harness had no objections to our 150 day extension request.



T.M. Chanda

cc: RVAAP COR  
N. Wulff  
H. Cooper *hw*  
*File*

JAN 22 1992

RAVENNA ARMY AMMUNITION PLANT  
RAVENNA ARSENAL, INC.

RECORD OF CONVERSATION

DATE: January 27, 1992

FROM: T.M. Chanda  
Env. Eng.

PHONE: 216-297-3221

TO: Mr. Alan Harness  
OHEPA, DHSW  
Columbus, OH

PHONE: 614-644-2820

SUBJECT: OHEPA Issuance of Draft Findings And Order Agreement  
(FOA)

Mr. Harness was called to find out the results of his 1/23/92 meeting with Mr. Mark Navarre, OHEPA lawyer, regarding subject matter. Harness indicated that it appears Navarre's office will be issuing the draft to RVAAP either Friday, 1/31/92 or Monday, 2/3/92. The only changes that the OHEPA lawyers are to recommend from RVAAP's 10/22/91 FOA request is that regarding funding; see the attached underlined portion. The lawyers want to see a little better wording provided pertinent to the Army's funding statement and/or obligation. Whether this will be a stumbling block or not will be left to the Army lawyers to decide. OHEPA's suggested wording of this statement has not yet been determined.

As a matter of follow-up, Chanda will contact Mr. Navarre on 1/29/92 to confirm that the draft FOA is still planned to be sent to RVAAP on either 1/31/92 or 2/3/92; also what wording he intends to incorporate for the funding statement.

  
T.M. Chanda

cc: RVAAP COR *of Attachment*  
N. Wulff  
H. Cooper  
File



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.  
Columbus, Ohio 43266-0149  
(614) 644-3020  
FAX (614) 644-2329

RECEIVED

JUL 08 1992

N. WULFF

George V. Voinovich  
Governor

Donald R. Schregardus  
Director

July 2, 1992

Mr. Norman Wulff  
Vice President and General Manager  
Ravenna Arsenal, Inc.  
8451 State Route 5  
Ravenna, Ohio 44266-9297

RE: Ravenna Arsenal, Inc.  
Director's Final Findings and Orders

Dear Mr. Wulff:

This letter follows my receipt of your June 30, 1992 telephone message that the United States Army has accepted the draft exemption order, as submitted to Tom Chanda on June 10, 1992. Enclosed please find the hard copy of the Findings and Orders. Please have the enclosed document signed by Mr. Robert J. Kasper, on behalf of the Ravenna Army Ammunition Plant, and the appropriate signatory, on behalf of Ravenna Arsenal, Inc. Upon receipt of the signed document, I will present it to the Director's Office for review and approval. As I have stated previously, the original exemption order was proposed by former Director Richard Shank two years ago. I offer no assurance that Director Donald Schregardus will approve this exemption order. However, in my opinion, the reasons for the Order have not changed since 1990 and therefore, I have no reason to expect that this Order will not be acceptable to the Director.

Should you have any questions in this regard, please contact me as soon as possible. Thank you for your cooperation.

Sincerely,

Mark J. Navarre  
Staff Attorney

MJN/dms  
Enclosure

cc: A. Harness, DHWM  
E. Lim, DHWM  
D. Sholtis, DHWM  
B. Babb, Legal

Issuance Date JUL 30 1992  
Effective Date JUL 30 1992

BEFORE THE  
OHIO ENVIRONMENTAL PROTECTION AGENCY

In the Matter of :  
:   
RAVENNA ARSENAL, INC. :  
Ravenna Army Ammunition Plant : Director's Final  
8451 State Route 5 : Findings and Orders  
Ravenna, Ohio 44266-9267 :

Pursuant to Chapter 3734 of the Ohio Revised Code ("ORC"), the Director of Environmental Protection makes the following Findings and issues the following Orders:

FINDINGS

1. Ravenna Arsenal, Inc. ("Ravenna Arsenal") operates the Ravenna Army Ammunition Plant ("RVAAP"), a facility owned by the United States Army and engaged in the storage and treatment of munitions and munition derivatives.
2. On March 31, 1981, RVAAP/Ravenna Arsenal submitted a RCRA Part A application to Ohio EPA. The application was a copy of the application filed with U.S. EPA. RVAAP/Ravenna Arsenal has obtained interim status from U.S. EPA for storage and thermal treatment (U.S. EPA I.D. No. OH5 210 020 736).
3. In October, 1981, the Ohio Hazardous Waste Facility Board ("HWFB") issued permits to all facilities that were "in operation" immediately prior to October 9, 1980. RVAAP was not "in operation" at that time in the sense that it was not engaged in the production of munitions. RVAAP was, however, engaged in other activities, including storage, inspection and demilitarization, involving periodic thermal treatment by open burning and detonation.
4. Due to uncertainty on the part of both RVAAP and Ohio EPA as to RVAAP's regulatory status, HWFB did not issue a permit to RVAAP or Ravenna Arsenal.
5. RVAAP/Ravenna Arsenal have lawfully conducted thermal treatment activities pursuant to Ohio law through exemptions, granted on October 1, 1985 and May 19, 1986, and through numerous emergency permits which have been issued to RVAAP/Ravenna Arsenal since September 1987.
6. RVAAP/Ravenna Arsenal filed a RCRA Part B permit application with Ohio EPA on November 8, 1988.

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Carvin Date 7-30-92

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

Director's Final Findings and Orders  
Ravenna Army Ammunition Plant  
PAGE TWO

By: Mary Carvin Date 7-30-92

7. Pursuant to ORC Section 3734.02 (G) and Rule 3745-50-31 of the Ohio Administrative Code, the Director of Environmental Protection (the "Director") may by order exempt any person generating, storing, treating, or disposing of hazardous wastes in such quantities or under such circumstances that, in the determination of the Director, it is unlikely that the public health or safety, or the environment will be adversely affected thereby, from any requirement to obtain a permit or license, or comply with the manifest system or other requirements of ORC Chapter 3734.
8. It is environmentally beneficial for the State of Ohio to allow RVAAP/Ravenna Arsenal to continue to store and treat munitions and munition derivatives in a manner that is safe to the public, the environment, and personnel at RVAAP. If RVAAP/Ravenna Arsenal conducts its treatment activities in accordance with the Orders herein, it is unlikely that the public health or safety, or the environment will be adversely affected.
9. This action is consistent with, and equivalent to, the regulations promulgated by the Administrator of the United States Environmental Protection Agency under the "Resource Conservation and Recovery Act of 1976," 90 Stat. 2798, 42 U.S.C. Section 6921, et seq., as amended.

#### ORDERS

1. An exemption is hereby granted to RVAAP/Ravenna Arsenal to store and treat munitions and munition derivatives, as required by continuing facility operations, provided the following conditions are met:
  - a. The exemption applies only to thermal treatment by open burning, or by open detonation, and to the storage of all materials to be so treated before and after such treatment, provided that, in accordance with subparagraph 1., no hazardous wastes shall remain on-site for more than ninety (90) days.
  - b. At least fourteen (14) days before any thermal treatment is conducted, RVAAP/Ravenna Arsenal must submit to Ohio EPA's Northeast District Office a treatment plan which identifies the type and quantity/weight of each material to be treated by open burning, or by open detonation. The plan shall also describe the chemical or explosive composition and weight of each material, provide notification of the date(s) upon which treatment will be conducted, and identify the location of each treatment area.
  - c. After receiving the treatment plan identified in subparagraph b., Ohio EPA shall be afforded an opportunity to inspect the treatment site(s) before treatment begins.

30-1-90  
DIRECTOR'S OFFICE

By: Mary Carvin Date 7-30-92

- d. RVAAP/Ravenna Arsenal shall conduct all treatment activities in compliance with Ohio Administrative Code ("OAC") Rule 3745-68-82: "Open burning; waste explosives" and all applicable air pollution requirements, including OAC Chapter 3745-19.
- e. RVAAP/Ravenna Arsenal shall comply with OAC Rule 3745-50-58: "Conditions applicable to all permits," which conditions are incorporated herein by reference.
- f. RVAAP/Ravenna Arsenal shall comply with the following rules of the Ohio Administrative Code which are incorporated herein by reference:
- |                                |  |
|--------------------------------|--|
| 3745-54-14(A), (B)             | - Security   |
| 3745-54-15(A)                  | - General Inspection Requirements                                    |
| 3745-54-17(A), (B)             | - General Requirements for Ignitable, Reactive or Incompatible Waste |
| 3745-54-31                     | - Design and Operation of Facility                                   |
| 3745-54-32                     | - Required Equipment   |
| 3745-54-33                     | - Testing and Maintenance of Equipment                               |
| 3745-54-34                     | - Access to Communications or Alarm System                           |
| 3745-54-37                     | - Arrangements with Local Authorities                                |
| 3745-54-55                     | - Emergency Coordinator  |
| 3745-54-56                     | - Emergency Procedures   |
| 3745-54-73 (A), (B)(1), (B)(2) | - Operating Record   |
| 3745-54-74                     | - Availability, Retention and Disposition of Records                 |
| 3745-55-11                     | - Closure Performance Standards                                      |
| 3745-55-14                     | - Disposal or Decontamination of Equipment                           |
- g. All treatment activities shall be conducted in areas specifically selected to minimize any deleterious effects on the public and the environment. Selection of each treatment area shall be made on the basis of topography, wind direction, proximity to utility lines and/or other man-made constructions, and other relevant factors. RVAAP/Ravenna Arsenal shall also take all appropriate measures to minimize noise occasioned by treatment activities.
- h. RVAAP/Ravenna Arsenal shall provide adequate security for all treatment activities, to prevent the entry of unauthorized persons into dangerous areas. Adequate fire-fighting and

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

Director's Final Findings and Orders  
Ravenna Army Ammunition Plant  
PAGE FOUR

By: Mary Carvin Date 7-30-92

first aid equipment shall be made available by RVAAP/Ravenna Arsenal and/or by the local fire department.

- i. Handling and transportation of waste to the treatment area(s) shall be accomplished by persons with experience and/or training in the handling of reactive, explosive and ignitable materials. All wastes shall be properly packed and stabilized prior to transportation.
  - j. All open burning and detonation shall take place under the direct supervision of the Environmental Engineer, Ravenna Arsenal, Inc., or his authorized designee.
  - k. RVAAP/Ravenna Arsenal shall inspect the treatment area after each open burning or detonation for untreated waste and shall determine whether any residues are hazardous wastes pursuant to OAC Rules 3745-50-01 et seq., with such determination subject to confirmation by Ohio EPA. All residues determined to be hazardous waste shall be managed as such pursuant to OAC Chapters 3745-50 et seq.
  1. RVAAP/Ravenna Arsenal shall conduct each and every treatment activity in accordance with the treatment plan previously filed with Ohio EPA. Within seven (7) days after each treatment activity is completed, RVAAP/Ravenna Arsenal shall notify Ohio EPA's Northeast District Office, in writing, that treatment is complete. Such notification shall also include information concerning the disposition of any hazardous wastes generated as a result of treatment activities. With the exception of the accumulation of as much as fifty-five gallons of hazardous waste in containers at or near any point of generation where such wastes initially accumulate, as permitted by, and in a manner consistent with, Ohio Administrative Code Rule 3745-52-34(C), no hazardous waste treatment residues shall remain on-site for more than ninety (90) days.
  - m. It is the expectation of RVAAP/Ravenna Arsenal that all obligations arising under this order will be fully funded. RVAAP/Ravenna Arsenal agrees to seek sufficient funding through the Army budgetary process to fulfill its obligations under this Order. Failure to obtain adequate funds does not in any way release RVAPP/Ravenna Arsenal from complying with the terms of these Orders.
2. RVAAP/Ravenna Arsenal, by its acceptance of this exemption, agrees to comply with all conditions of the exemption and acknowledges that RVAAP/Ravenna Arsenal's failure to so comply may result in immediate

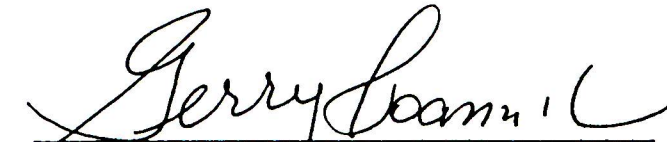


Director's Final Findings and Orders  
Ravenna Army Ammunition Plant  
PAGE FIVE

revocation of this exemption and, if appropriate, further legal action by Ohio EPA.

3. This exemption shall be effective until the HWFB has made a final determination on RVAAP/Ravenna Arsenal's Part B permit application.

IT IS SO ORDERED:

  
Donald R. Schregardus, Director *DRS*  
Ohio Environmental Protection Agency

JUL 30 1992

---

Date

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Carin Date 7-30-92

JUL 30 1992  
DIRECTOR'S OFFICE

Director's Final Findings and Orders  
Ravenna Army Ammunition Plant  
PAGE SIX

I certify this to be a true and accurate copy of the  
official document as filed in the records of the Ohio  
Environmental Protection Agency.

By: Mary Cavina Date 7-30-92

WAIVER

Ravenna Arsenal and Ravenna Army Ammunition Plant hereby waive the right to appeal the issuance, terms, and service of these orders, and hereby waive any and all rights they might have to seek judicial review of these Final Findings and Orders, either at law or in equity. In the event that these Final Findings and Orders are appealed by any other party to the Environmental Board of Review or any court, nothing in these Final Findings and Orders shall preclude the right of Ravenna Arsenal or Ravenna Army Ammunition Plant to intervene and participate in such appeal. In such event, Ravenna Arsenal and Ravenna Army Ammunition Plant shall continue to comply with these Final Findings and Orders notwithstanding such appeal and intervention unless these Final Findings and Orders are stayed, vacated, or modified.

IT IS SO AGREED:

RAVENNA ARSENAL, INC.

By: Wulff 20 July 1992

RAVENNA ARMY AMMUNITION PLANT

By: Robert J. Kasper 17 Jul 92  
Robert J. Kasper Date

OHIO ENVIRONMENTAL PROTECTION AGENCY

By: Gerry Loannell JUL 30 1992  
Donald R. Schregardus FOR Date  
Director

07-30-92  
DIRECTOR'S



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.  
Columbus, Ohio 43266-0149  
(614) 644-3020  
FAX (614) 644-2329

8/3/92  
HS  
RET 8/3/92

Tom C  
suc no  
File

George V. Voinovich  
Governor

Donald R. Schregardus  
Director

July 30, 1992

Re: Director's Final Findings & Orders  
Ravenna Arsenal, Inc.  
Ravenna Army Ammunition Plant  
U.S. EPA ID No.: OH5210020736

CERTIFIED MAIL

Ravenna Arsenal, Inc.  
Ravenna Army Ammunition Plant  
Attn: Thomas Chanda, Environmental Engineer  
8451 State Route 5  
Ravenna, Ohio 44266-9297

General Manager  
Ravenna Arsenal, Inc.  
FWD FOR  
Information  
Availability of  
Records

Dear Mr. Chanda:

Transmitted herewith are Final Findings & Orders of the Director concerning the matter indicated.

Very truly yours,

*Thomas E. Crepeau*

Thomas E. Crepeau, Manager  
Data Management Section  
Division of Hazardous Waste Management

TEC/dhs

cc: Mark Navarre, Legal  
Mike Savage, Asst. Chief, DHWM  
Ed Lim, Manager, RCRA Eng. Section, DHWM  
Paul Anderson, DHWM, NEDO

fandocvrltr(37)

8/3/92

TO	OFFICE	ACTION
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<input type="checkbox"/>	ACCTG	
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<input type="checkbox"/>	P&CA	
<input type="checkbox"/>	SAF	
<input type="checkbox"/>	DPM	
<input type="checkbox"/>	RETURN	

## STATEMENT OF NPDES PERMIT FEE DUE

PLEASE RETURN THIS COPY WITH YOUR REMITTANCE

ENTITY NAME: Ravenna Army Ammunition Plant OEPA PERMIT NO.: 31000000\*ED  
 EFFECTIVE DATE: November 1, 1992

MAILING ADDRESS: 8451 State Route 5  
 Ravenna, Ohio 44266

FACILITY LOCATION: Ravenna Army Ammunition Plant  
 8451 State Route 5  
 Ravenna, Ohio 44266

Permit fees for the above facility were computed in accordance with the following information and at rates established in Section 3745.11(C) of the Ohio Revised Code.

OUTFALL NUMBER	DESIGN FLOW DISCHARGE (GPD)	RATE \$	CHARGES \$
001	65,000	\$300	\$300
002	350,000	\$750	\$750
003	350,000	\$750	\$750
004	11,000	\$200	\$200
005	3,000	\$100	\$100
006	6,000	\$200	\$200

FEE PAYMENT DUE: \$2,300

Please remit not later than fifteen days after the cited effective date of this permit. Make check payable to "Treasurer of the State of Ohio" and mail it to Permits Bookkeeper, Ohio Environmental Protection Agency, 1800 WaterMark Drive, P. O. Box 1049, Columbus, Ohio, 43266-0149. Please enclose this copy with your payment.

Form EPA 4421

Page 1 of 23

OEPA Permit No. 3I000000\*ED

Application No. OH0010936

Issue Date: October 5, 1992

Effective Date: November 1, 1992

Expiration Date: October 28, 1997

OHIO ENVIRONMENTAL PROTECTION AGENCY  
AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq. hereinafter referred to as "the Act"), and the Ohio Water Pollution Control Act (Ohio Revised Code Section 6111),

U.S. Department of the Army

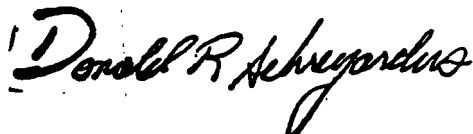
is authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA", to discharge from the Ravenna Army Ammunition Plant wastewater treatment works located at 8451 State Route 5, Ravenna, Ohio, Portage County

and discharging to Hinkley Creek and unnamed tributaries to Hinkley Creek, Sand Creek, and the West Branch of the Mahoning River

in accordance with the conditions specified in Parts I, II and III of this permit.

This permit is conditioned upon payment of applicable fees as required by Section 3745.11 of the Ohio Revised Code.

This permit and the authorization to discharge shall expire at midnight on the expiration date shown above. In order to receive authorization to discharge beyond the above date of expiration, the permittee shall submit such information and forms as are required by the Ohio EPA no later than 180 days prior to the above date of expiration.



Donald R. Schregardus  
Director

2881P

Form EPA 4428

**PART I, A. - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from the following outfall: 3I000000004. SEE PART II, OTHER REQUIREMENTS, for location of effluent sampling.

<u>EFFLUENT CHARACTERISTIC</u>		<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENT</u>	
		Concentration		Loading***		Measurement Frequency*	Sample Type
REPORTING CODE/UNITS	PARAMETER	Other Units	(Specify) 30 DAY DAILY	kg/day 30 DAY DAILY			
00515 MG/L	Residue, Total Dissolved	500	750	20.8	31.2	1/Week	Grab
00530 MG/L	Residue, Total Nonfilterable	30	45	1.2	1.9	1/Week	Grab
00940 MG/L	Chloride, Total	-	-	-	-	1/Week	Grab
50050 MGD	Flow Rate	-	-	-	-	1/Week	24 Hr. Total

\* During discharge.

\*\* Estimated flow is acceptable if there is no discharge.

\*\*\* Effluent loading limitations based on a flow of 0.011 MGD.

2. There are no monitoring requirements when facilities are in layaway status provided there is no discharge. Report "AC" on the monthly report forms during those periods.
3. Ion exchange wastewater shall be discharged from the brine storage tank at a controlled rate and not released rapidly as a slug.
4. The pH (Reporting Code 00400) shall not be less than 6.5 S.U. nor greater than 9.0 S.U. and shall be monitored 1/week by grab sample.
5. Samples taken in compliance with monitoring requirements specified above shall be taken at Sampling Stations described in Part II, OTHER REQUIREMENTS.

**PART I, A. - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from the following outfall: 31000000005. SEE PART II, OTHER REQUIREMENTS, for location of effluent sampling.

<u>EFFLUENT CHARACTERISTIC</u>		<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
REPORTING CODE/UNITS	PARAMETER	Concentration		Loading***		Measurement Frequency*	Sample Type
		Other Units (Specify)		kg/day			
		30 DAY	DAILY	30 DAY	DAILY		
00515 MG/L	Residue, Total Dissolved	500	750	5.5	8.3	1/week	Grab
00530 MG/L	Residue, Total Nonfilterable	30	45	0.34	0.50	1/week	Grab
00940 MG/L	Chloride, Total	-	-	-	-	1/week	Grab
50050 MGD	Flow Rate	-	-	-	-	1/week	24 Hr. Total

\* During discharge.

\*\* Estimated flow is acceptable if there is no discharge.

\*\*\* Effluent loading limitations based on a flow of 0.003 MGD.

2. There are no monitoring requirements when facilities are in layaway status provided there is no discharge. Report "AC" on the monthly report forms during those periods.
3. Ion exchange wastewater shall be discharged from the brine storage tank at a controlled rate and not released rapidly as a slug.
4. The pH (Reporting Code 00400) shall not be less than 6.5 S.U. nor greater than 9.0 S.U. and shall be monitored 1/week by grab sample.
5. Samples taken in compliance with monitoring requirements specified above shall be taken at Sampling Stations described in Part II, OTHER REQUIREMENTS.

**PART I, A. - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from the following outfall: 3100000006. SEE PART II, OTHER REQUIREMENTS, for location of effluent sampling.

<u>EFFLUENT CHARACTERISTIC</u>		<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
		Concentration		Loading***		Measurement Frequency*	Sample Type
REPORTING CODE/UNITS	PARAMETER	Other Units	(Specify)	kg/day			
		30 DAY	DAILY	30 DAY	DAILY		
00335 MG/L	Chemical Oxygen Demand	20	30	0.45	0.68	1/Week	Composite
00530 MG/L	Residue, Total Nonfilterable	30	45	0.68	1.02	1/Week	Composite
50050 MGD	Flow Rate	-	-	-	-	Daily	24 Hr. Total
75120 MG/L	Toluene, Methylbenzene	-	-	-	-	2/Year	Composite
81360 UG/L	Trinitrotoluene, Total	-	140	-	0.0032	1/Week	Composite
81533 UG/L	Dinitrotoluene, Total	-	-	-	-	2/Year	Composite

\* Except on days when the facility is not normally staffed. Report "AN" on the monthly report forms for those days.

\*\* Estimated flow is acceptable if there is no flow meter.

\*\*\* Effluent loading limitations based on a flow of 0.006 MGD.

- The method used to monitor TNT (Trinitrotoluene) and DNT (Dinitrotoluene) should have a detection limit no greater than 10 ug/l.
- The pH (Reporting Code 00400) shall not be less than 6.5 S.U. nor greater than 9.0 S.U. and shall be monitored 1/week by grab sample.
- Samples taken in compliance with monitoring requirements specified above shall be taken at Sampling Stations described in Part II, OTHER REQUIREMENTS.



**PART I, B. - ADDITIONAL MONITORING REQUIREMENTS**

1. Upstream and Downstream. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee shall monitor the receiving stream, upstream of the point of discharge at Station Number 3I000000800, and downstream of the point of discharge at Station Number 3I000000900, and report to the Ohio EPA in accordance with the following table. See PART II, OTHER REQUIREMENTS for location of sampling.

<u>CHARACTERISTIC</u>			<u>MONITORING REQUIREMENTS</u>	
Reporting Code	Units	Parameter	Measurement Frequency*	Sample Type
01030	UG/L	Chromium, Dissolved (Cr)	1/Month	Grab
01118	UG/L	Chromium, Total Recoverable	1/Month	Grab

\* The sample shall be taken within 30 minutes of the initial discharge following a storm event. If during any month there is no rainfall the sample shall be taken on the last day of that month.

2. Samples taken in compliance with monitoring requirements specified above shall be taken at Sampling Stations described in Part II, OTHER REQUIREMENTS.

**PART I, C. - SCHEDULE OF COMPLIANCE**

1. The permittee shall achieve compliance with the Final Effluent Limitations for outfalls 3I000000001, 3I000000002, and 3I000000003 as specified in Part I.A. of this NPDES permit as expeditiously as practicable. In any event the permittee shall attain final compliance not later than the dates developed in accordance with the following schedule:
  - A. Within 8 months of the effective date of this NPDES permit, the permittee shall submit to the Ohio EPA Northeast District Office, a complete and approvable Permit-to-Install (PTI) application and detailed plans for achieving final compliance for outfalls 3I000000001, 3I000000002 and 3I000000003.
  - B. Within 12 months of the effective date of this NPDES permit, the permittee shall initiate construction.
  - C. Within 17 months of the effective date of this NPDES permit, the permittee shall have completed construction.
  - D. Within 18 months of the effective date of this NPDES permit, the permittee shall have attained full compliance with the Final Effluent Limitations for outfalls 3I000000001, 3I000000002 and 3I000000003.
2. The permittee shall submit written verification to the Ohio EPA Northeast District Office of the completion of steps 1.B, 1.C and 1.D of this schedule of compliance within 14 days after completion of each step.

**PART II, OTHER REQUIREMENTS**

A. Description of the location of the required sampling stations are as follows:

<u>Sampling Station</u>	<u>Description of Location</u>
3I000000001	At a point representative of discharge from sewage treatment plant prior to entry to Hinkley Creek. (Lat: 41° 11' 01"; Long: 81° 08' 26")
3I000000002	At a point representative of discharge from sewage treatment plant prior to entry to the unnamed tributary of the west branch of Mahoning River. (Lat: 41° 10' 13"; Long: 81° 04' 43")
3I000000003	At a point representative of discharge from sewage treatment plant prior to entry to unnamed tributary to Sand Creek. (Lat: 41° 12' 16"; Long: 81° 06' 08")
3I000000004	At a point representative of discharge from waterworks #3 prior to entry to unnamed tributary to Hinkley Creek. (Lat: 41° 10' 44"; Long: 81° 06' 48")
3I000000005	At a point representative of discharge from waterworks #2 treatment plant prior to entry to unnamed tributary to Sand Creek. (Lat: 41° 11' 04"; Long: 81° 02' 40")
3I000000006	At a point representative of discharge from projectile melt-out treatment system prior to entry to unnamed tributary to Sand Creek. (Lat: 41° 11' 30"; Long: 81° 02' 55")
3I000000602	At a point representative of discharge from Load Line #6 assembly area treatment system prior to discharge to sanitary system. (Lat: 41° 10' 56"; Long: 81° 06' 14")
3I000000603	At a point representative of discharge from Load Line #7 prior to discharge to sanitary sewer. (Lat: 41° 11' 00"; Long: 81° 06' 26")
3I000000800	At a point at least 100 yards upstream of Ferrochrome storage area on railroad ditch to an unnamed tributary to west branch of the Mahoning River.
3I000000900	At a point no greater than 50 yards downstream of Ferrochrome storage area on railroad ditch to an unnamed tributary to west branch of the Mahoning River.

B. If Severity Units are required for Turbidity, Odor, or Color, use the following table to determine the value between 0 and 4 that is reported:

REPORTED VALUE *	SEVERITY DESCRIPTION	TURBIDITY	ODOR	COLOR
0	None	Clear	None	Colorless
1	Mild			
2	Moderate	Light Solids	Musty	Grey
3	Serious			
4	Extreme	Heavy Solids	Septic	Black

\* Interpolate between the descriptive phrases.

**PART II, OTHER REQUIREMENTS (Cont.)**

- C. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2) (C), and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
- (1) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
  - (2) Controls any pollutant not limited in the permit.
- The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.
- D. In the event that the permittee's operation requires the use of cooling or boiler water treatment additives that are discharged to surface waters of the state, written permission must be obtained from the director of the Ohio EPA prior to use. Reporting and testing requirements to apply for permission to use additives can be obtained from the Ohio EPA, Central Office, DWPC, Enforcement and Compliance Section. Reported information will be used to evaluate whether the use of the additive(s) at concentrations expected in the final discharge will be harmful or inimical to aquatic life.
- E. Permit limitations may be revised in order to meet water quality standards after a stream use determination and waste load allocation are completed and approved. This permit may be modified, or, alternatively, revoked and reissued, to comply with any applicable water quality effluent limitations.
- F. There shall be no detectable amount of any priority pollutant attributable to cooling tower maintenance chemicals in the cooling tower blowdown wastewater.

## PART III - GENERAL CONDITIONS

1. DEFINITIONS

"daily load limitations" is the total discharge by weight during any calendar day. If only one sample is taken during a day, the weight of pollutant discharge calculated from it is the daily load.

"daily concentration limitation" means the arithmetic average (weighted by flow) of all the determinations of concentration made during the day. If only one sample is taken during the day its concentration is the daily concentration. Coliform bacteria limitations compliance shall be determined using the geometric mean.

"7-day load limitation" is the total discharge by weight during any 7-day period divided by the number of days in that 7-day period that the facility was in operation. If only one sample is taken in a 7-day period the weight of pollutant discharge calculated from it is the 7-day load. If more than one sample is taken during the 7-day period the 7-day load is calculated by determining the daily load for each day sampled, totaling the daily loads for the 7-day period and dividing by the number of days sampled.

"7-day concentration limitation" means the arithmetic average (weighted by flow) of all the determinations of daily concentration limitation made during the 7-day period. If only one sample is taken during the 7-day period, its concentration is the 7-day concentration limitation for that 7-day period. Coliform bacteria limitations compliance shall be determined using the geometric mean.

"30-day load limitation" is the total discharge by weight during any 30-day period divided by the number of days in the 30-day period that the facility was in operation. If only one sample is taken in a 30-day period the weight of pollutant discharge calculated from it is the 30-day load. If more than one sample is taken during one 30-day period the 30-day load is calculated by determining the daily load for each day sampled, totaling the daily loads for the 30-day period and dividing by the number of days sampled.

"30-day concentration limitation" means the arithmetic average (weighted by flow) of all the determinations of daily concentration made during the 30-day period. If only one sample is taken during the 30-day period, its concentration is the 30-day concentration for that 30-day period. Coliform bacteria limitations compliance shall be determined using the geometric mean.

"85 percent removal limitations" means the arithmetic mean of the values for effluent samples collected in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

Absolute Limitations. Compliance with limitations having descriptions of "shall not be less than", "nor greater than", "shall not exceed", "minimum", or "maximum", shall be determined from any single value for effluent samples and/or measurements collected.

"Net concentration" shall mean the difference between the concentration of a given substance in a sample taken of the discharge and the concentration of the same substances in a sample taken at the intake which supplies water to the given process. For the purpose of this definition samples that are taken to determine the net concentration shall always be 24-hour composite samples made up of at least six increments taken at regular intervals throughout the plant day.

"Net load" shall mean the difference between the load of a given substance as calculated from a sample taken of the discharge and the load of the same substance in a sample taken at the intake which supplies water to given process. For purposes of this definition samples that are taken to determine the net loading shall always be 24-hour composite samples made up of at least six increments taken at regular intervals throughout the plant day.

"MGD" means million gallons per day

"mg/l" means milligrams per liter

"ug/l" means micrograms per liter

"Reporting Code" is a five digit number used by the Ohio EPA in processing reported data. The reporting code does not imply the type of analysis used nor the sampling techniques employed.

Quarterly sampling frequency means the sampling shall be done in the months of March, June, August and December.

Yearly sampling frequency means the sampling shall be done in the month of September.

Semi-annual sampling frequency means the sampling shall be done during the months of June and December.

Winter shall be considered to be the period from November 1 thru April 30.

**"Bypass"** means the intentional diversion of waste streams from any portion of the treatment facility.

**Summer** shall be considered to be the period from May 1 thru October 31.

**"Severe property damage"** means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

**"Upset"** means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

## 2. GENERAL EFFLUENT LIMITATIONS

The effluent shall, at all times, be free of substances:

- A. In amounts that will settle to form putrescent, or otherwise objectionable, sludge deposits; or that will adversely affect aquatic life or water fowl;
- B. Of an oily, greasy, or surface-active nature, and of other floating debris, in amounts that will form noticeable accumulations of scum, foam or sheen;
- C. In amounts that will alter the natural color or odor of the receiving water to such degree as to create a nuisance;
- D. In amounts that either singly or in combination with other substances are toxic to human, animal, or aquatic life;
- E. In amounts that are conducive to the growth of aquatic weeds or algae to the extent that such growths become inimical to more desirable forms of aquatic life, or create conditions that are unsightly, or constitute a nuisance in any other fashion;
- F. In amounts that will impair designated instream or downstream water uses.

## 3. FACILITY OPERATION AND QUALITY CONTROL

All wastewater treatment works shall be operated in a manner consistent with the following:

- A. At all times, the permittee shall maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee necessary to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with conditions of the permit.
- B. The permittee shall effectively monitor the operation and efficiency of treatment and control facilities and the quantity and quality of the treated discharge.
- C. Maintenance of wastewater treatment works that results in degradation of effluent quality shall be scheduled during non-critical water quality periods and shall be carried out in a manner approved by the Ohio EPA as specified in the Paragraph in this PART III entitled, "UNAUTHORIZED DISCHARGES".

## 4. REPORTING

- A. Monitoring data required by this permit shall be reported on the Ohio EPA report form (4500) on a monthly basis. Individual reports for each sampling station for each month are to be received no later than the 15th day of the next month. The original plus first copy of the report form must be signed and mailed to:

Ohio Environmental Protection Agency  
Div Water Pollution Control  
Enforcement Section, ES/MOR  
PO Box 1049  
Columbus, Ohio 43266-0149

- B. If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified below, the results of such monitoring shall be included in the calculation and reporting of the values required in the reports specified above.
- C. Analyses of pollutants not required by this permit, except as noted in the preceding paragraph, shall not be reported on Ohio EPA report form (4500) but records shall be retained as specified in the paragraph entitled "RECORDS RETENTION".

#### 5. SAMPLING AND ANALYTICAL METHODS

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored flow. Test procedures for the analysis of pollutants shall conform to regulation 40 CFR 136, "Test Procedures For The Analysis of Pollutants" unless other test procedures have been specified in this permit. The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to insure accuracy of measurements.

#### 6. RECORDING OF RESULTS

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- A. The exact place and date of sampling; (time of sampling not required on EPA 4500)
- B. The person(s) who performed the sampling or measurements;
- C. The date the analyses were performed on those samples;
- D. The person(s) who performed the analyses;
- E. The analytical techniques or methods used; and
- F. The results of all analyses and measurements

#### 7. RECORDS RETENTION

The permittee shall retain all of the following records for the wastewater treatment works for a minimum of three years, including:

- A. All sampling and analytical records (including internal sampling data not reported);
- B. All original recordings for any continuous monitoring instrumentation;
- C. All instrumentation, calibration and maintenance records; and
- D. All plant operation and maintenance records.
- E. All reports required by this permit.
- F. Records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report or application.

These periods will be extended during the course of any unresolved litigation, or when so requested by the Regional Administrator or the Ohio EPA. The three year period for retention of records shall start from the date of sample, measurement, report or application.

#### 8. AVAILABILITY OF REPORTS

Except for data determined by the Ohio EPA to be entitled confidential status, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the appropriate District Offices of the Ohio EPA. Both the Clean Water Act and Section 6111.05 Ohio Revised Code state that effluent data and receiving water quality data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in the Ohio Revised Code Section 6111.99.

#### 9. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

#### 10. RIGHT OF ENTRY

The permittee shall allow the Director, or an authorized representative upon presentation of credentials and other documents as may be required by law to:

- A. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.
- B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit.
- C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.

D. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

11. UNAUTHORIZED DISCHARGES

A. Bypassing or diverting of wastewater from the treatment works is prohibited unless:

1. Bypass was unavoidable to prevent loss of life, personal injury or severe property damage;
2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of downtime. This condition is not satisfied if adequate back up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
3. The permittee submitted notices as required under paragraph D. of this section.

B. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

C. The Director may approve an unanticipated bypass, after considering its adverse effects, if the Director determines that it has met the three conditions listed in paragraph 11. A. of this section.

D. The permittee shall submit notice of an unanticipated bypass as required in section 12 (one hour notice).

E. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded if that bypass is for essential maintenance to assure efficient operation.

12. NONCOMPLIANCE NOTIFICATION

A. The permittee shall by telephone report any of the following within twenty-four (24) hours of discovery, at (toll free) 1-800-282-9378:

1. Any noncompliance which may endanger health or the environment;
2. Any unanticipated bypass which exceeds any effluent limitation in the permit; or
3. Any upset which exceeds any effluent limitation in the permit.
4. Any violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit.

B. For the telephone reports required by Part 12.A, the following information must be included:

1. The times at which the discharge occurred, and was discovered;
2. The approximate amount and the characteristics of the discharge;
3. The stream(s) affected by the discharge;
4. The circumstances which created the discharge;
5. The names and telephone numbers of the persons who have knowledge of these circumstances;
6. What remedial steps are being taken; and
7. The names and telephone numbers of the persons responsible for such remedial steps.

C. These telephone reports shall be confirmed in writing within five days of the discharge and submitted to the appropriate Ohio EPA District office. The report shall include the following:

1. The limitation(s) which has been exceeded;
2. The extent of the exceedance(s);
3. The cause of the exceedance(s);
4. The period of the exceedance(s) including exact dates and times;
5. If uncorrected, the anticipated time the exceedance(s) is expected to continue, and
6. Steps being taken to reduce, eliminate and/or prevent recurrence of the exceedance(s).



**D. Compliance Schedule Events:**

If the permittee is unable to meet any date for achieving an event, as specified in the Schedule of Compliance, the permittee shall submit a written report to the appropriate District Office of the Ohio EPA within 14 days of becoming aware of such situation. The report shall include the following:

1. The compliance event which has been or will be violated;
  2. The cause of the violation;
  3. The remedial action being taken;
  4. The probable date by which compliance will occur; and
  5. The probability of complying with subsequent and final events as scheduled.
- E. The permittee shall report all instances of noncompliance not reported under paragraphs A, B, or C of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraphs B and C of this section.
- F. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

**13. RESERVED****14. Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

**15. AUTHORIZED DISCHARGES**

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than, or at a level in excess of, that authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such violations may result in the imposition of civil and/or criminal penalties as provided for in Section 309 of the Act, and Ohio Revised Code Sections 6111.09 and 6111.99

**16. DISCHARGE CHANGES**

The following changes must be reported to the appropriate Ohio EPA District Office as soon as practicable.

- A. For all treatment works, any significant change in character of the discharge which the permittee knows or has reason to believe has occurred or will occur which would constitute cause for modification or revocation and reissuance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. Notification of permit changes or anticipated noncompliance does not stay any permit condition.
- B. For publicly owned treatment works:
  1. Any proposed plant modification, addition and/or expansion that will change the capacity or efficiency of the plant;
  2. The addition of any new significant industrial discharge; and
  3. Changes in the quantity or quality of the wastes from existing tributary industrial discharges which will result in significant new or increased discharges of pollutants.
- C. For non-publicly owned treatment works, any proposed facility expansions, production increases, or process modifications, which will result in new, different, or increased discharges of pollutants.

Following this notice, modifications to the permit may be made to reflect any necessary changes in permit conditions, including any necessary effluent limitations for any pollutants not identified and limited herein. A determination will also be made as to whether a National Environmental Policy Act (NEPA) review will be required. Sections 6111.44 and 6111.45, Ohio Revised Code, require that plans for treatment works or improvements to such works be approved by the Director of the Ohio EPA prior to initiation of construction.

- D. In addition to the reporting requirements under 40 CFR 122.41(1) and per 40 CFR 122.42(a), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

1. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" specified in 40 CFR Sections 122.42(a)(1)(i) through 122.42(a)(1)(iv).
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" specified in 122.42(a)(2)(i) through 122.42(a)(2)(iv).

**17. TOXIC POLLUTANTS**

The permittee shall comply with effluent standards or prohibitions established under Section 307 (a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement. Following establishment of such standards or prohibitions, the Director shall modify this permit and so notify the permittee.

**18. PERMIT MODIFICATION OR REVOCATION**

- A. After notice and opportunity for a hearing, this permit may be modified or revoked, by the Ohio EPA, in whole or in part during its term for cause including, but not limited to, the following:
  1. violation of any terms or conditions of this permit;
  2. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
  3. a change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.
- B. Pursuant to rule 3745-33-06, Ohio Administrative Code the permittee may at any time apply to the Ohio EPA for modification of any part of this permit. The filing of a request by the permittee for a permit modification or revocation does not stay any permit condition. The application for modification should be received by the appropriate Ohio EPA District Office at least ninety days before the date on which it is desired that the modification become effective. The application shall be made only on forms approved by the Ohio EPA.

**19. TRANSFER OF OWNERSHIP OR CONTROL**

This permit cannot be transferred or assigned nor shall a new owner or successor be authorized to discharge from this facility, until the following requirements are met:

- A. The permittee shall notify the succeeding owner or successor of the existence of this permit by a letter, a copy of which shall be forwarded to the appropriate Ohio EPA District Office. The copy of that letter will serve as the permittee's notice to the Director of the proposed transfer. The copy of that letter shall be received by the appropriate Ohio EPA District Office sixty days prior to the proposed date of transfer;
- B. A written agreement containing a specific date for transfer of permit responsibility and coverage between the current and new permittees (including acknowledgement that the existing permittee is liable for violations up to that date, and that the new permittee is liable for violations from that date on) shall be submitted to the appropriate Ohio EPA District Office within sixty days after receipt by the District Office of the copy of the letter from the permittee to the succeeding owner;
- C. The Director does not exercise his right within thirty days after receipt of the written agreement to notify the current permittee and the new permittee of his or her intent to modify or revoke the permit and to require that a new application be filed; and
- D. The new owner or successor receives written confirmation and approval of the transfer from the Director of the Ohio EPA.

At anytime during the sixty (60) day period between notification of the proposed transfer and the effective date of the transfer, the Director may prevent the transfer if he concludes that such transfer will jeopardize compliance with the terms and conditions of the permit.

**20. OIL AND HAZARDOUS SUBSTANCE LIABILITY**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

**21. SOLIDS DISPOSAL**

Collected screenings, slurries, sludges and other solids shall be disposed of in such a manner as to prevent entry of those wastes into waters of the State. For publicly owned treatment works these shall be disposed of in accordance with the approved OEPA Sludge Management Plan.

**22. CONSTRUCTION AFFECTING NAVIGABLE WATERS**

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

**23. CIVIL AND CRIMINAL LIABILITY**

Except as exempted in the permit conditions on UNAUTHORIZED DISCHARGES or UPSETS, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

**24. STATE LAWS AND REGULATIONS**

Nothing in this permit shall be construed to preclude the institution of any legal action nor relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Act.

**25. PROPERTY RIGHTS**

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, state, or local laws or regulations.

**26. UPSET**

The provisions of 40 CFR Section 122.41(n), relating to "Upset," are specifically incorporated herein by reference in their entirety. For definition of "upset", see Part III, 1, DEFINITIONS.

**27. SEVERABILITY**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

**28. SIGNATORY REQUIREMENTS**

All applications submitted to the Director shall be signed and certified in accordance with the requirements of 40 CFR 122.22(b) and (c).

All reports submitted to the Director shall be signed and certified in accordance with the requirements of 40 CFR Section 122.22(b) and (c).

**29. OTHER INFORMATION**

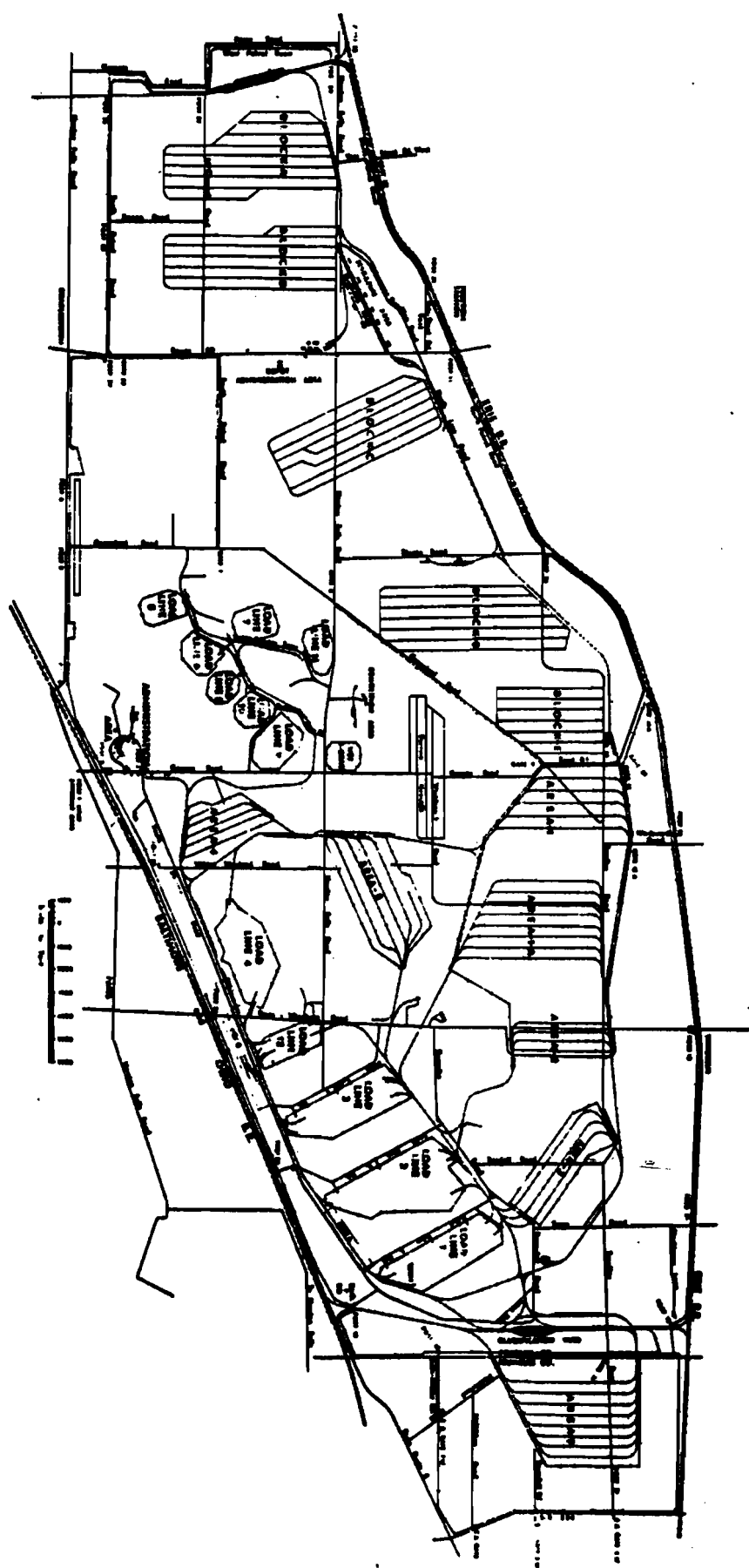
- A. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.
- B. ORC 6111.99 provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$25,000 per violation.
- C. ORC 6111.99, states that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$25,000 per violation.
- D. ORC 6111.99 provides that any person who violates Sections 6111.04, 6111.042, 6111.05, or division (A) of Section 6111.07 of the Revised Code shall be fined not more than twenty-five thousand dollars or imprisoned not more than one year, or both.

**30. NEED TO HALT OR REDUCE ACTIVITY**

40 CFR 122.41(c), states that it shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with conditions of this permit.

**31. APPLICABLE FEDERAL RULES**

All references to 40 CFR in this permit mean the version of 40 CFR which is effective as of the effective date of this permit.



<b>BAVARIA ARMY AMMUNITION PLANT</b> GENERAL AREA MAP A-100	
DATE: 1954 SCALE: AS SHOWN DRAWN BY: [Name] CHECKED BY: [Name]	PROJECT NO. [Number] DRAWING NO. [Number]
APPROVED BY: [Signature] TITLE: [Title]	APPROVED BY: [Signature] TITLE: [Title]
PREPARED BY: [Name] TITLE: [Title]	CHECKED BY: [Name] TITLE: [Title]
DRAWN BY: [Name] TITLE: [Title]	CHECKED BY: [Name] TITLE: [Title]
DATE: [Date]	SCALE: [Scale]